

INDIANA K-8 CURRICULUM DEVELOPMENT GUIDELINES FOR BUSINESS AND INFORMATION TECHNOLOGY FOCUSING ON KEYBOARDING AND THE MIDDLE SCHOOL

(This document is a consolidation of two documents: the “Indiana Guidelines for K-12 Keyboarding/Computer Applications” and the “Indiana Business and Information Technology Middle School Curriculum, Grades 6-8”)



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Preface

Indiana K-8 Curriculum Development Guidelines for Business and Information Technology Focusing on Keyboarding and the Middle School (GUIDELINES) was written to provide rationale and recommendations for planning and maintaining K-8 keyboarding, computer technology/applications, and other business content in middle school programs. Emphasis is placed on using sound pedagogical practices and procedures to prepare students to use information and computer technology throughout the middle school curriculum and beyond. **GUIDELINES** is a consolidation of two documents; namely, “Guidelines for K-12 Keyboarding/Computer Applications” and “**Indiana Business and Information Technology Middle School Curriculum.**”

The focal point of **GUIDELINES** is the preparation of students to be informed, productive users of information technology and capable information managers and to be knowledgeable about pertinent personal business concepts. Part I (Keyboarding—Requisites for Successful Teaching-Learning) focuses on keyboarding as a computer input method. (Even though speech, handwriting, and other input methodologies are currently in use, there is no indication that these methodologies will replace the keyboard in importance in the business world during the next few years.) In Part I, the instructional design and teacher competencies requisite for teaching keyboarding effectively are presented. In Part II (Middle School Curriculum—Business and Information Technology Content Integration and Instructional Strategies), content standards, performance expectations, instructional strategies, assessment strategies, and supplementary resources are presented for each of the four content areas. The Business and Information Technology content in the Middle School Curriculum supports many of the Indiana Academic Standards in English/language arts, mathematics, and social studies. These and other academic areas will benefit because expertise in information technology will enable students to perform more efficiently on computer-related activities in all classes. The appendices (Part III) contain supplementary material, including projects, referred to in various sections of the document.

GUIDELINES was written for the consideration of school board members; superintendents; curriculum directors; principals; technology coordinators; high school, middle school, and elementary school teachers; business teacher educators; parents; and other professionals involved in designing, implementing, and administering curricula. All educators whose students, regardless of their grade level, use computer technology will find pertinent information in **GUIDELINES**. Because the audience for which **GUIDELINES** is written is so broad, the document is divided into sections that permit quick access to material relevant to a particular topic. If someone were to read the document “straight through” he/she would probably be concerned about redundancy of information here and there. This redundancy was built-in to provide a complete context for the information presented in various sections.

One of the strengths of **GUIDELINES** is that its component documents have gone through a developmental process since 1993 with revisions in 1998 and 2005. Indiana educators and other professional personnel who understand students’ needs for keyboarding/computer technology and applications and other business content participated in the writing and review of **GUIDELINES**. The premise that students need formal keyboarding and computer technology/applications instruction early in their educational careers remains unchanged in 2005; however, changes in technology have had a major impact on the instruction needed. Knowledge of personal business concepts and practices continue to be an important part of a student’s preparation for high school and beyond.

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PART I: KEYBOARDING—REQUISITES FOR SUCCESSFUL TEACHING-LEARNING

Introduction

Information and computer technology enhances all curricular areas by connecting students with resources from around the world. Technology tools impact the way we teach and affect how our students learn. As students use technology, we must help them maximize their expertise and connect it to learning both in and out of the classroom. Thereby, we enable students to develop the personal and professional proficiencies required for success in a constantly changing technological world.

The No Child Left Behind Act (NCLB) of 2001 gave national recognition to the importance of technological literacy. A primary goal of the NCLB (Title II, Part D—Enhancing Education Through Technology, Section 2402—Purposes and Goals) is to improve student academic achievement through the use of technology in elementary and secondary schools. An additional goal (Part D) is “To assist every student in crossing the digital divide by ensuring that every student is technologically literate by the time the student finishes grade 8, regardless of the student’s race, ethnicity, gender, family income, geographic location, or disability.”

Technology literacy is at the heart of the “Indiana Guidelines for K-8 Curriculum Development in Business and Information Technology, with Emphasis on the Middle School” (**GUIDELINES**). The Middle School Business and Information Technology content supports many of the Indiana Academic Standards in the English/language arts, mathematics, science, and social studies areas. In addition, the knowledge and expertise students gain from the Middle School Business and Information Technology content support the achievement of objectives in many other academic areas.

Part I of **GUIDELINES** is based on the premise that ALL students *must know how to use a keyboard effectively if they are to*

capitalize on the potential power of computers for educational, personal, and occupational productivity.

In keeping with this basic premise, it is clear that: (1) at least one semester prior to when students begin to use the keyboard for word, phrase, or paragraph input, developmental instruction leading to the control of the keys by touch must be started, and (2) the development of “touch keyboarding” must be continued by instruction and *continuous reinforcement* from the beginning point of instruction through the attainment of keyboarding proficiency.

The National Educational Technology Standards (NETS), developed by the International Society for Technology Education (ISTE), include technology foundation standards that were used by the North Central Regional Educational Laboratory (NCREL) to develop grade-level proficiencies for student technology literacy. **Keyboarding** is included as a component of technology literacy in these proficiencies. These proficiencies (adapted) are presented in Part II of this document. The effective use of computers requires competency in the use of input methods, especially the keyboard.

In addition, keeping pace with technological advances demands that we help our students learn new and emerging computer input methods. The variety of input methods, including speech and handwriting recognition, offers both promise and challenge. Some research indicates the most efficient method of entering information is a combination of keyboarding with other input methodologies (Policies Commission for Business and Economic Education, 2003).

Section 6, “Research, Trends, and Issues,” identifies issues and related research findings pertaining to keyboarding instruction.

Section 1: Focus of Keyboarding/Computer Technology and Applications

Introduction

The technological aspects of life today make it necessary to use keyboarding to access and process information in educational, personal, and occupational environments. Every student must be provided the opportunity to develop the keyboarding/computer technology and application skills necessary for using information management technology efficiently. Keyboarding is one of the communication tools that is used across the curriculum in all grade levels, including collegiate and professional programs, as well as in business and industry.

Keyboarding/computer technology knowledge is essential for effective computer utilization. Use of a keyboard is an integral component of many instructional activities in school curricula. Although a variety of input methods exists (e.g., speech and handwriting recognition), there is no indication (except in specialized areas) that businesses or schools have adopted alternative input methods on a broad scale. Therefore students need to develop keyboarding proficiency as well as become knowledgeable about other methods of inputting information and communicating.

Keyboarding is a psychomotor skill that is developed, refined, and reinforced through a variety of appropriate learning activities. Regardless of the grade level at which students begin to input words and sentences through a keyboard, appropriate instruction for development of this psychomotor skill is necessary. With an emphasis on correct keyboarding techniques and skills, students will develop correct keystroking patterns that will serve them throughout their lives, personally and professionally.

A business teacher licensed in keyboarding instruction is needed to facilitate this process. Conversely, students who develop keyboarding techniques and skills on their own or with inadequate keyboarding instruction learn inefficient keystroking patterns that are extremely difficult to correct later. These ineffective

practices will inhibit the efficient, effective use of computer technology. Refer to Appendix G for information pertaining to breaking bad habits.

The No Child Left Behind (NCLB) Act of 2001 requires students to reach technological proficiency by the completion of the 8th grade. Many states are using the Student Technology Literacy Proficiency Checklist, developed by the North Central Regional Educational Laboratory (NCREL). This checklist is aligned with the National Education Technology Standards for Students (NETS), which has been endorsed or utilized in 48 states. Throughout the eight skill sets included on the NCREL checklist (2003), the need for keyboarding proficiency is evident. Please see Part II for a copy of the NCREL checklist.

Key Terminology

The following three key terms are used throughout [GUIDELINES, Part I](#). These key terms are pivotal to understanding keyboarding/computer technology and applications.

Keyboarding. Keyboarding is the act of entering words or numbers on a keyboard using the touch method for the purpose of inputting, communicating, or processing information. A sustained touch keyboarding speed of **at least** 30 words a minute (D grade level) is essential to personal and professional productivity. (At best, the “hunt and peck” method is an inefficient procedure for building keyboarding skill.)

Touch Keyboarding. Touch keyboarding is using the proper technique to strike correct keys without looking at the fingers or screen to verify keying accuracy.

Keyboarding instruction focuses on students:

- Learning the correct keystroking reaches and techniques.

- Applying correct techniques when using special keys such as enter, tab, and space bar.
- Developing keystroking continuity with speed and accuracy.
- Achieving appropriate standards for early grade-level keyboarding.
- Learning proper techniques, including posture and keystroking.
- Avoiding repetitive stress injuries.

Computer Technology and Applications.

Computer technology refers to the primary components of a computer (central processing unit, input devices, memory, output devices, and storage devices) and how they function with software systems and programs. Computer applications are software programs used to accomplish specific personal or professional information technology processing tasks.

Computer technology and applications instruction focuses on students:

- Understanding the purposes of the components of a computer.
- Understanding the relationship between basic computer hardware and software systems and their components.
- Understanding and correctly using technology-related terminology.
- Learning to use introductory word processing, spreadsheet, database, presentation, desktop publishing, multimedia, graphics, and Web design/creation software. (Industry standards can be achieved through the secondary school business curriculum.)
- Learning to research information via the Internet.
- Learning to evaluate and interpret data.
- Developing the abilities, skills, and attitudes essential for transferring learning to new computer technology.

Part II of **GUIDELINES** provides content standards, performance expectations, instructional strategies, assessment strategies, and supplementary resources for the computer technology and applications area (as well as for other business content—career exploration, personal finance/economics, and business ownership/management—in the middle school).

Section 2: Instructional Design for Keyboarding and Computer Technology and Applications

The components that need to be included in instructional design for keyboarding and computer technology and applications are identified in this section. These components are explained more fully in Section 3 of GUIDELINES.

Leadership Roles

Leadership roles in school districts and at individual schools to support and monitor keyboarding/computer technology and applications need to be defined. Effective leadership is needed to put together a team that can plan for keyboarding/computer technology and application instruction. The team should be vertically articulated by including teachers representing all grade levels, business teachers, computer coordinators, and school administrators. Such a team combines knowledge of student developmental characteristics, teaching and learning objectives, keyboarding methodology, and administrative practices. Instructional plans must incorporate each of these areas. The entire team should be involved in decision making with regard to all the remaining components of instructional design.

Instructional Plan

The instructional plan should include a continuum for providing keyboarding instruction and reinforcement in connection with classroom teaching and learning activities and other computer applications from the beginning point of instruction to the attainment of keyboarding proficiency. (See Section 3 for specific grade-level recommendations.)

Instructional Time

Providing instructional time for developing keyboarding/computer technology and applications skills will require scheduling which considers all students' and teachers' needs. It is important that this instructional time be provided continuously in each grade level following the grade in which the initial keyboarding instruction is started. Appropriate time scheduling is dependent upon the grade level, the developmental level of the student, the nature of the courses in

which computer applications are used, and the school corporation's schedule. Provision of adequate time for business teachers, elementary teachers, and middle school teachers to work together to achieve keyboarding technique development and other teaching/learning goals is important. A variety of instructional information can be located through the resources in Appendices A and B.

Instructional Equipment

Schools need to plan for the acquisition of adequate equipment on a timely basis to support instructional goals. Since instructional materials (e.g., software) are revised on a regular basis, it is paramount that instructional equipment be updated on a regular basis.

Regardless of whether the student is learning in a classroom or in a lab, one student to one computer is the ideal environment for keyboarding instruction. A computer lab is an excellent environment for keyboarding/computer technology and applications instruction. Also some computers should be available in every classroom for continuous student access.

Teachers may have to use their creativity to provide instructional time on the computer for each student. Schools that cannot dedicate space or equipment for a separate lab may be able to provide instruction by using laptop computers.

Instructional Facilities

Schools should follow sound ergonomic principles in designing or adapting facilities to accommodate keyboarding/computer technology and applications instruction. These principles include consideration for lighting, furniture, and electrical power. Light glare, desks and chairs that do not fit the students, and improper provision for power access may present physical hazards as well as make teaching/learning difficult. Also, adequate accommodations for students with physical disabilities should be included when planning for keyboarding/computer technology and applica-

tions instruction. See Appendix E for computer configuration examples.

Instructional Personnel

A licensed business teacher has essential training to teach keyboarding and computer technology and applications (See Section 3: Guidelines for Successful Instruction.). This training includes knowledge of how psychomotor skills are developed and the methodology for applying this understanding to teaching students touch keyboarding techniques. These business and information technology teachers have had training to develop observation and demonstration skills that are an important component of the methodology needed to teach keyboarding effec-

tively. This methodology is used continuously to determine whether or not each student is making appropriate progress in developing keyboarding competency and learning to integrate computer technology and applications in other subject matter disciplines.

Instructional Materials

Software and text materials for developing keyboarding competency as well as for achieving appropriate computer applications objectives should be selected carefully. Decisions should be based upon a hands-on assessment that includes the teaching/learning methodology involved, hardware requirements, and compatibility with corporation-wide objectives.

Section 3: Guidelines for Successful Instruction

At whatever grade level a school or a school district implements a keyboarding/computer technology and applications program, an articulated plan should be developed. This plan should provide for keyboarding/computer technology and applications instruction and reinforcement activities with integration into other subjects on a continuous basis at all grade levels. It is recommended that the classroom teacher develop plans/activities for integration of specific computer applications.

Appendix B is a compilation of ideas and Internet sites that could be developed into projects/activities that could aid in the development of curricular activities. Indiana business teachers have developed additional teaching/learning materials and activities, which are available through the Indiana Department of Education (Appendix A).

Teacher Competencies

Teacher competencies needed for providing instruction in keyboarding/computer technology and applications include:

- Competency in touch keyboarding. Effective teaching requires the ability to demonstrate keyboarding techniques.
- Knowledge of effective methodology for teaching keyboarding/computer technology and applications. Keyboarding/computer technology and applications methodology includes teaching/learning procedures based upon an understanding of psychomotor skill development. (Refer to Appendix G, Keyboarding Instruction, for general principles for teaching the keyboard and for other articles dealing with methodology, building speed and accuracy, breaking bad habits, etc.)
- Awareness of instructional considerations for specific age and grade levels. Adolescents/pre-teens are a unique challenge. Student physiological and maturation factors must be included in planning instruction. (Refer to Appendix F, Teaching Early Adolescents.)

- Knowledge of how to select age-appropriate instructional software and other teaching/learning materials. This area includes recognition that keyboarding “games” frequently include activities and objectives that violate effective teaching/learning principles.
- Knowledge of how to integrate keyboarding/computer technology and applications into curricula as tools for achieving subject-matter objectives. This competency includes working with all academic areas.
- Knowledge of how to assess/evaluate student progress appropriately in keyboarding/computer technology and applications. (Refer to Appendix D, Keyboarding/Voice Recognition and Other Assessment Resource Materials.)
- Familiarity with special needs students. (Refer to Appendix H, Teaching Special Populations.)
- Knowledge of the school curriculum. Familiarity with integration of keyboarding/computer technology and applications among grade levels and within specific subject matter must be based on a school curriculum approach.
- Appropriate credentials, which are evidence of preparation for teaching this psychomotor skill. If keyboarding is taught at grades K-4, it is ***strongly recommended*** that a licensed business teacher in conjunction with an elementary teacher provide the instruction. If keyboarding or computer applications instruction is provided at the middle school or higher-grade levels, the instructor *must have an appropriate business teacher license*.
- Continuous professional development with regard to new technology and innovative instructional strategies. State and national conferences, workshops, and tech camps can be helpful in this regard.

Instructional Methods

Instructional methods should be selected on the basis of the students, the teachers, and the equipment involved in a specific keyboarding/

computer technology and applications program. Essential components of keyboarding/computer technology applications instruction are listed below. (Professional development should address each of these components.)

- Business teacher involvement with the classroom teacher in cooperative teaching and other team teaching activities for any keyboarding instruction in grades K-5 and in various subject areas.
- Teacher demonstration of correct keyboarding/computer technology and applications techniques.
- Student use of the computer keyboard with emphasis on correct techniques.
- Student and teacher use of appropriate software programs. (See Section 6: Research, Trends, and Issues: “Who Should Teach Keyboarding and What Kinds of Activities Should be Used?” and “Software Selection.”)
- Teacher use of oral instructional methods.
- Teacher presentation of written instructional materials.
- Teacher involvement in constant monitoring of student keyboarding techniques.
- Teacher use of keyboarding diagnostic and reinforcement practice procedures.
- Teacher use of computer video instruction, including demonstration, diagnosis, and evaluation.
- Student involvement in peer tutoring.
- Teacher use of age-appropriate motivational techniques to maintain optimum student performance.

Grade-Level Recommendations

The Grade-Level Recommendations that follow are based on student maturation considerations, psychomotor skill teaching-learning principles, and keyboarding research studies. Even though there are valid reasons for postponing formal keyboarding instruction until grades 4, 5, or 6, many schools will need to begin instruction in grade 1 because Indiana’s Academic Standards for English/Language Arts lists the following standard for the 2nd grade: “Use a computer to draft, revise, and publish writing” (Standard 2.4.5). In grade 4, the Standards specify students should “Use a computer to draft, revise, and publish writing,

demonstrating basic keyboarding skills and familiarity with common computer terminology” (Standard 4.4.9). (Indiana Academic Standards for English/Language Arts which refer to computers or technology are listed in Appendix J.)

Elementary school teachers and business teachers need to plan and teach together to provide effective keyboarding instruction for elementary school students.

Formal keyboarding instruction may begin at any grade level a school or district chooses. However, it is recommended that students develop keyboarding proficiency no later than the 8th grade. There should be continuous monitoring of students for correct keyboarding technique from the time formal keyboarding is introduced until students have mastered touch control of the keyboard. The following recommendations should be adapted to correspond with the grade level at which formal keyboarding instruction begins.

Grades K-2. **If** formal keyboarding instruction is provided at this level, it should focus on spatial relationships, keyboard awareness, and proper approach to the use of computers.

- Not all students at this age have the physical capabilities needed for initial keyboarding instruction.
- Not all students are emotionally and mentally ready for the self-discipline involved in beginning to learn keyboarding.
- In Grade 1, the priority is teaching basic reading and writing skills. Keyboarding teachers reinforce these basic skills by encouraging students to approach the computer keyboard with both hands placed on the middle row of the keyboard (A, S, D, F, and J, K, L, semicolon).
- It is recommended that students at this level key only one-letter responses and not words, phrases, or sentences.
- At this level, a certified keyboarding instructor is the critical component of successful keyboarding instruction. Special keyboarding software is not recommended; in fact, it may contain procedures that are detrimental to gaining competency.
- A keyboarding instructional period should be approximately 20-30 minutes in length.

Grades 3-4. If formal keyboarding instruction is provided at this level, the following guidelines should be observed:

- Instruction should focus on posture and key-stroking.
- A keyboarding instructional period should be approximately 30 minutes; there should be approximately 14 instructional hours at each grade level.
- Instructional periods should be scheduled consistently and periodically until the entire alphabetic keyboard is presented. This should be followed by systematic reinforcement and skill development.
- At each grade level, provision for formal keyboarding instruction and reinforcement should be made.
- Methodology for appropriate development of correct keyboarding should be used for keyboarding applications.
- Any keyboarding software used should be selected for consistency with appropriate keyboarding methodology.
- Career education should be emphasized throughout the curriculum.
- Whenever students are using the computer, they should be monitored for use of correct touch keyboarding techniques.
- Appropriate adaptation for special needs students should be made.

Grades 5-8. According to research (see Section 6), it is highly recommended that keyboarding/computer technology and applications instruction begin in grades 5 or 6 and that skill refinement be continued throughout the middle school level. Business and Information Technology Education is one of the four practical arts programs approved for the middle school curriculum by the Indiana State Board of Education. Business teachers are well qualified to provide the curricular experiences specified by the State Board of Education in Rule 511 IAC 6.1-5-3.5 (i). This Rule states that the curriculum shall provide experiences through which students:

- Recognize technological systems and developments.
- Become aware of the possibilities and limitations of technology.
- Use technological systems and developments to prevent and solve problems related

to home, school, community, and workplace.

- Develop skills in managing individual and family responsibilities.
- Assess personal interests and aptitudes in relation to various career opportunities.

All teachers in content subject areas should provide strong encouragement for using computers for composing written projects. The following are guidelines for middle school programs:

- Courses and instruction should be coordinated and articulated with elementary school curricula in order to provide continuity for the development of keyboarding/computer technology and applications competencies.
- Instruction should be a minimum of 30 and a maximum of 50 minutes per day for **at least nine weeks (preferably 12-18 weeks) in each grade level.**
- Classes should be scheduled at least three times per week with the optimum being five times per week.
- Instruction should be provided for effective use of software applications required for each grade level.
- Career education should be emphasized throughout the curriculum.
- Opportunities for team teaching to integrate information technology into the content of other subject matter areas should be sought.
- Whenever students are using the computer, they should be monitored for use of correct touch keyboarding techniques.
- Proper keyboarding techniques should continue to be reinforced and encouraged by all teachers for continuous improvement of skills and to minimize repetitive stress injuries.
- Transfer of learning with regard to computer hardware and software should be an objective of instruction at this level.
- Appropriate adaptation for special needs students should be made.

Grades 9-12. (If touch control of the keyboard has not been mastered by the end of grade 8, it is **imperative** that it be attained in grade 9.) It is recommended that courses with the approved course titles for high school business

classes as outlined by the Indiana Department of Education be offered in accordance with the following guidelines:

- ALL students should continue to develop keyboarding proficiency throughout their secondary education. Students should be placed in keyboarding/computer technology and applications courses based on competency assessment, needs, and interest.
- Career education should be emphasized throughout the curriculum.
- All teachers in content subject areas should provide strong encouragement for using computers for composing written projects.
- Teachers should emphasize that keyboarding/computer technology and applications competencies are basic to using the computer effectively as a communication tool for personal and professional productivity throughout life.
- Transfer of learning with regard to using computer hardware and software, wherever appropriate, should be an objective of instruction at this level.
- Appropriate adaptation for special needs students should be made.

Curriculum Resource Materials

The selection of appropriate curriculum resource materials is vital to successful instruction. The resources included in Appendix C may be helpful in developing corporation/department curricula.

Textbook Selection

Keyboarding textbooks for introductory keyboarding instruction should be reviewed carefully. This section provides several considerations that should be addressed during the selection process. In dealing with early elementary school children, attention span is a major factor for consideration. Even with the most attractive software in the world, the attention span of a third grader, for example, will soon wane in spite of the student's initial attraction to the program. Instruction requires variety in the drills and variety in the teacher-directed presentations. More mature students who are learning to keyboard also need variety

but not to the degree of the younger students. A well-selected keyboarding textbook assists in providing the needed variety.

In selecting a keyboarding textbook, consider the following:

- At what grade level will the keyboarding class be taught?
- Is the reading level of the text suitable for the grade level, and is the size of the type appropriate for the student?
- Is the textbook sturdy enough to withstand extensive student use?
- Does the textbook stand by itself at the desk or must a copyholder be used to enable the book to sit at the proper level?
- Does each lesson contain a suitable learning load?
- Are the illustrations suitable for the maturity of the students?
- Is the teacher's manual helpful in dealing with the maturity level of the students, and does it contain enrichment problems and teaching tips that can be incorporated into the lessons?
- Are support services available to the teacher from the publisher?
- Does the textbook articulate with materials used in other grade levels?
- Can the textbook be adapted to the software that is being used?
- Are the textbook illustrations large enough to communicate effectively?
- Does the textbook have illustrations of correct techniques?
- Does the textbook have a glossary of computer technology terms appropriate for the grade level?
- Does the textbook contain a variety of reinforcement drills?
- Does the textbook have coordinated software that is easy to use and that contributes to the development of good techniques?

During the textbook selection process, it is important to involve the business teacher (keyboarding instructor) as well as the elementary/middle school classroom teacher, special

needs teachers, computer coordinator, school administrator, and parents.

Software Selection

A variety of software options are available to teach keyboarding, speech and handwriting recognition, and computer technology and applications. Regardless of the option chosen, a licensed business teacher must provide the instruction.

Keyboarding can be taught with word processing software in conjunction with a keyboarding textbook. The word processing software selected should be compatible with the software used throughout the school in order to maximize transfer of learning. The use of tutorial software programs may be desirable. The selection of the tutorial software should be based on age appropriateness, compatibility with a textbook, computer specifications, and sound pedagogy.

Speech and handwriting recognition software are other input methods currently used in business and industry. Speech and handwriting recognition software may be integrated within a suite of programs or purchased as specialized software. The software programs chosen should be based on the ease of use, software compatibility within the school, and instructional/tutorial materials available.

Computer applications software should be considered carefully. It should be compatible with the local business community, secondary and postsecondary educational institutions, and ease of personal use.

In selecting application software, the following considerations are important:

- Will the software accommodate all instructional activities? Does it provide: (1) views of showing proper posture and hand positioning; (2) diagnostic features; (3) pretest, practice, posttest; (4) assessment; (5) individualized speed and accuracy routines; and (6) flexibility for teacher materials?
- Is the software easy to learn/use?
- Is online help available for instructors and students?
- How much does the software cost?
- What licensing costs are involved?
- Is technical support available for the software?

District technology coordinators, other business teacher colleagues, or consultants may provide additional information. Software reviews, computer magazines, and business and industry personnel are good resources for information that can assist in the decision-making process.

Speech and Handwriting Recognition and Other Input Technologies

The preceding sections have focused on keyboarding instruction; however, it is important that appropriate instructional methods be used for teaching speech and handwriting recognition and other input technologies. Effective methods should be used for providing instruction for training the speech software, developing good enunciation and handwriting skills, learning Personal Digital Assistant (PDA) skills, determining the most efficient input method for specific circumstances, and learning related aspects of using these input methods. Undoubtedly, instructional strategies for these and emerging input methods will be included in forthcoming journal articles and textbooks. (A speech recognition checklist is included in Appendix D.)

Section 4: Student Performance Assessment

The performance assessment guidelines presented in this section are not related to specific courses, grade levels, or input methods (although keyboarding is used for illustrative purposes). This information should provide guidance for assessment regardless of where instruction in keyboarding (or other input methods) or computer technology and applications is incorporated. The interpretation of the following assessment items should be made in the context of the appropriate grade level. Continuous, appropriate assessment is necessary for the attainment of proficiencies. Assessment considerations are presented in the following sections.

Basic Operations and Concepts

Use observation checklists, quizzes, tests, rubrics, and other activities that assess students' knowledge and use of the following:

- Components of a computer (and of other tools included in the course)
- Printers and other peripherals
- Input technology tools and procedures
- Start-up and shut-down procedures
- File management—open, close, create, name, save, retrieve, and create and use file folders
- Applications—open and exit
- Menu bar and toolbars and icons
- Organization of work space
- Instructions—oral and written (including documentation)
- Help (on menu bar) or online
- Proper treatment of equipment
- Application of principles for ethical use of hardware and software

Time and resource management

Formative and summative assessments should be used. For grades K-4, participation certificates may be used; assignment of letter grades is not advised.

Keyboarding and Other Input Methods

Keyboarding, speech and handwriting recognition and other input methods should be

evaluated on the basis of correct technique. Techniques should be evaluated through observation throughout the instructional period (semester, trimester, etc.) Examples of keyboarding technique sheets are included in Appendix D. Technique sheets appropriate for other input methods should be developed and used to evaluate students.

Also, students should be assessed on their keyboarding speed and accuracy (and speed and accuracy in using other input methods). Touch control of both the keyboard and the 10-key pad is needed. As noted in Section 1, a sustained touch keyboarding speed of at least 30 words a minute (D grade level) is essential to personal and professional productivity. Prior to assessment, it is important that appropriate methodology for development of speed and accuracy be used. (In keyboarding instruction, the development of speed should precede an emphasis on accuracy development; see Appendix G.)

Formative and summative assessments should be used. For grades K-4, participation certificates may be used; assignment of letter grades is not advised.

Word Processing, Spreadsheet, Presentation, Database, and Programming Applications

Observation, projects, lab activities, simulations, quizzes, tests, rubrics, and other activities that assess students' knowledge of concepts should be used; however, a major focus of the assessment used should be on output that represents correctly formatted documents that are appropriate for the purpose to be served, e.g., reports and cross-curricula activities. (These activities should be applicable to the students' interests.)

This output should show that students know how to:

- Use the application software involved.
- Incorporate special features into their documents.

- Integrate files from multiple software applications to produce desired output.
- Make decisions and solve problems.
- Proofread, edit, and correct errors.
- Follow oral and written instructions.
- Use a given application package as a tool for personal and academic purposes.
- Work independently and as a team member.
- Achieve appropriate levels (accuracy and quantity) of productivity (under timed conditions)

Rubrics are an effective way to give students guidance with regard to expectations, scoring criteria, and standards for their performance. Examples of rubrics for some word processing and spreadsheet applications are included in Appendix D. Other assessment materials are available in the Indiana business courses Computer Applications and Digital Communication Tools.

Formative and summative assessment should be used. For grades K-4, participation certificates may be used; assignment of letter grades is not advised.

Section 5: Recommendations for Classroom Environments

(Most of the information in this section is reprinted, with permission, from the publication *Elementary/Middle School Keyboarding Strategies Guide, 2nd edition*, published by the National Business Education Association.)

Effective implementation of keyboarding/computer technology and applications requires a classroom environment that includes the equipment and the physical configuration that will contribute to the attainment of curricular objectives. In this section, considerations pertaining to physical aspects of the classroom are presented.

A student to computer ratio of 1:1 for formal keyboarding/computer technology and applications instruction is imperative. If computers are not available, other hardware devices such as portable keyboards, Alpha Smart's Dana, or similar devices may be used for keyboarding instruction.

Printers are necessary for producing hard copy from the computers. Computer hardware configuration (i.e., networked or standalone) will affect the number of printers needed. A sufficient number of printers need to be provided in order to accommodate the printing needs of all students in one classroom during one class period. Basic guidelines are:

- **Standalone Printer Configuration:** For primary and intermediate grade levels, a recommended ratio of printers to computers is 1:6; for middle and high school levels, a recommended ratio is 1:3.
- **Network Printer Configuration:** Regardless of grade level, the minimum ratio should be one laser printer to one networked classroom. Depending on the output required, it may be desirable to have one printer for every four computers.

All hardware such as computers, printers, digital cameras, and scanners, as well as software, should be selected on the basis of curricular objectives. For example, at the high school level where an objective is to produce business-quality output, a laser printer is needed.

Cabling, Network, and Electrical Requirements

Electrical cabling must be adequate to handle the maximum power requirements of equipment usage. Conveniently located power outlets are needed to provide a safe and attractive learning environment. Improperly placed cables and electrical cords can cause accidents.

Protection against damage from electrical surges should be provided at each outlet where computing equipment is plugged in or through a circuit breaker.

Considerations involved in planning for networking computers should include provision for a file server with appropriate cabling. Networking will involve additional wiring and cabling, as well as network management software and hardware. These items require additional space considerations. Availability of technical personnel needed to keep systems up and running is essential!

Care should be taken to prevent static electricity discharge from carpeting or flooring materials that can affect the performance of computer equipment. Sprays and non-static materials are available to control static electricity.

Classroom Layout

Business teachers should provide input to technology coordinators and other personnel involved in the planning and implementation of classroom layouts.

The configuration of equipment should enable teachers to observe each student's workstation. It is essential that the teacher be able to give each student instruction on keyboarding techniques at his/her workstation. Appendix E provides illustrations for different room layouts that are helpful in planning for room utilization.

Considerations for avoiding overcrowding and to allow for equipment updates, expansion, and new technologies should be incorporated into the planning for space allocations.

Desk size and height should be appropriate for the students. The work surface should be large enough to handle the equipment, textbooks, supplies, and related items involved in instruction.

Chairs should be easily adjustable to accommodate a wide range of student heights. Easily adjustable keyboard trays may be needed also. Students with physical challenges that require the use of a wheelchair or crutches will need adequate space for maneuvering and accessing equipment. Consideration should also be given to the ability of a physically challenged student to exit a room quickly and safely in the

event of an emergency. A safety plan should be in place for all physically challenged students. All planning should be done so that provisions of the ADA (Americans with Disabilities Act) are met.

The classroom should provide sufficient storage space for reference materials that students need to access. Storage space for digital media, paper, manuals, and other computer and printer supplies is needed also.

The classroom layout should be planned to minimize the potential hazards of environmental factors. Precautions with regard to radiation include having at least 18 inches between the computer screen and the student. Students should not be seated closer than two feet to the back of another computer. More radiation is emitted from the back of a computer than from the front.

The arrangement of computers should take light glare into consideration. Glare from overhead lighting and windows can cause eyestrain.

Adequate security (an alarm system or other provisions) should be implemented to safeguard the equipment and prevent unauthorized removal from the room.

Classroom layout plans should be revised periodically to accommodate hardware and software upgrades.

Section 6: Research, Trends, and Issues

The material in this section is organized on the basis of questions frequently asked about keyboarding/computer technology and applications. Although some studies cited were conducted in the 1980s, they remain benchmarks for planning keyboarding instruction. The major issue embodied in each question is identified and findings from relevant research are presented for each issue.

Why Is Instruction in Keyboarding Important?

Issue: Why not emphasize the use of computers and software as tools for personal and business use and allow students to “press the keys” in any manner that “gets the job done”?

The ability to access information efficiently and effectively is basic to using computers and software as tools. Use of input devices (including the keyboard) is one of the performances included in the information literacy standards of the International Society for Technology in Education (ISTE). Their National Educational Technology Standards for Students: Connecting Curriculum and Technology can be found at <http://cnets.iste.org/currstands/cstands-il.html>. These standards were used by the North Central Regional Education Laboratory (NCREL) to develop The Technology Literacy Proficiency Checklist (2003), which is for K-8 students. This proficiency checklist includes “effective keyboarding techniques” as a technology operation skill. (See Part II, Section 2.)

Warner, Behymer, and McCrary (October, 1992) note that students need to be touch keyboarders so they can concentrate on problem solving and composing rather than on the mechanics of finding and depressing correct keys. Empirical evidence makes clear that effective keyboarding techniques must be taught; they are not acquired by trial and error. Productivity will be seriously compromised if touch keyboarding skills are not developed. Even as new technologies for using computers become available, the use of a keyboard will remain an integral computer input method.

In Policy Statement No. 73, “This We Believe About Computer-Input Technologies,” The Policies Commission for Business and Economic Education noted that students must use the computer-input technology that is most effective based on the situation, task, and environment. The National Standards for Business Education (2001) includes touch control of the keyboard and the 10-key pad as input techniques students need to enter and manipulate text and data.

When Should Keyboarding Instruction Begin?

Issue: How early can instruction that is within the physical and developmental ability of the children involved be provided for development of correct keyboarding techniques?

Study of developmental psychology and psychomotor skill development leads to the conclusion that students are more developmentally ready for keyboarding instruction after the early elementary grades. According to West and Sabban (1982), students must pass from the cognitive stage of learning (where several partial skills are developed) to the associative stage (where partial skills are integrated) and ultimately to the autonomous stage (where skill becomes automatic). Movement out of the cognitive stage occurs when the student achieves keyboarding speeds in the low to mid 20s.

For the best possible conditions for introducing keyboarding and improving proficiency, instruction should be delayed until middle school. Preferably instruction should begin one grade before the students become involved in keyboarding applications (Warner, K., Behymer, J., & McCrary, S., October 1992). Research indicates that 3rd and 4th graders do not develop as much keyboarding speed as 5th and 6th graders in the same period of time (Erickson 1984 and 1986 and Sormunen 1988). If instruction is provided as early as grades K-2, the emphasis should be on learning spatial relationships and alphabetic key locations as the basis for future keyboarding activities. As noted in Section 3, Indiana’s Academic Standards for

English/Language Arts specify that 2nd grade students should “Use a computer to draft, revise, and publish writing” (Standard 2.4.5). Instruction in keyboarding (provided by elementary school teachers collaborating with business teachers) should begin a semester prior to implementing the requirement that students key paragraph material.

Who Should Teach Keyboarding and What Kinds of Activities Should Be Used?

Issue: Why should licensed business teachers teach keyboarding? What are appropriate strategies for delivering keyboarding instruction to elementary grade students?

To understand the model for learning involved in acquiring keyboarding skills, the teacher must understand the psychomotor components of the model based on close association between stimulus and response (McLean 1984). There is an inherent need for the teacher to understand the methodology pertinent to teaching keyboarding. Teaching keyboarding involves much more than giving instruction in key locations and the correct finger to use.

Unfortunately, many software products are not developed using sound principles of psychomotor skill development applicable to keyboarding. Software should be evaluated carefully based on these principles.

In addition, many software programs in their attempt to make learning of the keyboard “fun” use games. Empirical evidence identifies the folly of intense games as a method of developing appropriate keyboarding skills. Essentially, students focus on winning the game and use techniques that are counter productive to achieving the learning goals (Sormunen 1986).

West (1983) indicated that the method by which keyboarding skills are acquired is the same, regardless of the age of the student. He suggested that the only variation for young learners is the amount of time spent on one activity. Obviously, activities should be shorter and more varied to accommodate youthful attention spans.

A significant part of developing keyboarding skills is allowing visual access to the keyboard and monitor during the initial learning. Teachers who insist on “eyes on copy” do not understand the psychology of skill development. Devices designed to block a student’s visual access to the keyboard or monitor are not beneficial and in fact are a hindrance to that performance. (McLean & Pulak, February 1995). Keyboarding must be taught through methodology that will enable students to develop the ability to strike keys through a kinesthetic response.

Jackson (1991) indicated that classes that meet fewer than three times a week for keyboarding instruction are a waste of time because students forget between sessions what they have learned. For this reason, at least while the students are being introduced to keyboarding, every effort should be made to provide frequent, regularly scheduled sessions.

What is the Impact of Keyboarding Skill on Equipment Requirements?

Issue: How can student productivity eliminate the purchase of additional equipment?

Technological developments enable schools to have many choices with regard to selection of hardware. Students who can key by touch can utilize equipment more efficiently because they spend less time searching for keys to input information. Therefore, these students can complete assignments more quickly and, thereby, free the equipment for use by more students.

What Effect Will Keyboarding Skill Have on Personal Use of Computers?

Issue: How can students be prepared for lifelong learning, as well as opportunities for distance learning, that involves keyboarding/computer technology and applications?

Career and personal activities continue to involve computer applications. Feldman (1991) indicated that with the advent of computers and high technology, companies need entry-level employees who understand how to use a computer to access, understand, and use information.

Telecommunication capabilities have generated opportunities for distance learning in a variety of areas.

Nieman (1995) indicates that when students reach the traditional high-school level keyboarding class, they have developed crippling techniques that are practically impossible to correct. Students are expected to function productively in a society where practically every kind of employment and level of education involve computer access. Since the keyboard is the major source for computer input, students must be introduced early to proper keyboarding techniques.

Nieman (1995) noted that research at the elementary school level continues to recognize the value of keyboarding for facilitating students' progress in reading, language composition, spelling, vocabulary, creative writing, proofreading and revision, neatness and accuracy, punctuation, listening, and other elements of language arts.

How Do We Integrate and Coordinate Keyboarding/Computing Within Schools?

Issue: How can computer use be integrated and articulated throughout the curriculum?

The most effective way to learn a skill is to integrate it with subject matter content. The focus on authentic learning and assessment challenges teachers to find ways to use the computer with subject matter content. A reasonable place to start is with the language arts area.

Warner, K., Behymer, J., & McCrary, S. (October 1992) found that children with keyboarding skills compose faster, and of course, their documents are easier to read and evaluate. In addition, students are proud of their work. Documents have a neat appearance. Motivation is increased and language-arts skills improve.

Keyboarding/computer technology and applications can be incorporated into most subjects. The important issue is to provide teachers with training on how to implement and integrate keyboarding/computer technology and applica-

tion skills into the curriculum. Continuous reinforcement of the touch keying method and good keyboarding techniques is important wherever the integration of keyboarding occurs.

How Can Transfer of Learning (Within School and to the Workplace) Be Maximized?

Issue: How can students be assisted in transferring technology knowledge to other classes or the work world?

Keyboarding and related computer skills are essential for workforce literacy, according to the Secretary's Commission for Achieving Necessary Skills (SCANS) report. Bridging the gap between the school experience and the work world is a concern of business personnel and educators alike. The immersion approach for teaching critical thinking (which assigns a high priority to the role of ideas and/or subject matter in the thinking process) recognizes that students must be shown how to use ideas that explain objects and events in the environment (Prawat 1992). Therefore, it is important that instruction for keyboarding/computer technology and applications be given in a context that is authentic in terms of the requirements for other classes and personal and employment applications.

Do Students Need to Learn Other Computer Input Technologies?

Issue: Are new and emerging input methods being used in computer technology and applications?

In Policy Statement No. 73, "This We Believe About Computer Input Technologies," the Policies Commission for Business and Economic Education (2003) stated: "Trends in technology require business educators to provide opportunities for all students to learn the new technologies and techniques that are emerging in today's workplace. Current technologies include speech recognition and handwriting recognition tools such as Tablet PCs, Personal Digital Assistants (PDAs), and other handheld devices. While touch-keyboarding techniques remain a viable foundation for entering and manipulating text and data, other skills include

composing, editing, enunciating, electronic handwriting, and scanning. Educators must provide instruction on a variety of input technologies for successful academic, professional, and personal applications.”

In addition, the Policies Commission stated that the use of a variety of computer-input

technologies will increase productivity. Therefore, students must learn how to select the computer-input technology (or combination of technologies) that is most effective based on the task, situation, and environment involved.

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PART II: MIDDLE SCHOOL CURRICULUM—BUSINESS AND INFORMATION TECHNOLOGY CONTENT INTEGRATION AND INSTRUCTIONAL STRATEGIES

Indiana State Board of Education Rule: Middle school students are to receive instruction every year in a minimum of two of the following program areas: Agriculture, Business, Family and Consumer Sciences, and Technology Education (Industrial Technology). Based on this rule, several broad areas of Business content have been developed for integration into the Business program offered through the [Indiana Business and Information Technology Middle School Curriculum](#). This content focuses on the needs of middle school students (6th through 8th grades).

Introduction

Serving the needs of early adolescents is the primary purpose of the middle school curriculum. Middle school students are concerned about determining their own unique identity, exploring a variety of interests, developing skills for working in peer groups and with adults, understanding and dealing with the world they are experiencing, connecting classroom learning with practical applications, and forming expectations for the future. Tools that students need for addressing these concerns include reading comprehension, writing and math skills, critical thinking skills, and computer literacy. In addition, middle school students need content that relates their developmental transition to choices they must make in the social and economic world. Business content provides a context in which students can learn more about themselves and how they relate to others and to their future in a world that is driven by business activity. In addition, the proficiencies achieved can be used effectively throughout their secondary and higher education curricula and in the workplace.

Economic survival in the 21st Century demands that students know and understand both basic and technical concepts of business as well as possess the ability to apply these concepts in a variety of settings. An education in business is critical to the fulfillment of virtually all career aspirations. There is a clear relationship between business concepts and the student expectations set forth in Indiana's Academic Standards for grades 6 through 8. The Standards require the application of computer and information processing skills in creating, proofreading, and editing written material. Also, locating appropriate reference resources and displaying and interpreting data are part of the reading and writing focus of the middle school. Business content in career exploration, personal finance/economics, and business ownership/management helps students develop problem-solving and decision-making competencies in realistic settings.

Middle school provides students with the stability they need while they are preparing for transition into high school and beyond. Today's global society challenges the talents and imagination of Indiana's diverse student population. Today, as never before, students face an environment that demands creative, innovative solutions to problems and that presents exciting opportunities for the future.

The [Indiana Business and Information Technology Middle School Curriculum](#) provides concepts and applications that facilitate the development of competencies required for success in all academic areas and in real-world contexts. This curriculum relates closely to understandings and competencies students will need as their world expands and as they develop career interests. The four broad areas included in this curriculum are technology, career exploration, personal finance/economics, and business ownership/management. The performance expectations and instructional strategies for each area provide many opportunities to engage students in learning and applying technology as a tool. This approach is in keeping with the NETS (National Educational Technology Standards) approach, which places heavy

emphasis on integrating technology into the curriculum. The No Child Left Behind (NCLB) legislation mandates that students reach technological proficiency by the completion of the 8th grade.

Each of the four curriculum areas is described below. The specific topics included, which can vary in length, provide opportunities for students to explore curriculum areas and develop knowledge and skills needed in conjunction with other middle school curriculum areas. Student achievement of the technology standards will allow teachers in other content areas to focus on the application of these competencies in meeting the standards specific to their academic areas. These four curriculum areas provide a basis on which students can make decisions regarding their future educational and employment endeavors, as well as prepare them to conduct personal business activities and to use technology in a variety of contexts.

It is imperative to understand that this entire middle school curriculum (Technology, Career Exploration, Personal Finance/Economics, and Business Ownership/Management):

- *Must be taught by a licensed business teacher.*
- *Cannot be attained in just one exploration or one rotation class in a semester, trimester, or block program of studies. It is a sequential program (technology first, then other content areas) and developmental program of study. Students should progress on the basis of the number of weeks available for business content instruction in their middle school curriculum.*

The Career Planning and Success Skills and the Digital Communications Tools courses may be taught in the [Indiana Business and Information Technology Middle School Curriculum](#). If the standards for these courses are met, students may receive high school credit.

Section 1: Curriculum Areas

Technology

In the Technology area, students will learn touch keyboarding and several other input methods. Students will explore the following components of the technology area: basic operations and concepts of technology systems; social, ethical, and human issues; productivity, communications, research, and problem-solving/decision-making tools; and technology as an assessment tool. The overall objective in this curriculum area is to enable students to meet the No Child Left Behind legislation that requires technological literacy for all students by the completion of grade 8. The National Educational Technology Standards (NETS) developed by the International Society for Technology Education (ISTE) were used by the North Central Regional Technology in Education Consortium at Learning Point Associates to develop proficiencies (Technology Literacy Proficiency Checklist for K-8 Students, 2003) for student technological literacy. An adaptation of these proficiencies was used for the performance expectations in the Technology curriculum area.

Career Exploration

In the Career Exploration area, students will explore their interests, identify the types of things they do well, and determine what they want and expect for their future. They will become acquainted with the array of careers available and explore educational and personal requirements for various job clusters. This awareness is important because frequent career changes are common in the 21st Century. New career fields, job clusters, and expansion of student awareness of career possibilities are emphasized. The National Business Education Association (NBEA) standards were used to develop performance expectations in the career exploration curriculum area.

Personal Finance/Economics

Personal Finance/Economics topics will help students develop knowledge and skills for personal financial management. The problem-solving approach used is fundamental to students developing life skills in the areas of income and money management, spending and credit, and saving and investing. The NBEA standards (www.nbea.org) and the JumpStart standards (www.jumpstart.org) were used to develop performance expectations in the personal finance/economics curriculum area. In addition appropriate middle school skills were selected from the Networks Personal Financial Literacy Skills list developed by the Networks Financial Institute (www.networksfinancialinstitute.org). Other helpful resources include programs conducted by Junior Achievement and Business & Professional Women that give students authentic personal finance experiences.

Business Ownership/Management

In the Business Ownership/Management area, students will learn about business ownership and management, including entrepreneurship. The performance expectations for this area were selected from the NBEA standards. Students will have opportunities to explore the role of business firms in our economic system and the personal and educational requirements needed to succeed in the areas of business ownership/management and entrepreneurship. This curriculum area does not have comprehensive coverage in the middle school curriculum. At the middle school level, the purpose of the Business Ownership/Management area is to help students explore subject matter they may wish to study further in high school or college. However, many of the performance expectations for this area can be achieved through the instructional strategies for the Technology, Career Exploration, and Personal Finance/Economics areas.

Section 2: Performance Proficiencies

Technology

The proficiencies listed in the following table are categorized by grades K-4 and grades 5-8, the grade designations used by the North Central Regional Educational Laboratory (NCREL). They are proficiencies for the Technology content area; they are not course proficiencies. Appropriate adjustments in the grade categories can be made for 6-8 middle school programs.

These grade-level proficiencies are an adaptation of the Student Technology Literacy Proficiency Checklist (2003) developed by the NCREL. This checklist was aligned with the International Society for Technology in Education’s National Educational Technology Standards for Students: Connecting Curriculum and Technology. The NCREL developed the checklist in response to the No Child Left Behind (NCLB) Act, which requires that students reach technological proficiency by the end of grade 8. Instructional strategies, assessment strategies, and supplementary resources for the Technology area are presented in Part II, Section 4.

The checklist on the following pages is to be used to document students’ proficiency in keyboarding/computer technology and applications. Proficiencies designated “K-4” or “5-8” should be achieved by the end of grade 4 or grade 8, respectively. Proficiencies designated “K-4, 5-8” have continuous development from achievement of basic proficiency in grades K-4 through achievement of higher-level proficiency in grades 5-8. The following rating system is suggested to help indicate each student’s degree of technological proficiency within the appropriate grade category. See Appendix D for sample technique checklists related to determining proficiency in “Keyboarding Techniques.”

- √+ (Exceeded Proficiency)
- √ (Achieved Proficiency)
- √- (Achieved Proficiency When Given Guidance)
- N/A (Proficiency Not Achieved/Observed)

To determine specific proficiencies, a benchmark assessment tool based on the school corporation’s curricula should be developed (see page 29).

BMS-T 1	Technology Operation Skills		
BMS-T 1.1	Content Standard: Students use hardware and software components and understand the difference between input and output devices.	Grades K-4	Grades 5-8
BMS-T 1.1.1	Use hardware and peripherals (input and output devices) to support content area learning including the use of touch screens and simple speech-recognition systems. [K-4, 5-8]		
BMS-T 1.1.2	Demonstrate effective keyboarding techniques—as listed below; see checklists in Appendix D. [5-8] Use a checkmark in the appropriate column (Yes or No) for each technique.		
	Keyboarding Techniques	Yes	No
BMS-T 1.1.2.1	Demonstrate correct home keys hand position and keystroking.		

Keyboarding Techniques (Continued)		Yes	No
BMS-T 1.1.2.2	Demonstrate appropriate technique for special purpose keys, including the space bar, tab key, shift keys, backspace key, delete key, and enter key.		
BMS-T 1.1.2.3	Demonstrate correct reaches to, and keying of, alphabetic keys.		
BMS-T 1.1.2.4	Demonstrate correct arm/hand positions and correct body posture.		
BMS-T 1.1.2.5	Demonstrate increasing speed proficiency so that a minimum of 30 words a minute (D grade level) with no more than 2 errors per minute is achieved by grade 8.		
BMS-T 1.1.2.6	Demonstrate improvement in keyboarding proficiency (speed and accuracy) through appropriate pedagogy.		

Technology Operation Skills (Continued)		Grades K-4	Grades 5-8
BMS-T 1.1.3	Connect to the Internet using school network/modem and browser.		
BMS-T 1.1.4	Use still imaging with digital cameras.		
BMS-T 1.1.5	Use video imaging with digital cameras.		
BMS-T 1.1.6	Use an array of media and appropriate cabling to support academic work.		
BMS-T 1.1.7	Use PDAs or other hand-held devices.		
BMS-T 1.1.8	Use scanners.		
BMS-T 1.1.9	Use mouse, keyboard, touch screen, stylus pen, and/or speech (input devices) to input information.		
BMS-T 1.1.10	Use monitor, printer, and/or speakers (output devices) to review information.		
BMS-T 1.1.11	Use the icon/GUI (graphical user interface) of the operating system to launch and operate software.		
BMS-T 1.1.12	Use the GUI of the operating system to save and back up files to a hard drive, other drives, or a server.		
BMS-T 1.1.13	Use the GUI of the operating system with application software (e.g., databases, spreadsheets, word processing, or educational software) to import images, text, and video/sound. See specific Productivity Tools, BMS-T 4.)		
BMS-T 1.1.14	Use the GUI of the operating system to organize electronic files.		
BMS-T 1.1.15	Evaluate and select appropriate innovative technologies (hand-held devices) to match the needs of tasks.		

BMS-T 2	Technology Conceptualization Skills		
BMS-T 2.1	Content Standard: Students demonstrate a comprehensive understanding of the interactivity and operation of technology systems.	Grades K-4	Grades 5-8
BMS-T 2.1.1	Explain the functional relationship between basic hardware and software systems and their components. [K-4, 5-8]		
BMS-T 2.1.2	Explain the use of and the necessity for input and output devices. [K-4, 5-8]		
BMS-T 2.1.3	Explain the organizational concept behind using files and folders for storing information and organize files into folders. [K-4, 5-8]		
BMS-T 2.1.4	Explain the purpose and necessity of saving documents as files and save documents as files. [K-4, 5-8]		
BMS-T 2.1.5	Use technology terminology appropriately to describe the basic relationships among input, processing, and output functions. [K-4, 5-8]		
BMS-T 2.1.6	Explain the function of the central processing unit, motherboard, etc. [5-8]		
BMS-T 2.1.7	Explain the purposes of the GUI (beyond launching software applications). [K-4, 5-8]		
BMS-T 2.1.8	Explain the use of and the difference between temporary memory (RAM), permanent memory (ROM), and storage (e.g., digital storage on hard, flash, external, floppy, and zip disks/drives; magnetic tape; and CD/DVD optical storage). [K-4, 5-8]		
BMS-T 2.1.9	Identify and discuss the variety of technologies used in society. [K-4, 5-8]		
BMS-T 3	Social and Ethical Issues of Technology		
BMS-T 3.1	Content Standard: Students understand the social, legal, and ethical issues related to technology use. Students practice responsible use of hardware, software, and data. Students interact positively with technology independently and in collaboration with others.	Grades K-4	Grades 5-8
BMS-T 3.1.1	Practice respectful and responsible use of technology through abiding by the school technology and Internet use policy. [K-4, 5-8]		
BMS-T 3.1.2	Use technology independently and collaboratively. [K-4, 5-8]		
BMS-T 3.1.3	Demonstrate an understanding of plagiarism and fair use; respect copyright laws of information producers such as authors and artists. [K-4, 5-8]		
BMS-T 3.1.4	Demonstrate an understanding of the interaction and interdependence between humans and technology. [K-4, 5-8]		
BMS-T 3.1.5	Explain how changes in technology affect the workplace and society. [K-4, 5-8]		

BMS-T 4	Technology as a Productivity Tool		
BMS-T 4.1	Content Standard: Students use technology as a tool to enhance learning and creativity. Students are able to use technology to increase productivity in developing models, publications, and other creative works.	Grades K-4	Grades 5-8
BMS-T 4.1.1	Demonstrate word-processing skills by using correct keyboarding techniques. [5-8]		
BMS-T 4.1.2	Demonstrate word-processing skills by creating a variety of documents. [K-4, 5-8]		
BMS-T 4.1.3	Demonstrate word-processing skills by saving and printing documents. [K-4]		
BMS-T 4.1.4	Demonstrate word-processing skills by accessing and editing previously created documents, including the effective use of editing commands (e.g., delete and cut/copy/paste). [K-4, 5-8]		
BMS-T 4.1.5	Demonstrate word-processing skills by using spell check, thesaurus, and grammar features at a grade-appropriate level. [K-4, 5-8]		
BMS-T 4.1.6	Demonstrate word-processing skills by using appropriate software to create outlines for papers. [5-8]		
BMS-T 4.1.7	Demonstrate word-processing skills by using software to cite references. [5-8]		
BMS-T 4.1.8	Demonstrate the ability to format a variety of documents that meet employability standards. [5-8]		
BMS-T 4.1.9	Demonstrate spreadsheet skills by creating worksheets and charts. [K-4, 5-8]		
BMS-T 4.1.10	Demonstrate spreadsheet skills by saving and printing files. [K-4]		
BMS-T 4.1.11	Demonstrate spreadsheet skills by accessing and retrieving data. [K-4, 5-8]		
BMS-T 4.1.12	Demonstrate spreadsheet skills by organizing and analyzing data. [K-4, 5-8]		
BMS-T 4.1.13	Demonstrate database skills by creating simple database files. [5-8]		
BMS-T 4.1.14	Demonstrate database skills by saving and printing files. [K-4]		
BMS-T 4.1.15	Demonstrate database skills by accessing and retrieving data. [5-8]		
BMS-T 4.1.16	Demonstrate database skills by organizing and analyzing data. [5-8]		
BMS-T 4.1.17	Demonstrate multimedia skills (including desktop publishing) through the use of paint, draw, text, or sound to create simple visual aids. [K-4, 5-8]		

Technology as a Productivity Tool (Continued)	Grades K-4	Grades 5-8
BMS-T 4.1.18 Demonstrate presentation skills through the use of presentation software to create well-organized, informative slide presentations. [K-4, 5-8]		
BMS-T 4.1.19 Demonstrate presentation software skills by saving and printing files. [K-4]		
BMS-T 4.1.20 Demonstrate presentation software skills through the use of basic design guidelines to enhance visual presentations. [5-8]		
BMS-T 4.1.21 Log on to preselected Internet sites and view information. [K-4]		
BMS-T 4.1.22 Demonstrate the ability to use Internet search engines to access information by identifying and conducting searches using Internet/intranet search engines and directories. [K-4, 5-8]		
BMS-T 4.1.23 Demonstrate the ability to use Web browser functions to access information by bookmarking/creating favorites. [5-8]		
BMS-T 4.1.24 Demonstrate telecommunications skills through the use of e-mail to contact peers, teachers, and other audiences. [K-4, 5-8]		
BMS-T 4.1.25 Demonstrate the ability to develop a simple Web page designed (software driven) to convey information about a specific academic content area topic. [5-8]		
BMS-T 4.1.26 Use software or online help features of application programs to support product use. [5-8]		
BMS-T 4.1.27 Demonstrate the ability to select appropriate software for completing a variety of projects. [5-8]		
BMS-T 4.1.28 Demonstrate the ability to follow instructions (instructor, text, manuals, and/or screen). [K-4, 5-8]		
BMS-T 4.1.29 Demonstrate the ability to work independently and as a team member (includes efficient use of time, organization of work, etc.). [K-4, 5-8]		
BMS-T 4.1.30 Demonstrate appropriate conduct in the classroom. [K-4, 5-8]		
BMS-T 4.1.31 Demonstrate appropriate handling and use of supplies. [K-4, 5-8]		

BMS-T 5	Technology as a Communication Tool		
BMS-T 5.1	Content Standard: Students use telecommunications to collaborate, publish, and interact with peers, teachers, and other audiences. Students use a variety of technologies to convey information such as e-mail, e-learning, video conferencing, and telephony.	Grades K-4	Grades 5-8
BMS-T 5.1.1	Demonstrate telecommunication skills by collaborating and communicating effectively (using e-mail, instant messaging, blogging, chat, net meetings, etc.) with peers, teachers, and other audiences. [K-4, 5-8]		
BMS-T 5.1.2	Use technology to plan, develop, and present key concepts to different types of audiences. [K-4, 5-8]		
BMS-T 5.1.3	Select appropriate presentation formats (e.g., paper, Web page, multimedia presentation, speech, or hypermedia). [K-4, 5-8]		
BMS-T 6	Technology as an Information Research Tool		
BMS-T 6.1	Content Standard: Students use technology to access, review, evaluate, and select information from multiple resources for reporting purposes. Students write appropriate research reports.	Grades K-4	Grades 5-8
BMS-T 6.1.1	Use technology to conduct research for specific problems or questions that need to be resolved. [K-4, 5-8]		
BMS-T 6.1.2	Use technology to conduct research by using common electronic reference resources to access information such as almanacs, encyclopedias, indexes, online specialized databases, and online catalogs. [K-4, 5-8]		
BMS-T 6.1.3	Evaluate and select appropriate sources of information (print, nonprint, video, electronic, and human) for a specific research problem or question. [K-4, 5-8]		
BMS-T 6.1.4	Evaluate and select several resources from a variety of information sources by reviewing each author's credentials, perspective, or bias; validate the accuracy of information. [K-4, 5-8]		
BMS-T 6.1.5	Evaluate and select several resources from a variety of information sources based on the audience. [K-4, 5-8]		
BMS-T 6.1.6	Use technology to conduct searches by using basic search techniques (e.g., subject, author, title, and keyword) to locate required information on Internet/intranet search engines. [5-8]		
BMS-T 6.1.7	Use technology to conduct searches by using Boolean operators independently or with guidance to locate information. [5-8]		
BMS-T 6.1.8	Use technology to conduct searches by using sophisticated reference tools, such as biographical dictionaries and thesauri in print and electronic formats. [5-8]		
BMS-T 6.1.9	Evaluate and select several resources from a variety of information sources by using new information. (As information is integrated with prior knowledge, <i>new</i> information is attained.) [5-8]		

BMS-T 7	Technology as a Problem-Solving and Data-Driven Decision-Making Tool	Grades K-4	Grades 5-8
BMS-T 7.1	Content Standard: Students use technology to develop strategies for solving problems.		
BMS-T 7.1.1	Use technology to solve problems and make informed decisions. [K-4, 5-8]		
BMS-T 7.1.2	Use appropriate tools (e.g., spreadsheets) to analyze a problem from different perspectives. [5-8]		
BMS-T 7.1.3	Use appropriate simulation software tools (e.g., Lemonade Stand and Stock Market) to analyze a problem from different perspectives. [K-4, 5-8]		
BMS-T 7.1.4	Use appropriate simulation software tools to review the outcomes of a problem scenario over time. [5-8]		
BMS-T 8	Technology as an Assessment Tool	Grades K-4	Grades 5-8
BMS-T 8.1	Content Standard: Students use technology to take developmentally appropriate tests utilizing audio and/or visual feedback when necessary.		
BMS-T 8.1.1	Take computer-adaptive timed multiple choice or true/false tests. [K-4, 5-8]		
BMS-T 8.1.2	Take computer-based narrative tests. [K-4, 5-8]		
BMS-T 8.1.3	Take computer-based tests for topic remediation and support and use feedback appropriately for self-assessment. [K-4, 5-8]		

As noted previously, a benchmark assessment tool should be developed to determine which students have acquired proficiency based on the school corporation’s curricula. The following resources may be helpful in creating this assessment tool.

<http://www.it.dpsnc.net/elementary/bean/sample.htm>

<http://www.catawba.k12.nc.us/pages/sites/creview.htm>

<http://www.pen.k12.va.us/VDOE/Assessment/Release2002/>

http://courses.lib.odu.edu/eci/jklingberg/NMS_Page/practice_tests.html

Overview of Career Exploration, Personal Finance/Economics, and Business Ownership/Management Proficiencies

Proficiencies for the areas of Career Exploration, Personal Finance/Economics, and Business Ownership/Management are listed in the following tables. These proficiencies were adapted from those listed for Level 1 (grades K-6) and Level 2 (grades 6-9) in the *National Standards for Business Education—What America’s Students Should Know and Be Able To Do in Business, 2001*. **Many of these concepts should be integrated into the materials used for developing technology proficiencies.**

Some of these proficiencies may have been introduced in Grades K-4; however, mastery of appropriate proficiency levels requires continuous review, reinforcement, and expansion through grade 8. There is no sequential order to the proficiencies listed. However, some items require a prerequisite knowledge of other items. These standards identify what students need to know and be able to do at the end of their middle school program.

As shown on the next page, proficiencies are categorized for grades K-4 and grades 5-8 (to be consistent with the grade categories used for Technology). The specific grade level at which proficiencies are introduced depends on the individual school corporation and the amount of time that is available for business instruction. Thus, if a given proficiency marked R/M (see explanation below) for grades 5-8 was not introduced and developed in grades K-4, it should be treated as I/D/R/M in grades 5-8. It is **strongly recommended** that those proficiencies related closely to personal financial management be given a high priority.

The designations used to indicate the proficiency levels that should be developed in grades K-4 and 5-8 are explained below.

Grade-Level Proficiency Designations

Key:

- I** = **Introduce** indicates the beginning of specific instruction.
- D** = **Develop** indicates greater depth is being attained.
- R** = **Review/Reinforce/Refine** indicates the proficiencies are applied in meaningful business contexts
- M** = **Master** indicates at least minimum proficiency levels for the 8th grade have been achieved.

Career Exploration

The careers area focuses on an individual's total lifestyle—education, occupation, social responsibility, and leisure activities. Students begin career exploration at an early age; they gain a developmental understanding of their own strengths and weaknesses, the ever-evolving requirement of the workplace, and the relationship of lifelong learning to career success. Students will explore multiple career paths and their interrelatedness. They will become acquainted with the array of careers available and explore educational and personal requirements for various job clusters. This awareness is important because frequent career changes are common in the 21st Century. New career fields, job clusters, and expansion of student awareness of career possibilities are emphasized. An individual who wants to enjoy a quality standard of living must be prepared to make wise career transitions and to continuously learn new skills.

The National Business Education Association (NBEA) standards were used to develop performance expectations in the Career Exploration curriculum area. The proficiencies (performance expectations) for each of the five subdivisions of this area are presented below. Instructional strategies, assessment strategies, and supplementary resources for the Career Exploration area are presented in Part II, Section 5.

<p>BMS-CE 1 Self-Awareness</p> <p>BMS-CE 1.1 Content Standard: Students assess personal skills, abilities and aptitudes, and personal strengths and weaknesses as they relate to career exploration.</p>	<p>I=Introduce D=Develop R=Review Reinforce Refine M=Master</p>	
	Grades K-4	Grades 5-8
<p>BMS-CE 1.1.1 Identify personal likes and dislikes, strengths and weaknesses, and individual talents.</p>	I/D	R/M
<p>BMS-CE 1.1.2 Assess and analyze strengths and weaknesses relative to a variety of career areas involving data, people, and/or things.</p>	I	D/R/M
<p>BMS-CE 1.1.3 Formulate and implement a plan to address identified weaknesses.</p>	I	D/R/M
<p>BMS-CE 2 Career Research</p> <p>BMS-CE 2.1 Content Standard: Students use print, electronic, and oral career resources to develop a foundation of personal career data.</p>	<p>I=Introduce D=Develop R=Review Reinforce Refine M=Master</p>	
	Grades K-4	Grades 5-8
<p>BMS-CE 2.1.1 Identify and describe careers of family members and/or friends.</p>	I/D	R/M
<p>BMS-CE 2.1.2 Describe and give examples of career clusters; develop an awareness of occupational opportunities; recognize the advantages of early career exploration and planning.</p>	I/D	R/M
<p>BMS-CE 2.1.3 List and describe the contributions of various types of occupations in the community (e.g., banker, realtor, police officer, teacher, business manager, and firefighter) and describe career opportunities in these professional fields.</p>	I/D	R/M
<p>BMS-CE 2.1.4 Use a variety of research tools (e.g., computer-assisted programs, newspapers, books, professional and trade associations, informational interviews, job shadowing, career fairs, field trips, speakers, case studies, community service, and the Internet) in the career-exploration process.</p>	I	D/R/M
<p>BMS-CE 2.1.5 Use a questionnaire to guide a career exploration interview to determine educational requirements, starting salaries, and career-ladder opportunities.</p>	I	D/R/M
<p>BMS-CE 2.1.6 Explain the concept of transferable skills within and between career clusters</p>		I/D/R/M
<p>BMS-CE 2.1.7 Evaluate several occupational interests, based on various criteria (e.g., educational requirements, starting salaries, and career ladders).</p>		I/D/R/M
<p>BMS-CE 2.1.8 Use available resources to research career opportunities and trends; prepare a research report</p>		I/D/R/M
<p>BMS-CE 2.1.9 Describe the impact of the global economy on jobs and careers.</p>	I	D/R/M
<p>BMS-CE 2.1.10 Recognize products associated with other countries and the occupations related to them.</p>	I	D/R/M

Career Research (Continued)	Grades K-4	Grades 5-8
BMS-CE 2.1.11 Relate career interests to opportunities in the global economy.	I	D/R/M
BMS-CE 2.1.12 Describe the culture of a particular country and discuss the available career choices in that culture.	I	D/R/M
BMS-CE 3 Workplace Expectations and School-To-Career Transition BMS-CE 3.1 Content Standard: Students relate the importance of workplace expectations to career development.	I=Introduce D=Develop R=Review Reinforce Refine M=Master	Grades K-4
BMS-CE 3.1.1 Discuss the personal qualities and ethical and/or responsible behaviors related to school, home, and employability (e.g., promptness, ability to get along with others, a positive attitude, confidentiality, tolerance, flexibility, dependability, honesty, integrity, willingness to ask questions, respect for diversity, patience, cooperation, respect for personal property, completion of homework assignments, and communication skills); and describe how these qualities and behaviors influence the feelings and actions of others.	I/D	R/M
BMS-CE 3.1.2 Demonstrate proper etiquette for meeting and greeting people and appropriate social skills for school and the workplace.	I/D	R/M
BMS-CE 3.1.3 Explain the importance of personal appearance, grooming, and other school and workplace expectations.	I/D	R/M
BMS-CE 3.1.4 Discuss the importance of a job well done to personal satisfaction and to the home and business communities.	I/D	R/M
BMS-CE 3.1.5 Discuss the importance of being able to work productively with people who are different from oneself.	I/D	R/M
BMS-CE 3.1.6 Describe how physical, intellectual, and cultural diversity can strengthen school and workplace effectiveness.	I	D/R/M
BMS-CE 3.1.7 Identify the changing roles of men and women in the workplace and the family; discuss the advantages and disadvantages of entering nontraditional occupations.	I/D	R/M
BMS-CE 3.1.8 Identify stereotypes, biases, and discriminatory behaviors that may impact opportunities for women and men in certain occupations.	I	D/R/M
BMS-CE 3.1.9 Describe different cultural behaviors and expectations and discuss the effects of personal beliefs, attitudes, and cultural practices on decision making.	I/D	R/M
BMS-CE 3.1.10 Demonstrate the steps involved in handling conflict.	I/D	R/M
BMS-CE 3.1.11 Demonstrate the steps involved in dealing with stress.	I/D	R/M
BMS-CE 3.1.12 Discuss how environmental barriers may affect the physically challenged.	I/D	R/M

Workplace Expectations and School-To-Career Transition (Continued)	Grades K-4	Grades 5-8
BMS-CE 3.1.13 Demonstrate good listening skills and describe their importance to school and workplace expectations.	I/D	R/M
BMS-CE 3.1.14 Express thoughts and ideas succinctly and correctly using various forms of communication (e.g., oral, written, and nonverbal).	I	D/R/M
BMS-CE 3.1.15 Identify ways to use feedback to improve workplace skills.	I	D/R/M
BMS-CE 3.1.16 Explain the importance of planning; identify and implement the steps for planning school projects.	I	D/R/M
BMS-CE 4 Career Strategy	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
BMS-CE 4.1 Content Standard: Students apply knowledge gained from individual assessment to a comprehensive set of goals and an individual career plan.	Grades K-4	Grades 5-8
BMS-CE 4.1.1 Describe how the skills and knowledge acquired in school relate to various occupations.	I	D/R/M
BMS-CE 4.1.2 Describe the relationship of assessed interests, aptitudes, and abilities to academic and occupational skills.		I/D/R/M
BMS-CE 4.1.3 Apply career goals, skills, and interests to the selection of high school courses.		I/D/R/M
BMS-CE 4.1.4 Explain how career decisions impact education, leisure activities, lifestyle, and other major life decisions.		I/D/R/M
BMS-CE 4.1.5 Discuss methods of “bouncing back” after a setback or failure.		I/D/R/M
BMS-CE 4.1.6 Identify personal goals that may be achieved through a combination of career, community, social, and family roles.	I	D/R/M
BMS-CE 4.1.7 Explain the importance of career planning; apply steps in the decision-making process to establish short- and long-term career goals.	I/D	R/M
BMS-CE 4.1.8 Evaluate consequences of decisions pertaining to short- and long-term career goals.	I	D/R/M
BMS-CE 4.1.9 Identify obstacles to achieving career goals.	I	D/R/M
BMS-CE 4.1.10 Describe how career development is a continuous process involving a series of choices.	I	D/R/M
BMS-CE 4.1.11 Determine how the expectations of others affect career goals.	I	D/R/M
BMS-CE 4.1.12 Design a career plan that includes the investigation of career clusters, self-assessment, research, career alternatives, and high school course options.		I/D/R/M

BMS-CE 5 Lifelong Learning BMS-CE 5.1 Content Standard: Students relate the importance of lifelong learning to career success and recognize that each of the following proficiencies must be continually updated.	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
	Grades K-4	Grades 5-8
BMS-CE 5.1.1 Develop an awareness of changing and emerging jobs and careers.	I	D/R/M
BMS-CE 5.1.2 Relate various levels of education to careers.	I/D	R/M
BMS-CE 5.1.3 Relate the importance of education to meeting identified goals.	I	D/R/M
BMS-CE 5.1.4 Analyze school/work evaluations to assess strengths, weaknesses, and areas for improvement.	I/D	R/M
BMS-CE 5.1.5 Describe the importance of effective study habits, test-taking skills, and learning skills.	I/D	R/M
BMS-CE 5.1.6 Describe how good health, nutrition, and physical fitness habits contribute to career success.	I/D	R/M

Personal Finance/Economics

In the Personal Finance/Economics area, students will develop knowledge and skills for personal financial management. The problem-solving approach used is fundamental to students developing life skills in the areas of income and money management, spending and credit, and saving and investing. The NBEA standards (www.nbea.org) and the JumpStart standards (www.jumpstart.org) were used to develop performance expectations in the personal finance/economics curriculum area, in addition appropriate middle school skills were selected from the Networks Personal Financial Literacy Skills list developed by the Networks Financial Institute (www.networksfinancialinstitute.org). The proficiencies for each subdivision of this area are presented below. Instructional strategies, assessment strategies, and supplementary resources are presented in Part II, Section 6.

Grade-Level Proficiency Designations

- Key:**
- I = Introduce** indicates the beginning of specific instruction.
 - D = Develop** indicates greater depth is being attained.
 - R = Review/Reinforce/Refine** indicates the proficiencies are applied in meaningful business contexts
 - M = Master** indicates at least minimum proficiency levels for the 8th grade have been achieved.

BMS-PFE 1 Personal Financial/Economic Decision Making BMS-PFE 1.1 Content Standard: Students use a rational decision-making process that recognizes opportunity costs and trade-offs involved in making choices.	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
	Grades K-4	Grades 5-8
BMS-PFE 1.1.1 Define and give examples of economic wants and needs.	I/D	R/M
BMS-PFE 1.1.2 Apply opportunity costs and trade-offs to personal decision making.	I/D	R/M
BMS-PFE 1.1.3 Recognize and assume responsibility for the consequences of economic choices.	I/D	R/M
BMS-PFE 1.1.4 Apply the steps in a rational decision-making process to a situation involving an individual making an economic decision.	I/D	R/M
BMS-PFE 1.1.5 Explain how types and availability of jobs are determined primarily by consumer demand in the market-oriented economy of the United States.	I	D/R/M
BMS-PFE 1.1.6 Identify various ways people earn a living.	I/D	R/M
BMS-PFE 1.1.7 Discuss how personal choices, experiences, technology, education/training, and other factors correlate with earning a living.	I/D	R/M
BMS-PFE 1.1.8 Analyze the characteristics and requirements of occupations of interest, including entrepreneurial opportunities.	I/D	R/M
BMS-PFE 1.1.9 Differentiate between earned and unearned income; identify sources of unearned income.	I/D	R/M
BMS-PFE 1.1.10 Distinguish between income and wealth.	I/D	R/M

Personal Financial/Economic Decision Making (Continued)	Grades K-4	Grades 5-8
BMS-PFE 1.1.11 Differentiate between gross and net income.		I/D/R/M
BMS-PFE 1.1.12 Explain how insurance protects income.	I/D	R/M
BMS-PFE 1.1.13 Explain the concept of taxes and how taxes affect purchasing power; identify the types of taxes individuals commonly incur.	I/D	R/M
BMS-PFE 1.1.14 Explain the concept of inflation, how inflation affects purchasing power, and the effect of other economic conditions on financial planning.		I/D/R/M
BMS-PFE 2 Money Management	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
BMS-PFE 2.1 Content Standard: Students analyze various forms of income and the factors related to income management.	Grades K-4	Grades 5-8
BMS-PFE 2.1.1 Identify ways in which individuals and families obtain financial resources; explain the role of assets in borrowing.	I	D/R/M
BMS-PFE 2.1.2 Illustrate ways people are financially responsible; explain how good money management helps avoid bankruptcy.	I	D/R/M
BMS-PFE 2.1.3 Analyze the present and future consequences of personal financial choices.	I	D/R/M
BMS-PFE 2.1.4 Define fixed, variable, and periodic expenses.		I/D/R/M
BMS-PFE 2.1.5 Explain the concept of discretionary income.		I/D/R/M
BMS-PFE 2.1.6 Explain the role of insurance in money management.		I/D/R/M
BMS-PFE 2.1.7 Construct and use a personal budget (spending/savings plan), and evaluate it according to short-, intermediate-, and long-term goals.	I	D/R/M
BMS-PFE-3 Spending and Credit	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
BMS-PFE-3.1 Content Standard: Students apply a decision-making process to maximize satisfaction in purchasing and paying for products and services.	Grades K-4	Grades 5-8
BMS-PFE 3.1.1 Apply a rational decision-making process to personal buying decisions.	I/D	R/M
BMS-PFE 3.1.2 Identify goods and services and distinguish between buying goods and buying services.	I	D/R/M
BMS-PFE 3.1.3 Identify alternative sources for purchases (e.g., Internet, retail stores, and catalogs).	I/D	R/M
BMS-PFE 3.1.4 Apply comparison shopping practices; analyze advertising claims; explain the concept of impulse buying.	I/D	R/M

Spending and Credit (Continued)	Grades K-4	Grades 5-8
BMS-PFE 3.1.5 Discuss various ways competition helps the consumer.	I	D/R/M
BMS-PFE 3.1.6 Describe reasons why there are variances in price for a given item bought from different providers.	I	D/R/M
BMS-PFE 3.1.7 Compare advantages/disadvantages of buying-decision alternatives, including mortgages, loans, leasing, and rent-to-own.		I/D/R/M
BMS-PFE 3.1.8 Explain how interest rates affect buying decisions.		I/D/R/M
BMS-PFE 3.1.9 Use reliable consumer resources to collect information for making buying decisions about durable and nondurable goods.		I/D/R/M
BMS-PFE 3.1.10 Identify laws and agencies that are available to protect the rights of the consumer; explain consumer responsibilities.		I/D/R/M
BMS-PFE 3.1.11 Contrast different methods of payment including cash, checks, debit cards, and credit cards; explain which of these is “borrowing.”	I	D/R/M
BMS-PFE 3.1.12 Discuss the steps involved in opening and using a checking account.		I/D/R/M
BMS-PFE 3.1.13 Compare and contrast the different types of checking accounts offered by various financial institutions.		I/D/R/M
BMS-PFE 3.1.14 Compare electronic means of transfer (e.g., debit cards, ATM, and automatic deposits/payments) offered by various financial institutions and describe why there are various means of transferring funds.		I/D/R/M
BMS-PFE 3.1.15 Identify the rights and responsibilities associated with using a checking account.		I/D/R/M
BMS-PFE 3.1.16 Discuss the advantages and disadvantages of e-banking.		I/D/R/M
BMS-PFE 3.1.17 Analyze privacy and security issues associated with financial transactions.		I/D/R/M
BMS-PFE 3.1.18 Explain what credit is; explain what creditors look for in issuing credit (character, capacity, capital, conditions, and collateral); explain the use of credit reports.		I/D/R/M
BMS-PFE 3.1.19 Identify methods of establishing and maintaining a good credit rating; explain ways to avoid or correct problems; explain the consequences of living beyond one’s means; explain the consequences of late debt payments.		I/D/R/M
BMS-PFE 3.1.20 Identify the factors that affect the cost of credit (principal, time, and interest rate) and explain how these factors are interrelated; calculate finance charges.		I/D/R/M
BMS-PFE 3.1.21 Explain why the interest rate varies with the amount of assumed risk.		I/D/R/M

Spending and Credit (Continued)	Grades K-4	Grades 5-8
BMS-PFE 3.1.22 Describe the risks and responsibilities associated with using credit and how to gain protection against the consequences of risk (credit risks and other risks in life).		I/D/R/M
BMS-PFE 3.1.23 Identify the opportunity cost of credit.		I/D/R/M
BMS-PFE 3.1.24 Identify the various types of credit including the different types of credit cards.		I/D/R/M
BMS-PFE 3.1.25 Explain the effects of debt collection through a collection agency or court judgment on one’s credit rating.		I/D/R/M
BMS-PFE 3.1.26 Explain identity theft and its potential impact on credit.		I/D/R/M
BMS-PFE 4 Saving and Investing BMS-PFE 4.1 Content Standard: Students evaluate saving and investing options to make short-, intermediate-, and long-term goals.	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
	Grades K-4	Grades 5-8
BMS-PFE 4.1.1 Define savings; compare saving to the concept of Social Security.	I/D	R/M
BMS-PFE 4.1.2 Define why and how people save; explain the concept of planning for emergencies.	I/D	R/M
BMS-PFE 4.1.3 Identify the opportunity cost of saving.	I	D/R/M
BMS-PFE 4.1.4 Explain the difference between earning interest and paying interest.	I	D/R/M
BMS-PFE 4.1.5 Distinguish between simple and compound interest.		I/D/R/M
BMS-PFE 4.1.6 Analyze the power of compounding and the importance of starting early in implementing a plan of saving and investing.		I/D/R/M
BMS-PFE 4.1.7 Explain various options (advantages and disadvantages) for saving, including “piggy banks,” credit unions, and other financial institutions.	I	D/R/M
BMS-PFE 4.1.8 Compare/contrast saving and investing (identify the risk/return trade-offs).		I/D/R/M
BMS-PFE 4.1.9 Discuss the advantages and disadvantages of various options for investing to meet short-, intermediate-, and long-term goals; explain liquidity, risk, and return for various alternatives.		I/D/R/M
BMS-PFE 4.1.10 Evaluate sources of investment information.		I/D/R/M
BMS-PFE 4.1.11 Explain how different factors affect the rate of return on investment.		I/D/R/M
BMS-PFE 4.1.12 Describe how to buy and sell investments; explain how agencies that regulate financial markets protect investors.		I/D/R/M

Business Ownership/Management

In the Business Ownership/Management area, students will learn about business ownership/management, including entrepreneurship. Students will have opportunities to explore the role of business firms in our economic system and the personal and educational requirements needed to succeed in the areas of business ownership/management and entrepreneurship. This curriculum area does not have comprehensive coverage. The purpose is to help students explore an area they may wish to study further in high school or college. The proficiencies (performance expectations) for this area were selected from the NBEA standards. The proficiencies for each of the four subdivisions in this area are presented in the following table. Instructional strategies, assessment strategies, and supplementary resources are presented in Part II, Section 7.

Grade-Level Proficiency Designations

- Key:**
- I = Introduce** indicates the beginning of specific instruction.
 - D = Develop** indicates greater depth is being attained.
 - R = Review/Reinforce/Refine** indicates the proficiencies are applied in meaningful business contexts
 - M = Master** indicates at least minimum proficiency levels for the 8th grade have been achieved.

BMS-BOM 1	Fundamental Business Ownership/Management Knowledge and Skills	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
		Grades K-4	Grades 5-8
BMS-BOM 1.1	Content Standard: Students analyze concepts that serve as the foundation for the study of management and other business activities.		
BMS-BOM 1.1.1	Identify skills and qualities needed for specific jobs and careers.	I	D/R/M
BMS-BOM 1.1.2	Describe the differences between an employer and an employee.	I/D	R/M
BMS-BOM 1.1.3	Identify the characteristics of a good employee.	I/D	R/M
BMS-BOM 1.1.4	Describe the characteristics of a good employer/manager.	I/D	R/M
BMS-BOM 1.1.5	Explain the importance of organizing.	I	D/R/M
BMS-BOM 1.1.6	Describe the importance of planning.	I	D/R/M
BMS-BOM 1.1.7	Discuss the importance of time management.	I	D/R/M
BMS-BOM 1.1.8	Define and explain the importance of leadership.	I	D/R/M
BMS-BOM 1.1.9	Identify leaders and leadership qualities.	I	I/D
BMS-BOM 1.1.10	Describe the advantages of working as a team in a specific activity.	I/D	R/M
BMS-BOM 1.1.11	Identify the advantages and disadvantages of the team concept to an organization.	I	D/R/M

Fundamental Business Ownership/Management Knowledge and Skills (Continued)		Grades K-4	Grades 5-8
BMS-BOM 1.1.12	Describe and give examples of the characteristics of successful teams.	I/D	R/M
BMS-BOM 1.1.13	Explain the importance of motivation, leadership, and trust to members of a team.	I/D	R/M
BMS-BOM 1.1.14	Explain the importance of clear communication to members of a team.	I/D	R/M
BMS-BOM 1.1.15	Describe a personal code of ethical behavior.	I/D	R/M
BMS-BOM 1.1.16	Demonstrate ethical behavior in small-group situations.	I/D	R/M
BMS-BOM 2	Forms of Business Ownership	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
BMS-BOM 2.1	Content Standard: Students assess the characteristics of various types of business ownership.		
BMS-BOM 2.1.1	Identify and provide examples of the major forms of business ownership (sole proprietorship, partnership, and corporation).	I	D/R/M
BMS-BOM 2.1.2	Identify the differences between a sole proprietorship and a partnership.	I	D/R/M
BMS-BOM 2.1.3	Define a corporation and explain how it differs from a sole proprietorship and a partnership.		I/D/R/M
BMS-BOM 2.1.4	Describe and give examples of special types of business ownership (e.g., franchises, cooperatives, and S corporations).		I/D/R/M
BMS-BOM 3	Entrepreneurship	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
BMS-BOM 3.1	Content Standard: Students assess the characteristics of entrepreneurial opportunities and analyze the roles and responsibilities of entrepreneurs.		
BMS-BOM 3.1.1	Identify the characteristics of successful entrepreneurs.	I	D/R/M
BMS-BOM 3.1.2	Describe opportunities that led to the development of successful entrepreneurial endeavors.		I/D/R/M
BMS-BOM 3.1.3	Identify one's own personal traits that are typical characteristics of an entrepreneur.	I	D/R/M
BMS-BOM 3.1.4	Compare the costs and benefits of choosing to become an entrepreneur.		I/D/R/M
BMS-BOM 3.1.5	Differentiate between a manager and an entrepreneur.		I/D/R/M

Entrepreneurship (Continued)		Grades K-4	Grades 5-8
BMS-BOM 3.1.6	Define ethics and identify common ethical issues that entrepreneurs encounter.		I/D/R/M
BMS-BOM 4	Basic Functions of Management and Marketing	I=Introduce D=Develop R=Review Reinforce Refine M=Master	
BMS-BOM 4.1	Content Standard: Students analyze management and marketing functions and their implementation and integration in the business environment.		
		Grades K-4	Grades 5-8
BMS-BOM 4.1.1	Determine the wants of consumers for specific products at various price levels.	I/D	R/M
BMS-BOM 4.1.2	Define and give examples of target markets for specific products.		I/D/R/M
BMS-BOM 4.1.3	Identify and discuss the elements of marketing (e.g., product, place, price, and promotion).		I/D/R/M
BMS-BOM 4.1.4	Design/select products to meet customer wants.	I	D/R/M
BMS-BOM 4.1.5	Identify the resources needed to produce a specific product.	I	D/R/M
BMS-BOM 4.1.6	Create promotional advertising/activities for a given product/service.	I	D/R/M
BMS-BOM 4.1.7	Discuss the impact of competition on keeping/increasing market share.	I	D/R/M
BMS-BOM 4.1.8	Identify ways businesses compete (e.g., quality, service, status, and price).		I/D/R/M
BMS-BOM 4.1.9	Describe techniques for obtaining customer feedback.	I	D/R/M
BMS-BOM 4.1.10	Discuss the importance of responding to customer concerns.		I/D/R/M
BMS-BOM 4.1.11	Identify ways to respond to customer concerns.	I	D/R/M
BMS-BOM 4.1.12	Explain the importance of ethical standards in conducting business.	I/D	R/M
BMS-BOM 4.1.13	Discuss examples of honest and dishonest business practices.	I/D	R/M
BMS-BOM 4.1.14	Identify the reasons for keeping business records.	I	D/R/M
BMS-BOM 4.1.15	Describe problems that might be caused by failure to keep business records.	I	D/R/M
BMS-BOM 4.1.16	Describe why businesses must plan.	I	D/R/M
BMS-BOM 4.1.17	Develop a plan for a specific event.	I	D/R/M

Basic Functions of Management and Marketing (Continued)		Grades K-4	Grades 5-8
BMS-BOM 4.1.18	Describe and apply the steps in the decision-making process.	I/D	R/M
BMS-BOM 4.1.19	Discuss the importance of a business giving back to the community.	I	D/R/M

Section 3: Indiana Academic Standards Integrated into the Middle School Curriculum

Grade 6—Language Arts

Standard 2: READING: Comprehension (Focus on Informational Materials)

Students read and understand grade-level-appropriate material. They describe and connect the essential ideas, arguments, and perspectives of the text by using their knowledge of text structure, organization, and purpose. The selections in the [Indiana Reading List](#) illustrate the quality and complexity of the materials to be read by students. At Grade 6, in addition to regular classroom reading, students read a variety of grade-level appropriate narrative (story) and expository (informational and technical) texts, including classic and contemporary literature, poetry, magazines, newspapers, reference materials, and online information.

- 6.2.1 Identify the structural features of popular media (newspapers, magazines, online information) and use the features to obtain information.
- 6.2.2 Analyze text that uses a compare-and-contrast organizational pattern.
- 6.2.3 Connect and clarify main ideas by identifying their relationships to multiple sources and related topics.
- 6.2.4 Clarify an understanding of texts by creating outlines, notes, diagrams, summaries, or reports.
- 6.2.7 Make reasonable statements and conclusions about a text, supporting them with accurate examples.

Standard 4: WRITING: Process

Students discuss and keep a list of writing ideas and use graphic organizers to plan writing. They write clear, coherent, and focused essays. Students progress through the stages of the writing process and proofread, edit, and revise writing.

- 6.4.1 Discuss ideas for writing, keep a list or notebook of ideas, and use graphic organizers to plan writing.
- 6.4.2 Choose the form of writing that best suits the intended purpose.
- 6.4.4 Use a variety of effective organizational patterns, including comparison and contrast, organization by categories, and arrangement by order of importance or climactic order.
- 6.4.5 Use note-taking skills.
- 6.4.6 Use organizational features of electronic text (on computers), such as bulletin boards, databases, keyword searches, and e-mail addresses, to locate information.
- 6.4.7 Use a computer to compose documents with appropriate formatting by using word-processing skills and principles of design, including margins, tabs, spacing, columns, and page orientation.
- 6.4.8 Review, evaluate, and revise writing for meaning and clarity.
- 6.4.9 Edit and proofread one's own writing, as well as that of others, using an editing checklist or set of rules, with specific examples of corrections of frequent errors.
- 6.4.10 Revise writing to improve the organization and consistency of ideas within and between paragraphs.

Standard 5: WRITING: Applications (Different Types of Writing and Their Characteristics)

At Grade 6, students write narrative (story), expository (informational), persuasive, and descriptive texts (of at least 500 to 700 words). Student writing demonstrates a command of Standard English and the research, organizational, and drafting strategies outlined in Standard 4 - Writing Process. Writing demonstrates an awareness of the audience (intended reader) and purpose for writing.

In addition to producing the different writing forms introduced in earlier grades, such as letters, Grade 6 students use the writing strategies outlined in Standard 4 - Writing Process to:

- 6.5.2 Write descriptions, explanations, comparison and contrast papers, and problem and solution essays that:
 - State the thesis (position on the topic) or purpose.
 - Explain the situation.
 - Organize the composition clearly.
 - Offer evidence to support arguments and conclusions.
- 6.5.3 Write research reports that:
 - Pose relevant questions that can be answered in the report.
 - Support the main idea or ideas with facts, details, examples, and explanations from multiple authoritative sources; such as speakers, newspapers and magazines, reference books, and online information searches.
 - Include a bibliography.
- 6.5.6 Use varied word choices to make writing interesting.
- 6.5.7 Write for different purposes and to a specific audience or person, adjusting tone and style as necessary.

Standard 6: WRITING: English Language Conventions

Students write using Standard English conventions appropriate to this grade level.

- 6.6.1 Use simple, compound, and complex sentences; use effective coordination and subordination of ideas, including both main ideas and supporting ideas in single sentences, to express complete thoughts.
 - Simple sentence: sentences with one subject and verb such as The pine tree is native to many parts of America.
 - Compound sentence: sentences with two equal clauses such as The giraffe has a long neck and long legs, but it is a very graceful animal.
 - Complex sentence: sentences that include one main clause and at least one subordinate clause such as I just sat at my desk, not knowing what to do next, although others around me were writing furiously.
- 6.6.2 Identify and properly use indefinite pronouns (*all, another, both, each, either, few, many, none, one, other, several, some*), present perfect (*have been, has been*), past perfect (*had been*), and future perfect verb tenses (*shall have been*); ensure that verbs agree with compound subjects.
 - Indefinite pronouns: Each should do his or her work.
 - Indefinite pronouns: Many were absent today.
 - Correct verb agreement: Todd and Amanda were chosen to star in the play.
 - Incorrect verb agreement: Todd and Amanda was chosen to star in the play.
- 6.6.3 Use colons after the salutation (greeting) in business letters (*Dear Sir:*), semicolons to connect main clauses (*The girl went to school; her brother stayed home.*), and commas before the conjunction in compound sentences (*We worked all day, but we didn't complete the project.*).
- 6.6.4 Use correct capitalization.
- 6.6.5 Spell correctly frequently misspelled words (*their/they're/there, loose/lose/loss, choose/chose, through/threw*).

Standard 7: LISTENING AND SPEAKING: Skills, Strategies, and Applications

Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication. Students deliver well-organized formal presentations using traditional speech strategies, including narration, exposition, persuasion, and description. Students use the same Standard English conventions for oral speech that they use in their writing.

- 6.7.3 Restate and carry out multiple-step oral instructions and directions.
- 6.7.5 Emphasize important points to assist the listener in following the main ideas and concepts.
- 6.7.6 Support opinions with researched, documented evidence and with visual or media displays that use appropriate technology
- 6.7.7 Use effective timing, volume, tone, and alignment of hand and body gestures to sustain audience interest and attention.
- 6.7.11 Deliver informative presentations that:
 - Pose relevant questions sufficiently limited in scope to be completely and thoroughly answered.
 - Develop the topic with facts, details, examples, and explanations from multiple authoritative sources, including speakers, periodicals, and online information.

Grade 7—Language Arts

Standard 2: READING: Comprehension (Focus on Informational Materials)

Students read and understand grade-level-appropriate material. They describe and connect the essential ideas, arguments, and perspectives of the text by using their knowledge of text structure, organization, and purpose. The selections in the [Indiana Reading List](#) illustrate the quality and complexity of the materials to be read by students. At Grade 7, in addition to regular classroom reading, students read a variety of grade-level-appropriate narrative (story) and expository (informational and technical) texts, including classic and contemporary literature, poetry, magazines, newspapers, reference materials, and online information.

7.2.2 Locate information by using a variety of consumer and public documents.

Standard 4: WRITING: Process

Students discuss, list, and graphically organize writing ideas. They write clear, coherent, and focused essays. Students progress through the stages of the writing process and proofread, edit, and revise writing.

- 7.4.2 Create an organizational structure that balances all aspects of the composition and uses effective transitions between sentences to unify important ideas.
- 7.4.4 Use strategies of note-taking, outlining, and summarizing to impose structure on composition drafts.
- 7.4.5 Identify topics; ask and evaluate questions; and develop ideas leading to inquiry, investigation, and research.
- 7.4.6 Give credit for both quoted and paraphrased information in a bibliography by using a consistent format for citations.
- 7.4.7 Use a computer to create documents by using word-processing skills and publishing programs; develop simple databases and spreadsheets to manage information and prepare reports.
- 7.4.8 Review, evaluate, and revise writing for meaning and clarity.
- 7.4.9 Edit and proofread one's own writing, as well as that of others, using an editing checklist or set of rules, with specific examples of corrections of frequent errors.
- 7.4.10 Revise writing to improve organization and word choice after checking the logic of the ideas and the precision of the vocabulary.

Standard 5: WRITING: Applications (Different Types of Writing and Their Characteristics)

At Grade 7, students continue to write narrative (story), expository (informational), persuasive, and descriptive texts (of at least 500 to 700 words). Students are introduced to biographical and autobiographical narratives and to writing summaries of grade-level-appropriate reading materials. The writing demonstrates a command of Standard English and the research, organizational, and drafting strategies outlined in Standard 4 - Writing Process. Writing demonstrates an awareness of the audience (intended reader) and purpose for writing.

In addition to producing the different writing forms introduced in earlier grades, such as letters, Grade 7 students use the writing strategies outlined in Standard 4 - Writing Process to:

- 7.5.3 Write research reports that:
 - Pose relevant and focused questions about the topic.
 - Communicate clear and accurate perspectives on the subject.
 - Include evidence and supporting details compiled through the formal research process, including use of a card catalog, *Reader's Guide to Periodical Literature*, a computer catalog, magazines, newspapers, dictionaries, and other reference books.
 - Document sources with reference notes and a bibliography.

- 7.5.5 Write summaries of reading materials that:
- Include the main ideas and most significant details.
 - Use the student's own words, except for quotations.
 - Reflect underlying meaning, not just the superficial details.
- 7.5.6 Use varied word choices to make writing interesting and more precise.
- 7.5.7 Write for different purposes and to a specific audience or person, adjusting style and tone as necessary.

Standard 6: WRITING: English Language Conventions

Students write using Standard English conventions appropriate to the grade level.

- 7.6.1 Properly place modifiers (words or phrases that describe, limit, or qualify another word) and use the active voice (sentences in which the subject is doing the action) when wishing to convey a livelier effect.
- Clear: She left the book, which she bought at the bookstore, on the table.
 - Unclear: She left the book on the table, which she bought at the bookstore.
 - Active voice: The man called the dog.
 - Passive voice: The dog was called by the man.
- 7.6.3 Make clear references between pronouns and antecedents by placing the pronoun where it shows to what word it refers.
- Clear: Chris said to Jacob, "You will become a great musician."
 - Confusing: Chris told Jacob that he would become a great musician.
- 7.6.5 Demonstrate appropriate English usage (such as pronoun reference).
- 7.6.6 Identify and correctly use hyphens (-), dashes (—), brackets ([]), and semicolons (;).
- 7.6.7 Demonstrate the correct use of quotation marks and the use of commas with subordinate clauses.
- 7.6.8 Use correct capitalization.

Standard 7: LISTENING AND SPEAKING: Skills, Strategies, and Applications

Deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. Students evaluate the content of oral communication. Students deliver well-organized formal presentations using traditional speech strategies, including narration, exposition, persuasion, and description. Students use the same Standard English conventions for oral speech that they use in their writing.

- 7.7.3 Organize information to achieve particular purposes and to appeal to the background and interests of the audience.
- 7.7.4 Arrange supporting details, reasons, descriptions, and examples effectively.
- 7.7.5 Use speaking techniques — including adjustments of tone, volume, and timing of speech; enunciation (clear speech); and eye contact — for effective presentations.
- 7.7.9 Deliver oral summaries of articles and books that:
 - Include the main ideas and the most significant details.
 - State ideas in own words, except for when quoted directly from sources.
 - Demonstrate a complete understanding of sources, not just superficial details.
- 7.7.10 Deliver research presentations that:
 - Pose relevant and concise questions about the topic.
 - Provide accurate information on the topic.
 - Include evidence generated through the formal research process, including the use of a card catalog, *Reader's Guide to Periodical Literature*, computer databases, magazines, newspapers, and dictionaries.
 - Cite reference sources appropriately.

Grade 8—Language Arts

Standard 2: READING: Comprehension (Focus on Informational Materials)

Students read and understand grade-level-appropriate material. They describe and connect the essential ideas, arguments, and perspectives of the text by using their knowledge of text structure, organization, and purpose. The selections in the [Indiana Reading List](#) illustrate the quality and complexity of the materials to be read by students. At Grade 8, in addition to regular classroom reading, students read a variety of narrative (story) and expository (informational and technical) texts, including classic and contemporary literature, poetry, magazines, newspapers, reference materials, and online information.

8.2.5 Use information from a variety of consumer and public documents to explain a situation or decision and to solve a problem.

Standard 4: WRITING: Process

Students discuss, list, and graphically organize writing ideas. They write clear, coherent, and focused essays. Students progress through the stages of the writing process and proofread, edit, and revise writing.

- 8.4.2 Create compositions that have a clear message, a coherent thesis (a statement of position on the topic), and end with a clear and well-supported conclusion.
- 8.4.3 Support theses or conclusions with analogies (comparisons), paraphrases, quotations, opinions from experts, and similar devices.
- 8.4.4 Plan and conduct multiple-step information searches using computer networks.
- 8.4.5 Achieve an effective balance between researched information and original ideas.
- 8.4.6 Use a computer to create documents by using word-processing skills and publishing programs; develop simple databases and spreadsheets to manage information and prepare reports.
- 8.4.7 Review, evaluate, and revise writing for meaning and clarity.
- 8.4.8 Edit and proofread one's own writing, as well as that of others, using an editing checklist or set of rules, with specific examples of corrections of frequent errors.
- 8.4.9 Revise writing for word choice; appropriate organization; consistent point of view; and transitions among paragraphs, passages, and ideas.

Standard 5: WRITING: Applications (Different Types of Writing and Their Characteristics)

At Grade 8, students continue to write narrative (story), expository (informational), persuasive, and descriptive essays (of at least 750 to 1,000 words). Students are introduced to writing technical documents. Student writing demonstrates a command of Standard English and the research, organizational, and drafting strategies outlined in Standard 4 - Writing Process. Writing demonstrates an awareness of the audience (intended reader) and purpose for writing.

In addition to producing the different writing forms introduced in earlier grades, such as letters, Grade 8 students use the writing strategies outlined in Standard 4 - Writing Process to:

- 8.5.6 Write using precise word choices to make writing interesting and exact.
- 8.5.7 Write for different purposes and to a specific audience or person, adjusting tone and style as necessary.

Standard 6: WRITING: English Language Conventions

Students write using Standard English conventions appropriate to this grade level.

- 8.6.1 Use correct and varied sentence types (simple, compound, complex, and compound-complex) and sentence openings to present a lively and effective personal style.
- 8.6.2 Identify and use parallelism (use consistent elements of grammar when compiling a list) in all writing to present items in a series and items juxtaposed for emphasis.
 - Correct: Students having difficulty and needing help should stay after class.
 - Incorrect: Students having difficulty and who need help should stay after class.
- 8.6.3 Use subordination, coordination, noun phrases that function as adjectives (*These gestures - acts of friendship - were noticed but not appreciated.*), and other devices to indicate clearly the relationship between ideas.
- 8.6.4 Edit written manuscripts to ensure that correct grammar is used.
- 8.6.5 Use correct punctuation.
- 8.6.6 Use correct capitalization.
- 8.6.7 Use correct spelling conventions.

Standard 7: LISTENING AND SPEAKING: Skills, Strategies, and Applications

Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication. Students deliver well-organized formal presentations using traditional speech strategies, including narration, exposition, persuasion, and description. Students use the same Standard English conventions for oral speech that they use in their writing.

- 8.7.5 Use appropriate grammar, word choice, enunciation (clear speech), and pace (timing) during formal presentations.
- 8.7.12 Deliver research presentations that:
 - Define a thesis (a position on the topic).
 - Research important ideas, concepts, and direct quotations from significant information sources and paraphrase and summarize important perspectives on the topic.
 - Use a variety of research sources and distinguish the nature and value of each.
 - Present information on charts, maps, and graphs.

Grade 6—Mathematics

Standard 2: Computation

Students solve problems involving addition, subtraction, multiplication, and division of integers. They solve problems involving fractions, decimals, ratios, proportions, and percentages.

- 6.2.1 Add and subtract positive and negative integers.
- 6.2.2 Multiply and divide positive and negative integers.
- 6.2.3 Multiply and divide decimals.
- 6.2.8 Calculate given percentages of quantities and solve problems involving discounts at sales, interest earned, and tips.

Standard 3: Algebra and Functions

Students write verbal expressions and sentences as algebraic expressions and equations. They evaluate algebraic expressions, solve simple linear equations, and graph and interpret their results. They investigate geometric relationships and describe them algebraically.

- 6.3.2 Write and use formulas with up to three variables to solve problems.
- 6.3.3 Interpret and evaluate mathematical expressions that use grouping symbols such as parentheses.
- 6.3.4 Use parentheses to indicate which operation to perform first when writing expressions containing more than two terms and different operations.

Standard 7: Problem Solving

Students make decisions about how to approach problems and communicate their ideas.

- 6.7.1 Analyze problems by identifying relationships, telling relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.
- 6.7.3 Decide when and how to break a problem into simpler parts.
- 6.7.4 Apply strategies and results from simpler problems to solve more complex problems.
- 6.7.9 Make precise calculations and check the validity of the results in the context of the problem.
- 6.7.10 Decide whether a solution is reasonable in the context of the original situation.
- 6.7.11 Note the method of finding the solution and show a conceptual understanding of the method by solving similar problems.

Grade 7—Mathematics

Standard 2: Computation

Students solve problems involving [integers](#), fractions, decimals, ratios, and percentages.

- 7.2.2 Calculate the percentage increase and decrease of a quantity.
- 7.2.3 Solve problems that involve discounts, markups, and commissions.

Standard 3: Algebra and Functions

Students express quantitative relationships using algebraic terminology, expressions, equations, inequalities, and graphs.

- 7.3.1 Use variables and appropriate operations to write an expression, a formula, an equation, or an inequality that represents a verbal description.
- 7.3.5 Solve an equation or formula with two variables for a particular variable.

Standard 6: Data Analysis and Probability

Students collect, organize, and represent data sets and identify relationships among variables within a data set. They determine probabilities and use them to make predictions about events.

- 7.6.1 Analyze, interpret, and display data in appropriate bar, line, and circle graphs and [stem-and-leaf plots](#) and justify the choice of display.
- 7.6.2 Make predictions from statistical data.
- 7.6.4 Analyze data displays, including ways that they can be misleading. Analyze ways in which the wording of questions can influence survey results.

Standard 7: Problem Solving

Students make decisions about how to approach problems and communicate their ideas.

- 7.7.1 Analyze problems by identifying relationships, telling relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.
- 7.7.3 Decide when and how to divide a problem into simpler parts.
- 7.7.4 Apply strategies and results from simpler problems to solve more complex problems.
- 7.7.10 Make precise calculations and check the validity of the results in the context of the problem.
- 7.7.11 Decide whether a solution is reasonable in the context of the original situation.
- 7.7.12 Note the method of finding the solution and show a conceptual understanding of the method by solving similar problems.

Grade 8—Mathematics

Standard 2: Computation

Students compute with rational numbers expressed in a variety of forms. They solve problems involving ratios, proportions, and percentages.

8.2.2 Solve problems by computing simple and compound interest.

8.2.3 Use estimation techniques to decide whether answers to computations on a calculator are reasonable.

Standard 7: Problem Solving

Students make decisions about how to approach problems and communicate their ideas.

8.7.1 Analyze problems by identifying relationships, telling relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.

8.7.3 Decide when and how to divide a problem into simpler parts.

8.7.4 Apply strategies and results from simpler problems to solve more complex problems.

8.7.10 Make precise calculations and check the validity of the results in the context of the problem.

8.7.11 Decide whether a solution is reasonable in the context of the original situation.

8.7.12 Note the method of finding the solution and show a conceptual understanding of the method by solving similar problems.

Grade 6—Science

Standard 2: Scientific Thinking

Students use computers and other tools to collect information, calculate, and analyze data. They prepare tables and graphs, using these to summarize data and identify relationships.

- 6.2.2 Use technology, such as calculators or computer spreadsheets, in analysis of data.
- 6.2.3 Select tools, such as cameras and tape recorders, for capturing information.
- 6.2.5 Organize information in simple tables and graphs and identify relationships they reveal. Use tables and graphs as examples of evidence for explanations when writing essays or writing about lab work, fieldwork, etc.
- 6.2.6 Read simple tables and graphs produced by others and describe in words what they show.
- 6.2.7 Locate information in reference books, back issues of newspapers and magazines, CD-ROMs, and computer databases.
- 6.2.8 Analyze and interpret a given set of findings, demonstrating that there may be more than one good way to do so.

Standard 5: The Mathematical World

Students apply mathematics in scientific contexts. They use mathematical ideas, such as relations between operations, symbols, shapes in three dimensions, statistical relationships, and the use of logical reasoning in the representation and synthesis of data.

- 6.5.4 Demonstrate how graphs may help to show patterns, such as trends, varying rates of change, gaps, or clusters, which can be used to make predictions.

Standard 7: Common Themes

Students use mental and physical models to conceptualize processes. They recognize that many systems have feedback mechanisms that limit changes.

- 6.7.1 Describe that a system, such as the human body, is composed of subsystems.

Grade 7—Science

Standard 1: The Nature of Science and Technology

Students further their scientific understanding of the natural world through investigations, experiences, and readings. They design solutions to practical problems by using a variety of scientific methodologies.

- 7.1.10 Identify ways that technology has strongly influenced the course of history and continues to do so.
- 7.1.11 Illustrate how numbers can be represented using sequences of only two symbols, such as 1 and 0 or on and off, and how that affects the storage of information in our society.

Standard 2: Scientific Thinking

- 7.2.1 Find what percentage one number is of another and figure any percentage of any number.
- 7.2.7 Use formulas to calculate the circumferences and areas of rectangles, triangles, and circles, and the volumes of rectangular solids.

Grade 8—Science

Standard 2: Scientific Thinking

Students use computers to organize and compare information. They perform calculations and determine the appropriate units for the answers. They weigh the evidence for or against an argument, as well as the logic of the conclusions.

- 8.2.4 Use technological devices, such as calculators and computers, to perform calculations.
- 8.2.5 Use computers to store and retrieve information in topical, alphabetical, numerical, and keyword files and create simple files of students' own devising.
- 8.2.6 Write clear, step-by-step instructions (procedural summaries) for conducting investigations, operating something, or following a procedure.

Grade 8—Social Studies

Standard 4: Economics

Analyze contributions of entrepreneurs, inventors, and other key individuals in the development of the United States economy.

- 8.4.5 Analyze contributions of entrepreneurs, inventors, and other key individuals in the development of the United States economy.

Section 4: Introduction to Performance Expectations, Instructional Strategies, and Assessment Strategies for Technology

The following items should be read prior to implementing the Instructional Strategies, Assessment Strategies, and Supplementary Resources presented on the following pages.

1. Four broad areas—Technology, Career Exploration, Personal Finance/Economics, and Business Management/Ownership—are included in the [Indiana Business and Information Technology Middle School Curriculum](#). An Indiana State Board of Education Rule states: Middle school students are to receive instruction every year in a minimum of two of the following practical arts program areas: Agriculture, Business and Information Technology, Family and Consumer Sciences, and Technology Education (Industrial Technology). Therefore, curriculum configurations are likely to differ from school to school based on the time allocated to practical arts program areas. Schools/teachers need to select content for the curriculum that will best serve their students’ needs and interests. Technological literacy, required by the No Child Left Behind legislation for all students by the completion of grade 8, personal financial literacy, and career exploration are of particular importance for all students. Also, the content in each of these areas provides concepts and applications that facilitate the development of competencies (e.g., reading comprehension, writing, math, critical thinking, and computer/technological literacy) required for success in all academic areas. The content selected can be integrated among any of the four broad areas in the [Indiana Business and Information Technology Middle School Curriculum](#) as well as with other curricular areas in the middle school.
2. **The [Indiana Business and Information Technology Middle School Curriculum](#) supports and reinforces many of the Indiana Academic Standards.** The Indiana Academic Standards listed pertain to grades 6-8 since these are the middle school grades for most Indiana school corporations. The items E/LA, M, S, and SS in the Supplementary Resources column relate to the Indiana Academic Standards for English/Language Arts, Mathematics, Science, and Social Studies. The first numeral of the standard designates the grade level. It is recommended that teachers review these standards prior to implementing instructional strategies (Part II, Section 3).
3. Numbers used for Content Standards and Performance Expectations combine alphabetical letters and numbers as follows: (a) BMS-T to designate the curriculum area; (b) BMS-T 1 to designate the specific curriculum area category; (c) BMS-T 1.1 to designate the Performance Expectation Content Standard; and (d) BMS-T 1.1.1 to designate the Performance Expectations for the content standard.
4. The first two Performance Expectation categories (Technology Operation Skills and Technology Conceptualization Skills) include some Performance Expectations (e.g., keyboarding proficiency) that must be achieved at the beginning of the curriculum. Other Performance Expectations do not need to be taught in the order listed; however, in a few instances, prerequisite material will need to be taught. **All of the materials pertaining to the [Indiana Business and Information Technology Middle School Curriculum \(Part II\)](#) and keyboarding instruction (Part I) should be read prior to implementation of any part of the curriculum.**
5. Since middle school students are inquisitive and questioning, teachers must be cognizant of “teachable moments” and take advantage of them to teach relevant concepts.
6. Journal activities (information on journal writing can be found at http://www.education-world.com/a_curr/curr144.shtml) and discussion participation are recommended as Instructional Strategies for many Performance Expectations. They provide students with important speaking and writing skills that reinforce the English/Language Arts Indiana Academic Standards. It is

recommended that journal activities be composed at the computer, be limited to a few paragraphs, and be saved to appropriate files. They should be evaluated for appropriate content and for quality of writing (punctuation, grammar, tone, coherence, and conciseness). Discussion participation should be characterized by appropriate vocabulary, tone, grammar, clarity, and relevance to the topic. The evaluation of these activities should focus on students following criteria (that incorporate the Academic Standards) given by the teacher. A multi-page student project in journaling is included in Appendix D. Also, examples of rubrics for assessing journal writing and class discussion are included in Appendix D.

7. A “project-based” method for teaching middle school business technology is recommended because it uses authentic experiences. A project-based activity may encompass a variety of Proficiency Expectations across several curricular areas. Use of the suggested projects listed in the Instructional Strategies and/or Supplementary Resources is critical to incorporating the Indiana Academic Standards. If other projects are substituted, they should address the Indiana Academic Standards listed. See Appendix D for instructions on how to create activities for project-based learning.
8. Integrated activities provide an opportunity to teach features of different application packages as they apply to a particular project.
9. Instruction for and reinforcement of specific Performance Expectations, especially those pertaining to software applications, should be distributed over the curriculum rather than concentrated in a short time frame. As students learn software applications, they should learn to multitask between and among software applications.
10. As students use software applications, they should be monitored for good input techniques and effective use of the software.
11. The specific multimedia tools in the curriculum should include computers; word processing, spreadsheet, presentation, publishing, database, and speech software; personal digital assistants; and tablet PCs. (A rotation basis could be implemented for technology with limited availability.)
12. It is assumed the teacher will create the “activity sheets,” “worksheets,” or “rubrics” referred to in the Instructional Strategies if not provided in this document. (Rubric Construction Guidelines are in Appendix D.) Ideas for creating activities may be obtained from textbook vendor materials available online.

Indiana Business and Information Technology Middle School Curriculum

Technology Grid

BMS-T 1 Technology Operation Skills

BMS-T 1.1 Content Standard: Students use hardware and software components and understand the difference between input and output devices.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 1.1.1 Use hardware and peripherals (input and output devices) to support content area learning including the use of touch screens and simple speech-recognition systems.</p>	<p>Compile hardware and software components worksheets Discuss and demonstrate each hardware and software component included on the worksheets</p> <ul style="list-style-type: none"> ➤ Students demonstrate competency expected for each hardware and software component on worksheets ➤ Students use the correct techniques as they use input devices <p>Discuss and demonstrate correct techniques for speech recognition, handwriting recognition, and other input devices (invite students to bring input devices to class)</p> <ul style="list-style-type: none"> ➤ Students give demonstrations of selected input devices ➤ Students discuss their observations with classmates 	<p>Evaluate each student's:</p> <p>Worksheets pertaining to hardware, software, and peripherals</p> <p>Quiz over hardware and software</p> <p>Performance on the basis of teacher-created input device technique sheets or rubrics</p> <p>Observation by teacher (develop a checklist for class use)</p> <p>Peer demonstrations</p>	<p>http://computer.howstuffworks.com/</p> <p>http://www.tekmom.com/</p> <p>Various Assessment Technique Sheets (Appendix D)</p> <p>Speaking Solutions—Nifty 50 Skill Checklist for Speech Recognition (Appendix D)</p> <p>Input, Output, Storage, or Processing Quiz (Appendix I)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
BMS-T 1.1.2 Demonstrate effective keyboarding techniques.	Discuss and demonstrate correct techniques for keyboarding <ul style="list-style-type: none"> ➤ Students use correct keyboarding techniques ➤ Students use keyboarding checklist to observe partner's keyboarding 	Evaluate each student's: Performance on the basis of a Keyboarding Technique Sheet or rubric Completion of partner's technique checklist	Keyboarding Technique Assessments (Appendix D)
BMS-T 1.1.3 Connect to the Internet using school network/modem and browser. BMS-T 1.1.4 Use still imaging with digital cameras. BMS-T 1.1.5 Use video imaging with digital cameras. BMS-T 1.1.6 Use an array of media and appropriate cabling to support academic work.	Discuss matching technology with specific tasks that need to be accomplished—which technology to use for various assignments Develop and discuss checklist for creating a multimedia tour of the school <ul style="list-style-type: none"> ➤ Students use appropriate technology to prepare a multimedia “tour” of their school for later use in connection with publishing software to create a “This Is My School” brochure ➤ Students place multimedia files in “This Is My School” folder for later use ➤ Students continuously use the basic features of each piece of hardware and demonstrate appropriate technique 	Evaluate each student's: “This Is My School” folder (should contain appropriate materials based on check-off list given to students) Technique through teacher observation	“This Is My School Project” (Appendix I) <i>This Is My School activity could be expanded to an integrated project or a stand alone multimedia project</i>
BMS-T 1.1.7 Use PDAs or other handheld devices. BMS-T 1.1.8 Use scanners. BMS-T 1.1.9 Use mouse, keyboard, touch screen, stylus pen,	Demonstrate the operation of a handheld device and discusses its use for business and personal tasks <ul style="list-style-type: none"> ➤ Students discuss situations where they have seen (or think) handheld devices could be used advantageously Discuss, demonstrate, and practice other input devices	Evaluate each student's: Participation in discussion Technique through teacher observation	Class Discussion Assessment (Appendix D)

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>and/or speech (input devices) to input information.</p> <p>BMS-T 1.1.10 Use monitor, printer, and/or speakers (output devices) to review information.</p> <p>BMS-T 1.1.11 Use the icon/GUI (graphical user interface) of the operating system to launch and operate software.</p> <p>BMS-T 1.1.12 Use the GUI of the operating system to save and back up files to a hard drive, other drives, or a server.</p> <p>BMS-T 1.1.13 Use the GUI of the operating system with application software (e.g., databases, spreadsheets, word processing, or educational software) to import images, text, and video/sound. See specific Productivity Tools, BMS-T 4.</p> <p>BMS-T 1.1.14 Use the GUI of the operating system to organize electronic files.</p>	<ul style="list-style-type: none"> ➤ Students use input devices to do various tasks and compare the operation and capabilities of each input device <p>Discuss and demonstrate GUI</p> <ul style="list-style-type: none"> ➤ Students brainstorm about noncomputer devices that use a GUI/button system (e.g., TV remote control, remote control toys, blender, microwaves, MP3 players, and PDAs) ➤ Students demonstrate the use of the computer GUI 	<p>Participation in discussion</p> <p>Use of the GUI (as noted in the Performance Expectation) through teacher observation</p> <p>Backup files and file organization through checking saved files</p>	<p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-T 1.1.15 Evaluate and select appropriate innovative technologies (hand-held devices) to match the needs of tasks.</p>	<p>Discuss a variety of projects where multiple devices could be used</p> <p>Distribute a class activity sheet, which requires students to determine which technology to use to obtain the desired results of the tasks</p> <ul style="list-style-type: none"> ➤ Students (in small groups) read class activities sheet ➤ Students (in small groups) discuss and make technology choices ➤ Students (in small groups) present and discuss choices with the class 	<p>Evaluate each student's:</p> <p>Class participation in determining technology</p>	<p>Class Discussion Assessment (Appendix D)</p>

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
			<u>Indiana Academic Standards Addressed:</u> E/LA 7.6.6 S—6.2.3 S—6.7.1 S—7.1.10, 7.1.11 S—8.2.5

BMS-T 2 Technology Conceptualization Skills

BMS-T 2.1 Content Standard: Students demonstrate a comprehensive understanding of the interactivity and operation of technology systems.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
BMS-T 2.1.1 Explain the functional relationship between basic hardware and software systems and their components.	Discuss and demonstrate the operating system software (use the Peanut Butter Sandwich activity) <ul style="list-style-type: none"> ➤ Students make a peanut butter sandwich by following specific directions to show the step-by-step process of how to make a sandwich—transfer of knowledge from making a sandwich to the way a computer operates ➤ Students discuss the functional relationship between hardware and systems software based on their sandwich activity and each component 	<u>Evaluate each student's:</u> Participation in sandwich activity Participation in discussion	Peanut Butter Sandwich Activity http://teachers.net/lessons/posts/2166.html Computers Follow Instructions—An Exercise (Appendix I) http://computer.howstuffworks.com http://www.tekmom.com/ Class Discussion Assessment (Appendix D)
BMS-T 2.1.2 Explain the use of and the necessity for input and output devices.	Discuss the information processing cycle focusing on the input, processing, output, and storage components	<u>Evaluate each student's:</u>	

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 2.1.3 Explain the organizational concept behind using files and folders for storing information and organizing files into folders.</p> <p>BMS-T 2.1.4 Explain the purpose and necessity of saving documents as files and save documents as files.</p> <p>BMS-T 2.1.5 Use technology terminology appropriately to describe the basic relationships among input, processing, and output functions.</p>	<p>Create and distribute to students a list of input, processing, output, and storage components</p> <ul style="list-style-type: none"> ➤ Students determine the function of each component on the list <p>Create a set of presentation slides with a variety of input, processing, output, and storage items for students to identify</p> <ul style="list-style-type: none"> ➤ Students identify devices and components <p>Discuss and demonstrate file management by using “noncomputer” examples (e.g., by using paper slips to represent different types of files)</p> <ul style="list-style-type: none"> ➤ Students sort and arrange the slips of paper into folders and files ➤ Students practice naming and saving files 	<p>Responses on input, processing, output, and storage checklist</p> <p>Knowledge of the information processing cycle through a quiz including input, processing, storage, and output</p> <p>File Management Activity</p>	<p>Input, Output, Storage, or Processing Quiz (Appendix I)</p> <p>File Management Activity materials—actual cross-curricular materials from social studies, language arts, geography, etc., for folders/files</p>
<p>BMS-T 2.1.6 Explain the functions of the central processing unit, motherboard, etc.</p> <p>BMS-T 2.1.7 Explain the purposes of the GUI (beyond launching software applications).</p> <p>BMS-T 2.1.8 Explain the use of and the difference between temporary memory (RAM), permanent memory (ROM), and storage (e.g., digital storage on hard, flash, external, floppy, and zip disks/drives; magnetic tape; and CD/DVD optical storage).</p>	<p>Discuss and show a video on the computer hardware basic operations</p> <ul style="list-style-type: none"> ➤ Students view video and take notes ➤ Students discuss the information viewed using correct terminology <p>Discuss and demonstrate dragging files to the desktop and saving on the desktop and other operations using the GUI interface</p> <ul style="list-style-type: none"> ➤ Students follow teacher demonstration at their stations <p>Discuss and illustrate types of computer memory and storage (use video)</p> <ul style="list-style-type: none"> ➤ Students use teacher-created flash cards to match and list RAM, ROM, and storage items 	<p>Evaluate each student’s:</p> <p>Participation in discussion</p> <p>Terminology quiz</p> <p>Performance of task by teacher observation</p> <p>List of RAM, ROM, and storage items</p>	<p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-T 2.1.9 Identify and discuss the variety of technologies used in society.</p>	<p>Discuss the use of technology in banking or other areas or have guest speaker address an appropriate topic</p> <ul style="list-style-type: none"> ➤ Students brainstorm in small groups and create a list of ways technology is used in society ➤ Students share their list in class discussion 	<p>Evaluate each student's:</p> <p>Participation in small group</p> <p>Participation in discussion</p>	<p>Class Discussion Assessment (Appendix D)</p> <p><u>Indiana Academic Standards Addressed:</u> E/LA—6.4.5</p> <p>S—6.7.1 S—8.2.5, 8.2.6</p>

BMS-T 3 Social and Ethical Issues of Technology

BMS-T 3.1 Content Standard: Students understand the social, legal, and ethical issues related to technology use. Students practice responsible use of hardware, software, and data. Students interact positively with technology independently and in collaboration with others.

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-T 3.1.1 Practice respectful and responsible use of technology through abiding by the school technology and Internet use policy.</p> <p>BMS-T 3.1.2 Use technology independently and collaboratively.</p>	<p>Discuss and demonstrate online safety practices</p> <ul style="list-style-type: none"> ➤ In teams, students create a list of cyber safety rules <p>Discuss the Corporation-wide Acceptable Use Policy (AUP)</p> <ul style="list-style-type: none"> ➤ Students write in their own words what the AUP means to them <p><i>Throughout the course, provide projects that involve individual and collaborative uses of technology</i></p>	<p>Evaluate each student's:</p> <p>List of cyber safety rules</p> <p>Written interpretation of AUP (demonstrating command of standard English)</p>	<p>Cyber Safety sites</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 3.1.3 Demonstrate an understanding of plagiarism and fair use; respect copyright laws of information producers such as authors and artists.</p> <p>BMS-T 3.1.4 Demonstrate an understanding of the interaction and interdependence between humans and technology.</p>	<p>Discuss and demonstrate cheating, hacking, fair use, and copyright issues</p> <ul style="list-style-type: none"> ➤ Student teams are given one of several case studies dealing with ethical concerns, copyright, etc., as the basis for writing a report ➤ Students research on the Internet respective case study topics ➤ Each individual on the team creates a section of the written report ➤ Teams create the report by compiling and revising each member's section including a works-cited page <p>Discuss the use of e-mail and the use of the computer for personal use on business time</p> <ul style="list-style-type: none"> ➤ Students read case studies pertaining to how technology has "caught" employees doing inappropriate things ➤ Students generate a list of illegal and/or inappropriate things done on the computer and explain why these things are problematic ➤ Students write a journal entry pertaining to technology legal and ethical issues <p>Introduce the topic of the use of technology in education</p> <ul style="list-style-type: none"> ➤ Students brainstorm about how technology is involved in the way their school operates and other ways it relates to education ➤ Students write a journal entry pertaining to how students and schools depend on technology 	<p>Evaluate each student's:</p> <p>Written report (demonstrating command of standard English, including varied word choice) with a works-cited page where appropriate and that follows other instructions given by the teacher</p> <p>Participation in discussion</p> <p>Journal entry (that demonstrates the use of a thesis statement, a command of standard English, etc.) on the legal and ethical issues in using computer technology</p> <p>Participation in brainstorming</p> <p>Journal entry (that demonstrates the use of a thesis statement, a command of standard English, etc.) on the legal and ethical issues in</p>	<p>Class Discussion Assessment (Appendix D)</p> <p>Journal Entry Assessment (Appendix D)</p> <p>Journal Entry Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-T 3.1.5 Explain how changes in technology affect the workplace and society.</p>	<p>Guest speaker on technology used in the workplace</p> <ul style="list-style-type: none"> ➤ Students take notes ➤ Students use notes to key a journal entry on technology used in the workplace <p>Guest speaker—e.g., police officer—discusses how technology has affected his/her performance</p> <ul style="list-style-type: none"> ➤ Students take notes ➤ Students use notes to key a journal entry on how technology has affected the work of the guest speaker 	<p>using computer technology</p> <p>Journal entry (that demonstrates the use of a thesis statement, a command of standard English, etc.) on the technological and human interface in the workplace</p> <p>Journal entry</p>	<p>Journal Entry Assessment (Appendix D)</p> <p>Journal Entry Assessment (Appendix D)</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.4.1, 6.4.5, 6.4.7, 6.4.8, 6.4.9, 6.4.10</p> <p>E/LA—6.5.2, 6.5.3, 6.5.6, 6.5.7</p> <p>E/LA—6.6.1, 6.6.2, 6.6.3, 6.6.4, 6.6.5</p> <p>E/LA—7.2.2</p> <p>E/LA—7.4.2, 7.4.4, 7.4.5, 7.4.6, 7.4.7, 7.4.8, 7.4.9, 7.4.10</p> <p>E/LA—7.5.5, 7.5.6</p> <p>E/LA—7.6.1, 7.6.3, 7.6.5, 7.6.6, 7.6.7, 7.6.8</p> <p>E/LA—8.2.5</p> <p>E/LA—8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.6, 8.4.7, 8.4.8, 8.4.9</p> <p>E/LA—8.5.6, 8.5.7</p> <p>E/LA—8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.5, 8.6.6, 8.6.7</p> <p>S—6.2.7</p> <p>S—7.1.10</p> <p>S—8.2.5</p>

BMS-T 4 Technology as a Productivity Tool

BMS-T 4.1 Content Standard: Students use technology as a tool to enhance learning and creativity. Students are able to use technology to increase productivity in developing models, publications, and other creative works.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 4.1.1 Demonstrate word-processing skills by using correct key-boarding techniques.</p> <p>BMS-T 4.1.2 Demonstrate word-processing skills by creating a variety of documents.</p> <p>BMS-T 4.1.3 Demonstrate word-processing skills by saving and printing documents.</p> <p>BMS-T 4.1.4 Demonstrate word-processing skills by accessing and editing previously created documents, including the effective use of editing commands (e.g., delete and cut/copy/paste).</p> <p>BMS-T 4.1.5 Demonstrate word-processing skills by using spell check, thesaurus, and grammar features at a grade-appropriate level.</p>	<p>For each of the software applications, give specific instructions (both oral and written) for the materials to be produced as well as for saving and printing files.</p> <p>Students use a variety of software for specific learning and to produce specific forms of output using each tool (e.g., reports, letters, spreadsheets, e-mail, etc.)</p> <p>Discuss and demonstrate the following word processing applications and techniques</p> <ul style="list-style-type: none"> ➤ Students key, save, and print letters, reports (including references), etc., as specified by the teacher <p>Discuss and demonstrate proofreading, word choice, and the use of editing marks and editing commands throughout the term</p> <ul style="list-style-type: none"> ➤ Students demonstrate proofreading including the use of editing marks and editing commands ➤ Students produce a final revised copy of documents specified by the teacher <p>Word Processing exercises should include: Formatting documents</p>	<p>Evaluate each student's:</p> <p>Materials produced for each software application using a rubric</p> <p>Project(s) on the basis of a teacher-created rubric(s) or checklist(s)</p>	<p>Word Processing Projects/Activities Ideas:</p> <ul style="list-style-type: none"> ▪ Career-related report/materials (integrated within several areas) ▪ Holiday Project (Appendix I) ▪ Core content integration ▪ Editing projects: spell check, grammar, thesaurus, punctuation, capitalization, number usage, sentence structure, paragraph flow, transition between paragraphs, conciseness, completeness, accuracy/validity, tone, adaptation for audience <p>Cathy's Technology Training Resources http://www.davis.k12.ut.us/etc/cathy/index.htm</p> <p>Keyboarding Technique Sheets (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 4.1.6 Demonstrate word-processing skills by using appropriate software to create outlines for papers.</p> <p>BMS-T 4.1.7 Demonstrate word-processing skills by using software to cite references.</p> <p>BMS-T 4.1.8 Demonstrate the ability to format a variety of documents that meet employability standards.</p>	<p>Proofreading, editing, revising specific content: letters, envelopes, labels, memos, short and multi-page reports with documentation and works-cited pages, tables, etc.</p>		
<p>BMS-T 4.1.9 Demonstrate spreadsheet skills by creating worksheets and charts.</p> <p>BMS-T 4.1.10 Demonstrate spreadsheet skills by saving and printing files.</p> <p>BMS-T 4.1.11 Demonstrate spreadsheet skills by accessing and retrieving data.</p> <p>BMS-T 4.1.12 Demonstrate spreadsheet skills by organizing and analyzing data.</p>	<p>Discuss and demonstrate the following spreadsheet applications and techniques</p> <ul style="list-style-type: none"> ➤ Students create spreadsheets in a workbook for their LemonadeStand project or similar assigned project ➤ Students analyze data using software features ➤ Students create appropriate charts based on the activity chosen <p>Spreadsheets exercises should include:</p> <p>Formulas/math calculations Workbooks Worksheets Charts and graphs Proofreading, editing, revising Troubleshooting</p>	<p>Evaluate each student's:</p> <p>Project(s) on the basis of a teacher-created rubric(s) or checklist(s)</p>	<p>Spreadsheet Projects/Activities Ideas:</p> <ul style="list-style-type: none"> ▪ Student Projects/Activities—Supplementary Resources (Appendix I) ▪ LemonadeStand Project (Appendix I) ▪ Purchasing Your First Computer Project (Appendix I) ▪ Stock Market Simulation ▪ Interdisciplinary connections: health, language arts, math, science, social studies, physical education ▪ Core content integration
<p>BMS-T 4.1.13 Demonstrate database skills by creating simple database files.</p> <p>BMS-T 4.1.14 Demonstrate database skills by saving and printing files.</p> <p>BMS-T 4.1.15 Demonstrate</p>	<p>Discuss and demonstrate construction and use of a database</p> <ul style="list-style-type: none"> ➤ Students create a database of personal information of students in the class: name, grade, height, birth dates, favorite sport, favorite food, favorite subject, favorite city 	<p>Evaluate each student's:</p> <p>Project(s) on the basis of a teacher-created rubric(s) or checklist(s)</p>	<p>Database Projects/Activities Ideas:</p> <ul style="list-style-type: none"> ▪ Student Projects/Activities—Supplementary Resources (Appendix I) ▪ Collections of students ▪ Core content integration

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
<p>database skills by accessing and retrieving data.</p> <p>BMS-T 4.1.16 Demonstrate database skills by organizing and analyzing data.</p>	<p>➤ Students do various database activities with the information gathered, e.g., sort, query, and create a simple report</p> <p>Databases exercises should include interpretation of data in: Tables Queries Reports</p>		
<p>BMS-T 4.1.17 Demonstrate multimedia skills (including desktop publishing) through the use of paint, draw, text, or sound to create simple visual aids.</p> <p>BMS-T 4.1.18 Demonstrate presentation skills through the use of presentation software to create well-organized, informative slide presentations.</p> <p>BMS-T 4.1.19 Demonstrate presentation software skills by saving and printing files.</p> <p>BMS-T 4.1.20 Demonstrate presentation software skills through the use of basic design guidelines to enhance visual presentations.</p>	<p>Discuss and demonstrate the features of the software and guidelines for designing desktop publishing documents and slide presentations</p> <p>➤ Students create a cover page for their Holiday Project or other activity using paint/draw, word art, etc.</p> <p>Publishing exercises should include: Text Images Page orientation Proofreading, editing, revising Enhancements Columns Specific uses: flyers, letterhead, newsletters, business cards, brochures</p>	<p>Evaluate each student's:</p> <p>Project(s) on the basis of a teacher-created rubric or checklist</p> <p>Cover page for Holiday Traditions booklet through a teacher-designed checklist</p>	<p>Presentation Projects/Activities Ideas:</p> <ul style="list-style-type: none"> ▪ Career exploration ▪ Student Projects/Activities— Supplementary Resources (Appendix I) ▪ This is My School Project (Appendix I) ▪ LemonadeStand Project (Appendix I) ▪ Holiday Project (Appendix I) ▪ Core content integration <p>Publishing Projects/Activities Ideas:</p> <ul style="list-style-type: none"> ▪ Student Projects/Activities— Supplementary Resources (Appendix I) ▪ “This Is My School” Project (Appendix I) ▪ Core content integration
<p>BMS-T 4.1.21 Log on to preselected Internet sites and view information.</p> <p>BMS-T 4.1.22 Demonstrate the ability to use Internet search engines to access information by identifying</p>	<p>Demonstrate accessing selected Internet sites</p> <p>➤ Students follow demonstration through oral instruction to access selected sites</p> <p>Discuss and demonstrate the use of Internet search engines to locate, access, and bookmark specific kinds</p>	<p>Evaluate each student's:</p> <p>Performance through teacher observation</p>	<p>Internet Projects/Activities Ideas:</p> <ul style="list-style-type: none"> ▪ Internet projects should be integrated with various software application activities and projects ▪ Core content integration

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>and conducting searches using Internet/intranet search engines and directories.</p> <p>BMS-T 4.1.23 Demonstrate the ability to use Web browser functions to access information by bookmarking/creating favorites.</p> <p>BMS-T 4.1.24 Demonstrate telecommunications skills through the use of e-mail to contact peers, teachers, and other audiences.</p>	<p>of information Create and distribute a list of items (Scavenger Hunt) for students to search and find the information</p> <ul style="list-style-type: none"> ➤ Students do Internet scavenger hunts finding various information ➤ Students do selected activities in searching for materials related to interdisciplinary projects in other classes <p>Discuss and demonstrate appropriate and inappropriate email netiquette</p> <p>Give students a poorly written email</p> <ul style="list-style-type: none"> ➤ Students rewrite the email using good netiquette <p>Discuss submission of class assignments and projects by using appropriate telecommunication tools</p> <ul style="list-style-type: none"> ➤ Students use “print preview” to determine correctness of documents prior to printing or attaching to email for submission ➤ Students write appropriate emails during the entire course demonstrating proper telecommunication skills 	<p>Completed Scavenger Hunts on the basis of instructions given</p> <p>Project(s) on the basis of a teacher-created rubric(s) or checklist(s)</p> <p>Corrected copy of email message</p> <p>E-mail products by using a teacher-created rubric for each item</p> <p>Choice of telecommunication method for submission of assignments</p> <p>Completion of email assignments by following the Do’s and Don’ts of “Netiquette - Guidelines For The Use of E-mail”</p>	<p>http://students.shu.ac.uk/cis/e-mail/netiquette.html</p>
<p>BMS-T 4.1.25 Demonstrate the ability to develop a simple Web page designed (software driven) to convey information about a specific academic content area topic.</p>	<p>Discuss and demonstrate Web page design principles</p> <ul style="list-style-type: none"> ➤ Students critique using a teacher-created rubric) various Web sites selected by the teacher <p>Discuss creating a simple Web page Demonstrate the creation of a Web page</p>	<p>Evaluate each student’s:</p> <p>Web page evaluation critiques</p>	<p>http://school.discovery.com/schrockguide/eval.html</p> <p>Web page Projects/Activities Ideas:</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 4.1.26 Use software or online help features of application programs to support product use.</p>	<ul style="list-style-type: none"> ➤ Students create a simple Web page by following the steps in the demonstration ➤ Students create a personal Web page <p>Discuss and demonstrate the use of the Help menu and online help access</p> <p>Instruct students to create a simple table and to use the help function to answer questions in completing assignment</p> <ul style="list-style-type: none"> ➤ Students create a simple table using word processing software ➤ Students utilize Help and online features throughout the completion of activities and projects 	<p>Web page created by following steps</p> <p>Personal Web page using teacher-created rubric</p> <p>Table (based on instructions given and the use of the “Help” features)</p>	<ul style="list-style-type: none"> ▪ Holiday Project (Appendix I) ▪ “This Is My School” Project (Appendix I) ▪ Core content integration <p>Student Designed Web page rubric (Appendix D)</p>
<p>BMS-T 4.1.27 Demonstrate the ability to select appropriate software for completing a variety of projects.</p> <p>BMS-T 4.1.28 Demonstrate the ability to follow instructions (instructor, text, manuals, and/or screen).</p> <p>BMS-T 4.1.29 Demonstrate the ability to work independently and as a team member (includes efficient use of time, organization of work, etc.).</p> <p>BMS-T 4.1.30 Demonstrate appropriate conduct in the classroom.</p>	<p>Discuss ways to find answers to questions pertaining to software applications and creation of various materials</p> <ul style="list-style-type: none"> ➤ Students demonstrate that they know how to use proper procedures ➤ Students demonstrate the “use of Help” <p>Distribute computer projects to be used during the term</p> <ul style="list-style-type: none"> ➤ Students determine and discuss which software applications and application features are to be used to create specific effects needed in the document ➤ Students complete projects throughout the term <p>Discuss business and school soft-skill expectations, including: work on team</p>	<p>Evaluate each student’s:</p> <p>Participation in discussion</p> <p>Project(s) on the basis of a teacher-created rubric(s) or checklist(s)</p>	<p>Class Discussion Assessment (Appendix D)</p> <p><u>Integrated Software Projects/Activities Ideas:</u></p> <ul style="list-style-type: none"> ▪ Student Projects/Activities—Supplementary Resources (Appendix I) ▪ “This Is My School” (Appendix I) ▪ Virtual Vacation—Bon Voyage (Appendix I) ▪ Computer Purchase (Appendix I) <p><u>Indiana Academic Standards Addressed:</u> E/LA—6.2.1, 6.2.4 E/LA—6.4.5, 6.4.7, 6.4.8, 6.4.9, 6.4.10</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 4.1.31 Demonstrate appropriate handling and use of supplies.</p>	<p>projects, classroom management, handling of supplies, following instructions, etc.</p> <ul style="list-style-type: none"> ➤ Students compile a list of important business and school soft skills <p>Discuss and distribute business/school soft-skill rubric to be used over the academic term (semester, trimester, block, etc.)</p> <ul style="list-style-type: none"> ➤ Students must demonstrate appropriate business and school soft skills throughout the term <p>Discuss and demonstrate the importance of following instructions (oral and written) as an individual and as a team member</p> <ul style="list-style-type: none"> ➤ Students demonstrate their ability to following instructions throughout the course <p>Discuss the rules for classroom conduct, time management, and supplies use</p> <ul style="list-style-type: none"> ➤ Students demonstrate their ability to conduct themselves in an appropriate manner during all activities including handling and use of supplies 	<p>Business/School Skills using a teacher-created rubric or Business/School Skills (Appendix D)</p> <p>Business/School Skills based on teacher observation</p> <p><i>For all projects, make following instructions (oral and written) an evaluation component</i></p> <p>Conduct, time management, and supply handling based on teacher observation</p>	<p>E/LA—6.5.2, 6.5.3, 6.5.6, 6.5.7 E/LA—6.6.1, 6.6.2, 6.6.3, 6.6.4, 6.6.5 E/LA—6.7.3 E/LA—7.2.2 E/LA—7.4.2, 7.4.4, 7.4.5, 7.4.6, 7.4.7, 7.4.8, 7.4.9, 7.4.10 E/LA—7.5.5, 7.5.6 E/LA—7.6.1, 7.6.3, 7.6.5, 7.6.6, 7.6.7, 7.6.8 E/LA—8.2.5 E/LA—8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.6, 8.5.7 E/LA—8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.5, 8.6.6, 8.6.7</p> <p>M—6.2.3, 6.2.8 M—6.3.2, 6.3.4 M—6.7.3, 6.7.4, 6.7.9, 6.7.10, 6.7.11 M—7.2.2, 7.2.2 M—7.3.1, 7.3.5 M—7.6.1, 7.6.2, 7.6.4 M—7.7.3, 7.7.4, 7.7.10, 7.7.11, 7.7.12 M—8.2.2, 8.2.3 M—8.7.1, 8.7.3, 8.7.10, 8.7.11</p> <p>S—6.2.2, 6.2.3, 6.2.5, 6.2.6, 6.2.7, 6.2.8 S—6.5.4 S—7.2.7 S—8.2.4, 8.2.5</p>

BMS-T 5 Technology as a Communication Tool

BMS-T 5.1 Content Standard: Students use telecommunications to collaborate, publish, and interact with peers, teachers, and other audiences. Students use a variety of technologies to convey information, such as e-mail, e-learning, video conferencing, and telephony.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 5.1.1 Demonstrate telecommunications skills by collaborating and communicating effectively (using e-mail, instant messaging, blogging, chat, net meetings, etc.) with peers, teachers, and other audiences.</p> <p>BMS-T 5.1.2 Use technology to plan, develop, and present key concepts to different types of audiences.</p> <p>BMS-T 5.1.3 Select appropriate presentation formats (e.g., paper, Web page, multimedia presentation, speech, or hypermedia).</p>	<p>Discuss and demonstrate telecommunication tools and considerations for making choices for using a specific telecommunication tool</p> <ul style="list-style-type: none"> ➤ Students recommend/select appropriate media communication tools for a variety of situations <p>Discuss audience analysis and message content, tone, etc.</p> <ul style="list-style-type: none"> ➤ Students use e-mail to communicate with the teacher and peers regarding homework assignments, questions, etc. ➤ Students communicate the same message (both oral and written) to different audiences and explain the adaptations made ➤ Students create simple Web pages or newsletters for elementary and middle school classes 	<p><u>Evaluate each student's:</u></p> <p><i>All written materials should demonstrate the command of standard English, including varied word choice, etc.</i></p> <p>E-mail for tone and completeness</p> <p>Web pages/newsletters using teacher-created rubric or rubric in Appendix D)</p>	<p>Business Blogging Sites: http://Fastlane.gmblogs.com www.boeing.com/randy http://steverubel.typepad.com/micropeersuasion http://blogs.sun.com/jonathan http://blogs.redhat.com/executive www.stonyfield.com/weblog http://blog.plaxoed.com</p> <p>Keyboarding Assessment and Computer Application Rubrics Materials (Appendix D)</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.4.3, 6.4.6, 6.4.7, 6.4.8, 6.4.9, 6.8.10 E/LA—7.4.8, 7.4.9, 7.4.10 E/LA—7.5.6, 7.5.7 E/LA—7.6.3, 7.6.5, 7.6.6, 7.6.7, 7.6.8 E/LA—8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.6, 8.5.7</p>

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
			E/LA—8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.5, 8.6.6, 8.6.7 S—7.1.11

BMS-T 6 Technology as an Information Research Tool

BMS-T 6.1 Content Standard: Students use technology to access, review, evaluate, and select information from multiple resources for reporting purposes. Students write appropriate research reports.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 6.1.1 Use technology to conduct research for specific problems or questions that need to be resolved.</p> <p>BMS-T 6.1.2 Use technology to conduct research by using common electronic reference resources to access information such as almanacs, encyclopedias, indexes, online specialized databases, and online catalogs.</p> <p>BMS-T 6.1.3 Evaluate and select appropriate sources of information (print, nonprint, video, electronic, and</p>	<p>Throughout this section, students will be working on a career development research project and report in conjunction with the Indiana Business and Information Technology Middle School Curriculum—Career Development/Exploration Performance Expectations</p> <p>Discuss career research report (See the Indiana Business Education Middle Business School Curriculum—Career Development/Exploration section)</p> <ul style="list-style-type: none"> ➤ Students select a first and second choice career to research <p>Discuss how to judge the validity of Internet resources through presentation software and distribute the corresponding handout to students</p> <ul style="list-style-type: none"> ➤ Students key the 5 W's of Web site evaluation from their notes and discuss these points 	<p>Evaluate each student's:</p> <p>Keyed copy of 5 W's of Web Site Evaluation Participation in discussion</p>	<p>http://kathyschrock.net/abceval</p> <p>http://school.discovery.com/schrockguide/eval.html</p> <p>Career Research Report Rubric (Appendix I)</p> <p>http://kathyschrock.net/abceval/5ws.htm Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>human) for a specific research problem or question.</p> <p>BMS-T 6.1.4 Evaluate and select several resources from a variety of information sources by reviewing each author’s credentials, perspective, or bias; validate the accuracy of information.</p> <p>BMS-T 6.1.5 Evaluate and select several resources from a variety of information sources based on the audience.</p> <p>BMS-T 6.1.6 Use technology to conduct searches by using basic search techniques (e.g., subject, author, title, and keyword) to locate required information on Internet/intranet search engines.</p> <p>BMS-T 6.1.7 Use technology to conduct searches by using Boolean operators, independently or with guidance, to locate information.</p> <p>BMS-T 6.1.8 Use technology to conduct searches by using sophisticated reference tools such as biographical dictionaries and thesauri in print and electronic formats.</p> <p>BMS-T 6.1.9 Evaluate and select several resources from a variety of information sources by using new information. (As information is integrated with prior knowledge, <i>new</i> information is attained.)</p>	<p>Discuss and demonstrate how to cite references through a project sheet created by the teacher (through the preceding instructional strategies, students should have covered all performance expectations for Standard BMS-T 6--except writing the report. The following instructional strategies are pertinent to writing the research report)</p> <ul style="list-style-type: none"> ➤ Students create a works-cited page by using a project-sheet handout for researched material for their career or other major report (See Career Exploration section of Indiana Business Technology Middle School curriculum) ➤ Students create a works-cited page using an Internet site that generates a fill-in form <p>Discuss and explain the use of citations for quoting and paraphrasing</p> <p>Discuss and explain the use of how and when to use direct quotations or paraphrasing</p> <ul style="list-style-type: none"> ➤ Students produce material (key or speech) distributed by the teacher using paraphrasing and quotations correctly <p>Discuss or review search engines, Web browsers, databases, reference sources, etc.</p> <p>Discuss and demonstrate a variety of search techniques including Boolean searches</p> <ul style="list-style-type: none"> ➤ Students conduct appropriate 	<p>Works-cited page</p> <p>Works-cited page</p> <p>Paraphrased and quoted material</p>	<p>http://citationmachine.net/</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
	<p>research for career report (See Performance Expectation BMS T 6.1.1 – BMS T 6.1.8)</p> <p>Discuss and demonstrate how to interpret, generalize, and draw conclusions from materials retrieved from the Internet</p> <ul style="list-style-type: none"> ➤ Students write a career research report (10-12 pages) on their first and second choices, which includes (but is not limited to) a description of the career, duties and responsibilities, opportunities for advancement, salary range, employment demand, working conditions, education required, etc. 	<p>Career Research Report</p>	<p>Career Research Report Project (Appendix I)</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.7 E/LA—6.4.3, 6.4.4, 6.4.5, 6.4.6, 6.4.7, 6.4.8, 6.4.9, 6.4.10 E/LA—6.5.2, 6.5.3, 6.5.6 E/LA—6.6.1, 6.6.2, 6.6.3, 6.6.4, 6.6.5 E/LA—7.2.2 E/LA—7.4.2, 7.4.4, 7.4.5, 7.4.6, 7.4.7, 7.4.9, 7.4.10 E/LA—7.5.5, 7.5.6 E/LA—7.6.1, 7.6.3, 7.6.5, 7.6.6, 7.6.7, 7.6.8 E/LA—8.2.5 E/LA—8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.6 E/LA—8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.5, 8.6.6, 8.6.7</p> <p>M—6.2.3, 6.2.8 M—6.3.2, 6.3.3, 6.3.4 M—6.7.9, 6.7.10, 6.7.11 M—7.2.3 M—7.7.3, 7.7.4, 7.7.10, 7.7.11 M—8.2.2, 8.2.3 M—8.7.3, 8.7.10, 8.7.11</p> <p>S—6.2.7 S—8.2.5</p>

BMS-T 7 Technology as a Problem-Solving and Data-Driven Decision-Making Tool

BMS-T 7.1 Content Standard: Students use technology to develop strategies for solving problems.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-T 7.1.1 Use technology to solve problems and make informed decisions.</p> <p>BMS-T 7.1.2 Use appropriate tools (e.g., spreadsheets) to analyze a problem from different perspectives.</p> <p>BMS-T 7.1.3 Use appropriate simulation software tools (e.g., LemonadeStand and Stock Market) to analyze a problem from different perspectives.</p> <p>BMS-T 7.1.4 Use appropriate simulation software tools to review the outcomes of a specific problem scenario over time.</p>	<p>Discuss steps in problem solving using presentation software and distribute the corresponding handout to students</p> <ul style="list-style-type: none"> ➤ Students create a desktop publishing document from their notes that outlines the steps involved in problem solving <p>Discuss how to weigh alternative solutions to problems</p> <ul style="list-style-type: none"> ➤ Students read a case study and write a short narrative identifying the problem(s) ➤ Students discuss alternative solutions and their respective merits ➤ Students use appropriate software to identify the best solution <p>Discuss and give instructions for the LemonadeStand or other simulation</p> <ul style="list-style-type: none"> ➤ Students participate in the Lemonade Stand simulation on the Internet, make daily decisions for a specific number of days pertaining to the business conditions, and record decisions in their journals ➤ Students write a short report depicting their business decisions in the simulation (including the creation of appropriate spreadsheets, charts, etc.) 	<p><u>Evaluate each student's:</u></p> <p>Appropriately formatted Problem Solving Document</p> <p>Case study analysis</p> <p>LemonadeStand materials: spreadsheets, charts, decisions, report, etc.</p> <p>Correctly written report (demonstrating command of standard English, including varied word choice)</p>	<p>LemonadeStand Project (Appendix I)</p> <p><u>Indiana Academic Standards Addressed:</u> E/LA—6.4.7, 6.4.9, 6.4.10 E/LA—6.5.2, 6.5.3, 6.5.6 E/LA—6.6.1, 6.6.2, 6.6.3, 6.6.4, 6.6.5 E/LA—7.4.2, 7.4.4, 7.4.5, 7.4.7, 7.4.9, 7.4.10 E/LA—7.5.5, 7.5.6 E/LA—7.6.1, 7.6.3, 7.6.5, 7.6.6, 7.6.5, 7.6.6, 7.6.7, 7.6.8 E/LA—8.2.5 E/LA—8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.6 E/LA—8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.5, 8.6.6, 8.6.7</p> <p>M—6.2.3, 6.2.8 M—6.3.2, 6.3.3, 6.3.4 M—6.7.3, 6.7.4, 6.7.9, 6.7.10, 6.7.11 M—7.2.2, 7.2.3 M—7.3.1, 7.3.5 M—7.6.1, 7.6.2, 7.6.4 M—7.7.3, 7.7.10, 7.7.11 M—8.2.2, 8.2.3 M—8.7.1, 8.7.3, 8.7.10, 8.7.1</p> <p>S—6.2.2, 6.2.5, 6.2.7 S—6.5.4 S—7.2.7 S—8.2.4</p>

BMS-T 8 Technology as an Assessment Tool

BMS-T 8.1 Content Standard: Students use technology to take developmentally appropriate tests utilizing audio and/or visual feedback when necessary.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-T 8.1.1 Take computer-adaptive timed multiple-choice or true/false tests.</p> <p>BMS-T 8.1.2 Take computer-based narrative tests.</p> <p>BMS-T 8.1.3 Take computer-based tests for topic remediation and support, and use feedback appropriately for self-assessment.</p>	<p>Discuss and demonstrate appropriate test-taking techniques</p> <p>Discuss and demonstrate computer-based narrative tests</p> <ul style="list-style-type: none"> ➤ Students prepare for the ISTEP by taking simulated tests <p>Discuss how test feedback can be used for self-improvement</p> <ul style="list-style-type: none"> ➤ Students interpret feedback given to them and discuss how they can improve 	<p>Evaluate each student's:</p> <p>Test-taking effectiveness on various types of tests—ISTEP preparation tests, computer-adaptive timed multiple-choice tests, T/F tests, and computer-based narrative tests</p>	<p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.5.2, 6.5.6, 6.5.7 E/LA—6.6.1, 6.6.2, 6.6.3, 6.6.4, 6.6.5 E/LA—7.4.2, 7.4.4, 7.4.7, 7.4.8, 7.4.9, 7.4.10 E/LA—7.5.6, 7.5.7 E/LA—7.6.1, 7.6.3, 7.6.5, 7.6.6, 7.6.7, 7.6.8 E/LA—8.4.2, 8.4.3, 8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.6 E/LA—8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.5, 8.6.6, 8.6.7</p>

Section 5: Introduction to Performance Expectations, Instructional Strategies, and Assessment Strategies for Career Exploration

The following items should be read prior to implementing the Instructional Strategies, Assessment Strategies, and Supplementary Resources presented on the following pages.

1. Four broad areas—Technology, Career Exploration, Personal Finance/Economics, and Business Management/Ownership—are included in the [Indiana Business and Information Technology Middle School Curriculum](#). An Indiana State Board of Education Rule states: Middle school students are to receive instruction every year in a minimum of two of the following practical arts program areas: Agriculture, Business and Information Technology, Family and Consumer Sciences, and Technology Education (Industrial Technology). Therefore, curriculum configurations are likely to differ from school to school based on the time allocated to practical arts program areas. Schools/teachers need to select content for the curriculum that will best serve their students’ needs and interests. Technological literacy, required by the No Child Left Behind legislation for all students by the completion of grade 8, personal financial literacy, and career exploration are of particular importance for all students. Also, the content in each of these areas provides concepts and applications that facilitate the development of competencies (e.g., reading comprehension, writing, math, critical thinking, and computer/technological literacy) required for success in all academic areas. The content selected can be integrated among any of the four broad areas in the [Indiana Business and Information Technology Middle School Curriculum](#) as well as with other curricular areas in the middle school.
2. **The Indiana Business and Information Technology Middle School Curriculum supports and reinforces many of the Indiana Academic Standards.** The Indiana Academic Standards listed pertain to grades 6-8 since these are the middle school grades for most Indiana school corporations. The items E/LA, M, S, and SS in the Supplementary Resources relate to the Indiana Academic Standards for English/Language Arts, Mathematics, Science, and Social Studies. The first numeral of the standard designates the grade level. It is recommended that teachers review these standards prior to implementing instructional strategies (Part II, Section 3).
3. Numbers used for Content Standards and Performance Expectations combine alphabetical letters and numbers as follows: (a) BMS-CE to designate the curriculum area; (b) BMS-CE 1 to designate the specific curriculum area category; (c) BMS-CE 1.1 to designate the Performance Expectation Content Standard; and (d) BMS-CE 1.1.1 to designate the Performance Expectations for the content standard.
4. The Performance Expectation categories are presented in a logical sequence. However, flexibility can be exercised in the order in which performance expectations within each category are taught. Teachers should select the proficiencies (Performance Expectations) they believe are most important given a limited amount of curriculum time. **All of the materials pertaining to the Indiana Business and Information Technology Middle School Curriculum (Part II) and keyboarding instruction (Part I) should be read prior to implementation of any part of the curriculum.**
5. Since middle school students are inquisitive and questioning, teachers must be cognizant of “teachable moments” and take advantage of them to teach relevant concepts.
6. Journal activities (journal writing examples can be found at http://www.education-world.com/a_curr/curr144.shtml) and discussion participation are recommended as Instructional Strategies for many Performance Expectations. They provide students with important speaking and writing skills that reinforce the English/Language Arts Indiana Academic Standards. It is recommended that journal activities be composed at the computer, be limited to a few paragraphs, and be saved to appropriate files. They should be evaluated for appropriate content and for quality of

writing (punctuation, grammar, tone, coherence, and conciseness). Discussion participation should be characterized by appropriate vocabulary, tone, grammar, clarity, and relevance to the topic. The evaluation of these activities should focus on students following criteria (that incorporate the Academic Standards) given by the teacher. A multi-page student project in journaling is included in Appendix D. Also, examples of rubrics for assessing journal writing and class discussion are included in Appendix D.

7. A “project-based” method for teaching middle school business technology is recommended because it uses authentic experiences. A project-based activity may encompass a variety of Proficiency Expectations across several curriculum topics. Use of the suggested projects listed in the Instructional Strategies and/or Supplementary Resources is critical to incorporate the Indiana Academic Standards. If other projects are substituted, they should address the Indiana Academic Standards listed.
8. It is assumed the teacher will create the “activity sheets,” “worksheets,” or “rubrics” referred to in the Instructional Strategies if not provided in this document. (Rubric Construction Guidelines are in Appendix D.) Ideas for creating activities may be obtained from textbook vendor materials available online.
9. Instruction and reinforcement of specific Performance Expectations, especially those pertaining to understanding terminology and concepts, should be distributed over the curriculum rather than concentrated in a short time frame.
10. As students use software applications, they should be monitored for good input techniques and effective use of the software.

Indiana Business and Information Technology Middle School Curriculum

Career Exploration Grid

BMS-CE 1 Self-Awareness

BMS-CE 1.1 Content Standard: Students assess personal skills, abilities and aptitudes, and personal strengths and weaknesses as they relate to career exploration.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-CE 1.1.1 Identify personal likes and dislikes, strengths and weaknesses, and individual talents.</p> <p>BMS-CE 1.1.2 Assess and analyze strengths and weaknesses relative to a variety of career areas involving data, people, and/or things.</p> <p>BMS-CE 1.1.3 Formulate and implement a plan to address identified weaknesses.</p>	<p>Instruct students to use appropriate Internet or computer software (see supplementary resources) to do a computer-generated self-analysis</p> <ul style="list-style-type: none"> ➤ Students prepare a personal profile that could relate to various occupational requirements ➤ Students place career materials in appropriate folders <p>Demonstrate and explain procedures for interpreting data from the self-analysis</p> <ul style="list-style-type: none"> ➤ Students compose a one-page explanation of what their profile means using appropriate word processing software <p>Discuss different types of weaknesses and how they could be corrected.</p> <ul style="list-style-type: none"> ➤ Students generate a table containing a prioritized list of their weaknesses and a list of short- and long-term ways of correcting them ➤ Students place appropriate materials in their student file (hard copy) and computer file for use in final project on career report 	<p>Evaluate each student's:</p> <p>Printout of complete self-analysis and personal profile from each student</p> <p>Printout of reflective one-page report (demonstrating a command of standard English)</p> <p>Printout of table of weaknesses and short- and long-term correction ideas</p> <p>Handwritten thank you note (demonstrating a command of standard English)</p> <p>Placement of career materials in appropriate folders</p>	<p>COIN³ (available through vocational education)</p> <p>http://www.driveofyourlife.org</p> <p>http://www.learnmoreindiana.org/@default/</p> <p>http://www.oalj.dol.gov/libdot.htm</p> <p>http://online.onetcenter.org/</p> <p>http://www.occupationalinfo.org/</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.2.4 E/LA—6.4.7 E/LA—6.6.1 E/LA—7.4.4, 7.4.7 E/LA—7.5.5, 7.5.6 E/LA—7.6.5, 7.6.8 E/LA—8.4.4, 8.4.6 E/LA—8.6.5, 8.6.6, 8.6.7</p>

BMS-CE 2 Career Research

BMS-CE 2.1 Content Standard: Students use print, electronic, and oral career resources to develop a foundation of personal career data.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-CE 2.1.1 Identify and describe careers of family members and/or friends.</p> <p>BMS-CE 2.1.2 Describe and give examples of career clusters; develop an awareness of occupational opportunities; recognize the advantages of early career exploration and planning.</p> <p>BMS-CE 2.1.3 List and describe the contributions of various types of occupations in the community (e.g., banker, realtor, police officer, teacher, business manager, and firefighter) and describe career opportunities in these professional fields.</p>	<p>Instruct students to develop a grid (handwritten) for collecting/organizing information pertaining to careers of family members and/or friends</p> <ul style="list-style-type: none"> ➤ Students create a grid of at least four individuals engaged in different jobs and describe the jobs <p>Discuss career clusters and occupational opportunities in each</p> <ul style="list-style-type: none"> ➤ Students work in teams and draw an “Umbrella” representing each career cluster and list possible careers for each cluster <p>Display the “Umbrellas”</p> <ul style="list-style-type: none"> ➤ Students discuss their umbrellas with the class <p>Discuss requirements for pursuing various career clusters</p> <ul style="list-style-type: none"> ➤ Students work in teams and generate a list of general requirements for one or more career clusters ➤ Students discuss requirements for career cluster(s) <p>Instruct students on how to search on the Internet and prepare an Internet Project Sheet</p> <ul style="list-style-type: none"> ➤ Students do a search in groups of two on local area (counties and 	<p>Evaluate each student's:</p> <p>Grid (quality of handwriting emphasized)</p> <p>Participation in cooperative learning “Umbrellas”</p> <p>Participation in discussion</p> <p>List of requirements</p> <p>Participation in discussion</p> <p>Internet Project Sheet</p>	<p>Class Discussion Assessment (Appendix D)</p> <p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
	<p>cities) finding data pertaining to occupations available</p> <p>Discuss the occupations students investigated and invite (on a rotation basis) local community representatives to class</p> <ul style="list-style-type: none"> ➤ Students compile a list of possible occupational guest speakers, invite occupational guest speakers; greet them; and write a thank you note ➤ Students place appropriate materials in their student file (hard copy) and computer file for use in final project on career report 	<p>List of possible community guest speakers and interaction with them</p> <p>Thank you notes (demonstrating a command of standard English)</p> <p>Materials and files</p>	
<p>BMS-CE 2.1.4 Use a variety of research tools (e.g., computer-assisted programs, newspapers, books, professional and trade associations, informational interviews, job shadowing, career fairs, field trips, speakers, case studies, community service, and the Internet) in the career exploration process.</p> <p>BMS-CE 2.1.5 Use a questionnaire to guide a career exploration interview to determine educational requirements, starting salaries, and career ladder opportunities.</p>	<p>Discuss a variety of research tools and procedures for attaining information about careers</p> <ul style="list-style-type: none"> ➤ Students use different research tools to explore careers ➤ Students discuss their findings pertaining to various careers ➤ Students perform a community service project ➤ Students prepare an interview sheet and conduct informational interviews ➤ Students perform a job shadowing experience ➤ Students place materials in appropriate files and folders <p>Discuss and present a questionnaire/ interview guide</p> <ul style="list-style-type: none"> ➤ Students use the guide to interview an employer/employee in the community ➤ Students prepare a thank you note to send to interviewee 	<p>Evaluate each student's:</p> <p>Use of Internet search procedures</p> <p>Participation in discussion</p> <p>Community service project (evaluation of student project completed by community service host)</p> <p>Interview sheet (use rubric)</p> <p>Job shadowing (use rubric)</p> <p>Materials and files</p> <p>Information obtained in interview</p> <p>Handwritten thank you note (demonstrating a command of standard English)</p>	<p>Rubric Guidelines (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-CE 2.1.6 Explain the concept of transferable skills within and between career clusters.</p> <p>BMS-CE 2.1.7 Evaluate several occupational interests based on various criteria (e.g., educational requirements, starting salaries, trends, opportunities, and career ladders).</p> <p>BMS-CE 2.1.8 Use available resources to research career opportunities and trends; prepare a research report.</p>	<p>Define transferable skills</p> <ul style="list-style-type: none"> ➤ Students classify skills for specific career cluster <p>Identify transferable skills within and between career clusters</p> <ul style="list-style-type: none"> ➤ Students identify and discuss skills common to two or more career clusters <p>Students place appropriate materials in their student file (hard copy) and computer file for use in final project—10-12 page career research report</p> <p>Create a grid of occupational interests criteria</p> <ul style="list-style-type: none"> ➤ Students identify their career areas of interest ➤ Students research occupational interests criteria ➤ Students key a two-page report on career interests using the correct formatting for a report ➤ Students place career materials in appropriate folders 	<p>Participation in Discussion</p> <p>Materials and files</p> <p>Two-page report on one career interest using the correct formatting for a report (demonstrating a command of standard English) (place in student file and computer file for use in final project)</p>	<p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-CE 2.1.9 Describe the impact of the global economy on jobs and careers.</p> <p>BMS-CE 2.1.10 Recognize products associated with other countries and the</p>	<p>Find a current article pertaining to the global economy and discuss how it relates to jobs and careers</p> <ul style="list-style-type: none"> ➤ Students read the article and discuss in their own words the issues pertaining to jobs and careers <p>Create a worksheet for students to use in the activity (products, countries,</p>	<p>Evaluate each student's:</p> <p>Participation in discussion</p>	<p>Class Discussion Assessment (Appendix D)</p>

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>occupations related to them.</p> <p>BMS-CE 2.1.11 Relate career interests to opportunities in the global economy.</p> <p>BMS-CE 2.1.12 Describe the culture of a particular country and discuss the available career choices in that culture.</p>	<p>occupations, etc.)</p> <ul style="list-style-type: none"> ➤ Students in teams will look around the room and find products that are made outside the United States ➤ Students discuss their findings <p>Use guest speakers (foreign language instructors, exchange students, etc.) to present career opportunities outside the USA.</p> <ul style="list-style-type: none"> ➤ Students relate international opportunities to their career interests ➤ Students prepare a thank you note to send to interviewee <p>Select three or four countries (e.g., Japan, China, Mexico, and Germany) and appropriate internet sites and assign one country to each student</p> <ul style="list-style-type: none"> ➤ Students complete an Internet search on the culture of the assigned country based on the Internet sites provided ➤ Students write a three-paragraph response pertaining to the culture of the country and careers available in the country 	<p>Worksheet</p> <p>Participation in discussion</p> <p>Handwritten thank you note (demonstrating a command of standard English)</p> <p>Paragraphs (demonstrating a command of standard English) on the cultures and careers selected on the assigned country</p>	<p>Class Discussion Assessment (Appendix D)</p> <p><u>Indiana Academic Standards Addressed:</u> E/LA—6.2.4 E/LA—6.4.3, 6.4.5, 6.4.6, 6.4.7 E/LA—6.5.6 E/LA—6.6.1, 6.6.3, 6.6.4 E/LA—7.4.4, 7.4.7 E/LA—7.5.5, 7.5.6 E/LA—7.6.5, 7.6.6, 7.6.8 E/LA—8.4.2, 8.4.4, 8.4.6 E/LA—8.5.6 E/LA—8.6.1, 8.6.4, 8.6.5, 8.6.6, 8.6.7</p>

BMS-CE 3 Workplace Expectations and School-To-Career Transition

BMS-CE 3.1 Content Standard: Students relate the importance of workplace expectations to career development.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-CE 3.1.1 Discuss the personal qualities and ethical and/or responsible behaviors related to school, home, and employability (e.g., promptness, ability to get along with others, a positive attitude, confidentiality, tolerance, flexibility, dependability, honesty, integrity, willingness to ask questions, respect for diversity, patience, cooperation, respect for personal property, completion of homework assignments, and communication skills); and describe how these qualities and behaviors influence the feelings and actions of others.</p>	<p>Create a worksheet/table of personal qualities and ethical and/or responsible behaviors you want your students to exhibit at school or home</p> <ul style="list-style-type: none"> ➤ Students write and save journal entries on the computer at the beginning of each period for approximately 5 minutes (intro activity) pertaining to which of the qualities and/or behaviors they have exhibited the day before at home or at school <p>Discuss personal qualities and ethical and/or responsible behaviors</p> <ul style="list-style-type: none"> ➤ Students generate a list of skills they use successfully and a list of skills they need to improve ➤ Students discuss how personal qualities and behaviors influence the feelings and actions of others <p><i>Students place appropriate materials in their student file (hard copy) and computer file for use in final project—10-12 page career research report</i></p>	<p>Evaluate each student's:</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p> <p>Skills analysis</p> <p>Participation in discussion</p> <p>Materials and files</p>	<p>Journal Entry Assessment (Appendix D)</p> <p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-CE 3.1.2 Demonstrate proper etiquette for meeting and greeting people and appropriate social skills for school and the workplace.</p> <p>BMS-CE 3.1.3 Explain the importance of personal appearance, grooming, and other school and</p>	<p>Discuss and demonstrate the importance of appropriate social skills, including shaking hands, introducing oneself and others, etc.</p> <ul style="list-style-type: none"> ➤ Students practice shaking hands and introducing one another to a variety of people in various scenarios (cooperative learning) 	<p>Evaluate each student's:</p> <p>Participation in cooperative learning—jigsaw (use appropriate rubric)</p> <p>Participation in role-play scenarios</p>	

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
workplace expectations.	<p>Discuss relationship between personal appearance, grooming, conduct, work performance, casual days, etc.</p> <ul style="list-style-type: none"> ➤ Students observe personal appearance of employees when visiting a local business ➤ Student teams discuss dress code issues at school then write a dress code with enumerated items and supporting rationale ➤ Students discuss variations in employer dress codes 	<p>Effectiveness of handshakes</p> <p>Introductions (use appropriate rubric)</p> <p>Dress code project (use appropriate rubric)</p>	
<p>BMS-CE 3.1.4 Discuss the importance of a job well done to personal satisfaction and to the home and business communities.</p>	<p>Discuss the importance of personal standards in completing work assignments</p> <ul style="list-style-type: none"> ➤ Students read and discuss case studies describing appropriate and inappropriate job performances ➤ Students discuss personal experiences and observations pertaining to job and school performance 	<p>Evaluate each student's:</p> <p>Participation in discussion</p>	<p>Dry Cleaning Employee Scenario (Appendix I)</p> <p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-CE 3.1.5 Discuss the importance of being able to work productively with people who are different from oneself.</p> <p>BMS-CE 3.1.6 Describe how physical, intellectual, and cultural diversity can strengthen school and workplace effectiveness.</p> <p>BMS-CE 3.1.7 Identify the changing roles of men and women in the</p>	<p>Define and discuss diversity in the community</p> <ul style="list-style-type: none"> ➤ Students generate a list of places where they have observed diversity and express their feelings about diversity <p>Show a video on diversity</p> <ul style="list-style-type: none"> ➤ Students take notes on the video ➤ Students write a paragraph on the importance of working productively with people who are different from themselves <p>Create diversity activities to demonstrate diversity, changing roles</p>	<p>Evaluate each student's:</p> <p>List of where diversity is seen</p> <p>Notes on video</p> <p>Paragraphs (demonstrating a command of standard English) incorporating discussion and video</p>	

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>workplace and the family; discuss the advantages and disadvantages of entering nontraditional occupations.</p> <p>BMS-CE 3.1.8 Identify stereotypes, biases, and discriminatory behaviors that may impact opportunities for women and men in certain occupations.</p> <p>BMS-CE 3.1.9 Describe different cultural behaviors and expectations and discuss the effects of personal beliefs, attitudes, and cultural practices on decision making.</p>	<p>of women and men, stereotypes, biases, discriminatory behaviors, etc. (e.g., use a variety of colored plastic eggs with the same piece of candy inside and emphasize how the color of the egg did not affect the quality of the content)</p> <ul style="list-style-type: none"> ➤ Students participate in a diversity activity ➤ Students role play to demonstrate how personal beliefs, attitudes, and cultural practices have an impact on decision making ➤ Students debate on cultural issues (e.g. should all workers be required to speak the same language) <p>Define an American</p> <ul style="list-style-type: none"> ➤ Students search the Internet for the ethnic background of a well-known American icon (e.g., Tiger Woods) <p>Discuss how physical, intellectual, and cultural diversity can strengthen school and workplaces</p> <p>Provide student with an information worksheet on points to incorporate in the written report</p> <ul style="list-style-type: none"> ➤ Students write a short keyed report on what diversity means to them after assimilating all the diversity discussions 	<p>Participation in debate on cultural issues (use an appropriate rubric)</p> <p>Report (demonstrating a command of standard English), which shows the assimilation of understanding diversity issues</p>	
<p>BMS-CE 3.1.10 Demonstrate the steps involved in handling conflict.</p>	<p>Define conflict and discuss related issues, including the steps involved in resolving conflicts</p> <ul style="list-style-type: none"> ➤ Students role play conflicts as they relate to employer/employee, teacher/ student, parent/child, etc. (students pick topics out of box) 	<p><u>Evaluate each student's:</u></p> <p>Participation in role play activity</p>	

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-CE 3.1.11 Demonstrate the steps involved in dealing with stress.</p>	<p>Define stress and discuss related issues, including the steps involved in resolving stress</p> <ul style="list-style-type: none"> ➤ Students participate in a series of activities that create stress ➤ Students identify, analyze, and discuss stress as it relates to the home and school environments 	<p>Participation in stress activity</p> <p>Participation in discussion</p> <p>Identify steps for handling conflict and stress for home and school situations</p>	<p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-CE 3.1.12 Discuss how environmental barriers may affect the physically challenged.</p>	<p>Define the meaning of physically challenged and environmental barriers</p> <ul style="list-style-type: none"> ➤ Students role play various physical challenges and use the appropriate equipment needed for classroom participation ➤ Students participate in an activity to create an awareness of the consequences of physical challenges <p>Invite physically challenged students to discuss with the class their insight and experiences</p>	<p>Evaluate each student's:</p> <p>Participation in role play and other activities that show how environmental barriers affect the physically challenged</p>	
<p>BMS-CE 3.1.13 Demonstrate good listening skills and describe their importance to school and workplace expectations.</p> <p>BMS-CE 3.1.14 Express thoughts and ideas succinctly and correctly using various forms of communication (e.g., oral, written, and nonverbal).</p>	<p>Demonstrate the importance of good listening skills</p> <ul style="list-style-type: none"> ➤ Students participate in a listening activity which requires good listening for correct performance <p>Discuss how to listen effectively</p> <ul style="list-style-type: none"> ➤ Students discuss how effective listening skills relate to meeting school and workplace expectations <p>Compare and contrast examples of ideas expressed in a wordy manner and those expressed in a succinct manner</p> <ul style="list-style-type: none"> ➤ Students revise wordy paragraphs 	<p>Evaluate each student's:</p> <p>Participation in listening activity</p> <p>Participation in discussion</p> <p>Revised materials</p>	<p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
	<p>to make them concise</p> <ul style="list-style-type: none"> ➤ Students discuss the revised materials <p>Discuss the forms of communications and the basis on which to make decisions about which form to use (e.g. discuss when to give oral assignments or to use written format)</p> <ul style="list-style-type: none"> ➤ Students determine the appropriate form of communications for various situations <p>Define and demonstrate forms of nonverbal communications</p> <ul style="list-style-type: none"> ➤ Students discuss the pros and cons of various kinds of nonverbal communications for specific situations (e.g. folding arms across the chest as someone speaks) 	<p>Ability to select the correct form of communications for given situations</p> <p>Quiz over nonverbal communications</p>	
<p>BMS-CE 3.1.15 Identify ways to use feedback to improve workplace skills.</p> <p>BMS-CE 3.1.16 Explain the importance of planning; identify and implement steps for planning school projects.</p>	<p>Explain the meaning of feedback and relate it to workplace skills</p> <ul style="list-style-type: none"> ➤ Students identify their own skills that need improvement and discuss the kind of feedback needed for them to improve ➤ Students identify the methods that could be used to provide effective feedback <p>Explain the importance of planning and identify the steps involved in making and implementing plans</p> <ul style="list-style-type: none"> ➤ Students apply the steps for planning to a school project (this procedure will be used in the preparation of a report for the career exploration unit) 	<p>Evaluate each student's:</p> <p>Ability to identify areas needing improvement and the feedback methods that would aid improvement</p> <p>Plans for completing a school project</p>	<p><u>Indiana Academic Standards Address:</u></p> <p>E/LA—6.4.2, 6.4.5, 6.4.7, 6.4.8, 6.4.9 E/LA—6.5.6 E/LA—6.6.1, 6.6.2, 6.6.4, 6.6.5 E/LA—7.4.2, 7.4.4, 7.4.7, 7.4.8, 7.4.9, 7.4.10 E/LA—7.5.6 E/LA—7.6.1, 7.6.3, 7.6.5, 7.6.6, 7.6.7, 7.6.8 E/LA—8.4.7, 8.4.8 E/LA—8.5.6 E/LA—8.6.1, 8.6.5, 8.6.6, 8.6.7</p>

BMS-CE 4 Career Strategy

BMS-CE 4.1 Content Standard: Students apply knowledge gained from individual assessment to a comprehensive set of goals and an individual career plan.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-CE 4.1.1 Describe how the skills and knowledge acquired in school relate to various occupations.</p> <p>BMS-CE 4.1.2 Describe the relationship of assessed interests, aptitudes, and abilities to academic and occupational skills.</p> <p>BMS-CE 4.1.3 Apply career goals, skills, and interests to the selection of high school courses.</p> <p>BMS-CE 4.1.4 Explain how career decisions impact education, leisure activities, lifestyle, and other major life decisions.</p> <p>BMS-CE 4.1.5 Discuss methods of “bouncing back” after a setback or failure.</p>	<p>Group students by career goals, interests, etc., and identify and discuss occupations of interest to student groups</p> <ul style="list-style-type: none"> ➤ Students identify skills and knowledge requisite for success in those occupations ➤ Students identify personal aptitudes, interests, and abilities requisite for success in those occupations ➤ Students identify academic areas related to the skills and knowledge and personal qualities identified above ➤ Students identify courses of study available for their interests ➤ Students identify major life decisions that are closely related to education and occupation ➤ Student groups share an oral discussion with the entire class pertaining to their area of interest ➤ Students place career materials in appropriate folders <p>Discuss leisure activities and the tie-in between leisure and career goals</p> <ul style="list-style-type: none"> ➤ Students complete a worksheet about leisure-time activities <p>Case study dealing with a famous person who bounced back after failure</p>	<p>Evaluate each student's:</p> <p>Identification of how education and occupations are related to personal interests, aptitudes, abilities, and achievements</p> <p><i>(Through discussion determine whether students have adequate background to proceed with career planning activities)</i></p> <p>Participation in discussion</p> <p>Leisure-time activity worksheet</p>	<p>Class Discussion Assessment (Appendix D)</p>

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> (Follow hyperlinks at end of document for full text of Academic Standards)
	<ul style="list-style-type: none"> ➤ Students read case study, discuss how the individual “bounced” back, and the implications for themselves ➤ Students write a journal entry about how they have had failures and how they have overcome obstacles 	Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.	Journal Entry Assessment (Appendix D)
<p>BMS-CE 4.1.6 Identify personal goals that may be achieved through a combination of career, community, social, and family roles.</p> <p>BMS-CE 4.1.7 Explain the importance of career planning; apply steps in the decision-making process to establish short- and long-term career goals.</p> <p>BMS-CE 4.1.8 Evaluate consequences of decisions pertaining to short- and long-term career goals.</p> <p>BMS-CE 4.1.9 Identify obstacles to achieving career goals.</p> <p>BMS-CE 4.1.10 Describe how career development is a continuous process involving a series of choices.</p> <p>BMS-CE 4.1.11 Determine how the expectations of others affect career goals.</p>	<p>Discuss personal goals as they relate to career, community, social, and family roles</p> <ul style="list-style-type: none"> ➤ Students complete a worksheet on personal goals reflecting on careers, community, social, and family roles <p>Discuss the importance of career planning and the steps involved in establishing short- and long-term goals</p> <ul style="list-style-type: none"> ➤ Student develop their own short- and long-term career goals ➤ Students develop a list of possible obstacles to attaining their short- and long-term goals, and how they might overcome them <p>Discuss the expectations of others and how they affect goals</p> <ul style="list-style-type: none"> ➤ Students generate a list of expectations they believe others have of them 	<p>Evaluate each student's:</p> <p>Worksheet</p> <p>Career goals</p> <p>List of obstacles and possible solutions</p> <p>List of expectations</p>	

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-CE 4.1.12 Create a career plan that includes the investigation of career clusters, self-assessment, research, career alternatives, and high school course options.</p>	<p>Discuss the component parts of the career plan with class</p> <ul style="list-style-type: none"> ➤ Students use notebook/electronic files and begin analyzing ➤ Students prepare 10-12 page Career Research Report <p>Individual meetings with each student</p> <ul style="list-style-type: none"> ➤ Create their own tentative career plan prior to meeting with teacher/counselor ➤ Students meet one-on-one with the teacher/counselor to create a tentative 4-year for their high school curricula 	<p>Evaluate each student's:</p> <p>Report (demonstrating a command of standard English)</p> <p>Tentative career plan—place in student file and computer file</p> <p>Tentative high school curriculum—place in student file and computer file</p>	<p>Career Research Report Project (Appendix I)</p> <p>Career Research Report Assessment Rubric (Appendix I)</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.4.1, 6.4.7 E/LA—6.6.1, 6.6.4 E/LA—7.6.5, 7.6.8 E/LA—8.6.5, 8.6.6, 8.6.7</p>

BMS-CE 5 Lifelong Learning

BMS-CE 5.1 Content Standard: Students relate the importance of lifelong learning to career success and recognize that each of the following proficiencies must be continually updated.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-CE 5.1.1 Develop an awareness of changing and emerging jobs and careers.</p> <p>BMS-CE 5.1.2 Relate various levels of education to careers.</p> <p>BMS-CE 5.1.3 Relate the importance of education to meeting identified goals.</p>	<p>Provide guidance for students to investigate on the Internet various job trends, new and emerging careers, etc.</p> <ul style="list-style-type: none"> ➤ Students will investigate job trends on the Internet ➤ Students will look at the Occupational Quarterly and other relevant websites for information ➤ Student groups generate a time capsule of possible careers they are interested in or may be in the future ➤ Write a short report on emerging jobs ➤ Students place materials in appropriate folders 	<p>Evaluate each student's:</p> <p>Internet Project Sheets</p> <p>Time capsule documents</p> <p>Report (demonstrating a command of standard English)</p>	
<p>BMS-CE 5.1.4 Analyze school/work evaluations to assess strengths, weaknesses, and areas for improvement.</p> <p>BMS-CE 5.1.5 Describe the importance of effective study habits, test-taking skills, and learning skills.</p>	<p>Provide an overview of the importance of continuing to learn as part of continuing success (e.g., teacher's own experiences)</p> <ul style="list-style-type: none"> ➤ Students write a journal entry that analyzes schoolwork evaluations with regard to strengths and weaknesses ➤ Students write a personal description of the personal attributes they would like to have as adults <p>Show how study habits, test taking and learning skills relate to life-long learning</p> <ul style="list-style-type: none"> ➤ Students view a video on effective study habits/test-taking/learning 	<p>Evaluate each student's:</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p> <p>Personal descriptions of their personal attributes (demonstrating a command of standard English)</p>	<p>Journal Entry Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
	<p>skills</p> <ul style="list-style-type: none"> ➤ Students take notes on video materials ➤ Students write a journal entry about the importance of study habits, test-taking, and learning skills as they relate to them personally 	<p>Notes</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p>	<p>Journal Entry Assessment (Appendix D)</p>
<p>BMS-CE 5.1.6 Describe how good health, nutrition, and physical fitness habits contribute to career success.</p>	<p>Discusses examples of the impact of health, nutrition, and physical fitness on how people act</p> <ul style="list-style-type: none"> ➤ Students in groups discuss how health relates to career success (e.g., illness, absenteeism, and energy) 	<p>Evaluate each student's:</p> <p>Participation in discussion</p>	<p>Class Discussion Assessment (Appendix D)</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.2.1 E/LA—6.4.5, 6.4.6, 6.4.7, 6.4.8, 6.4.9, 6.4.10 E/LA—6.5.6 E/LA—6.6.1, 6.6.4 E/LA—7.2.2 E/LA—7.4.4 E/LA—7.6.5, 7.6.7, 7.6.8 E/LA—8.2.5 E/LA—8.4.4, 8.4.5, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.6 E/LA—8.6.1, 8.6.5, 8.6.6, 8.6.7</p>

Section 6: Introduction to Performance Expectations, Instructional Strategies, and Assessment Strategies for Personal Finance/Economics

The following items should be read prior to implementing the Instructional Strategies, Assessment Strategies, and Supplementary Resources presented on the following pages.

1. Four broad areas—Technology, Career Exploration, Personal Finance/Economics, and Business Management/Ownership—are included in the Indiana Business and Information Technology Middle School Curriculum. An Indiana State Board of Education Rule states: Middle school students are to receive instruction every year in a minimum of two of the following practical arts program areas: Agriculture, Business and Information Technology, Family and Consumer Sciences, and Technology (Industrial Technology) Education. Therefore, curriculum configurations are likely to differ from school to school based on the time allocated to practical arts program areas. Schools/teachers need to select content for the curriculum that will best serve their students’ needs and interests. Technological literacy, required by the No Child Left Behind legislation for all students by the completion of grade 8, personal financial literacy, and career exploration are of particular importance for all students. Also, the content in each of these areas provides concepts and applications that facilitate the development of competencies (e.g., reading comprehension, writing, math, critical thinking, and computer/technological literacy) required for success in all academic areas. The content selected can be integrated among any of the four broad areas in the [Indiana Business and Information Technology Middle School Curriculum](#) as well as with other curricular areas in the middle school.
2. **The Indiana Middle School Business and Information Technology Education Curriculum supports and reinforces many of the Indiana Academic Standards.** The Indiana Academic Standards listed pertain to grades 6-8 since these are the middle school grades for most Indiana school corporations. The items E/LA, M, S, and SS in the Supplementary Resources relate to the Indiana Academic Standards for English/Language Arts, Mathematics, Science, and Social Studies. The first numeral of the standard designates the grade level. It is recommended that teachers review these standards prior to implementing instructional strategies (Part II, Section 3).
3. Numbers used for Content Standards and Performance Expectations combine alphabetical letters and a number as follows: (a) BMS-PFE to designate the curriculum area; (b) BMS-PFE 1 to designate the specific curriculum area category (c) BMS-PFE 1.1 to designate the Performance Expectation Content Standard; and (d) BMS-PFE 1.1.1 to designate the Performance Expectations for the content standard.
4. The Performance Expectation categories are presented in a logical sequence. However, flexibility can be exercised in the order in which performance expectations within each category are taught. Teachers should select the proficiencies (Performance Expectations) they believe are most important given a limited amount of curriculum time **All of the materials pertaining to the Indiana Business and Information Technology Middle School Curriculum (Part II) and keyboarding instruction (Part I) should be read prior to implementation of any of the material.**
5. Since middle school students are inquisitive and questioning, teachers must be cognizant of “teachable moments” and take advantage of them to teach relevant concepts.
6. Journal activities (journal writing examples can be found at http://www.education-world.com/a_curr/curr144.shtml) and discussion participation are recommended as Instructional Strategies for many Performance Expectations. They provide students with important speaking and writing skills that reinforce the English/Language Arts Indiana Academic Standards. It is recommended that journal activities be composed at the computer, be limited to a few paragraphs, and

be saved to appropriate files. They should be evaluated for appropriate content and for quality of writing (punctuation, grammar, tone, coherence, and conciseness). Discussion participation should be characterized by appropriate vocabulary, tone, grammar, clarity, and relevance to the topic. The evaluation of these activities should focus on students following criteria (that incorporate the Academic Standards) given by the teacher. A multi-page student project in journaling is included in Appendix D. Also, examples of rubrics for assessing journal writing and class discussion are included in Appendix D.

7. A “project-based” method for teaching middle school business technology is recommended because it uses authentic experiences. A project-based activity may encompass a variety of Proficiency Expectations across several curriculum topics. Use of the suggested projects listed in the Instructional Strategies and/or Supplementary Resources is critical to incorporate the Indiana Academic Standards. If other projects are substituted, they should address the Indiana Academic Standards listed.
8. It is assumed the teacher will create the “activity sheets,” “worksheets,” or “rubrics” referred to in the Instructional Strategies if not provided in this document. (Rubric Construction Guidelines are in Appendix D.) Ideas for creating activities may be obtained from textbook vendor materials available online.
9. Instruction and reinforcement of specific Performance Expectations, especially those pertaining to understanding terminology and concepts, should be distributed over the curriculum rather than concentrated in a short time frame.
10. As students use software applications, they should be monitored for good input techniques (keyboarding, speech, or other) and effective use of the software.

Indiana Business and Information Technology Middle School Curriculum

Personal Finance/Economics Grid

BMS-PFE 1 Personal Finance/Economic Decision Making

BMS-PFE 1.1 Content Standard: Students use a rational decision-making process that recognizes opportunity costs and trade-offs involved in making choices.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-PFE 1.1.1 Define and give examples of economic wants and needs.</p> <p>BMS-PFE 1.1.2 Apply opportunity costs and trade-offs to personal decision making.</p> <p>BMS-PFE 1.1.3 Recognize and assume responsibility for the consequences of economic choices.</p>	<p>Discuss and give examples to distinguish between economic wants and needs and to demonstrate how they may overlap</p> <p>Assign students to teams and have each team create a poster that focuses on either economic wants or needs</p> <ul style="list-style-type: none"> ➤ Students cut pictures from magazines and create posters of economic wants or needs ➤ Each team of students displays their poster to the class and explains why each of the items on the poster fits the category (needs or wants) assigned to their team <p>Discuss and give examples to show how personal decisions sometimes involve giving up one thing in order to have something else (a trade-off)</p> <p>Explain that opportunity cost is the value of the alternative that was given up when another choice was made</p> <ul style="list-style-type: none"> ➤ Students decide how to spend \$50 when confronted with the choices of buying a \$35 sweater, a \$50 computer game, a \$15 shirt, saving for a \$35 concert ticket, buying a 	<p>Evaluate each student's:</p> <p>Poster constructed according to rubric given to students</p> <p>Participation in discussion</p>	<p><u>Project Possibilities:</u> Computer Purchase (Appendix I) LemonadeStand (Appendix I)</p> <p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-PFE 1.1.4 Apply the steps in a rational decision-making process to a situation involving an individual making an economic decision.</p>	<p>\$45 sleeping bag, (and other choices that appeal to students)</p> <ul style="list-style-type: none"> ➤ Students identify the opportunity costs associated with his/her decision <p>Discuss the steps in decision making: (1) determine the problem (2) identify the choices/alternatives (3) evaluate the advantages and disadvantages of each choice/alternative (4) select a choice/alternative (5) act on the decision made (6) evaluate and modify the decision as conditions change</p> <ul style="list-style-type: none"> ➤ Students brainstorm about the part-time money-making activities they have (e.g., babysitting) or part-time jobs they could have when they are in high school ➤ Students use the steps in decision making to identify which of these activities/jobs would be best for them ➤ Students share their decisions and explain their thinking for steps one through four of the decision-making process 	<p>Identification of opportunity costs in trade-off exercise</p> <p>Participation in discussion</p> <p>Quiz over the decision-making process</p>	<p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-PFE 1.1.5 Explain how types and availability of jobs are determined primarily by consumer demand in the market-oriented economy of the United States.</p> <p>BMS-PFE 1.1.6 Identify various ways people earn a living.</p>	<p>Discuss occupations, including entrepreneurship, students might want to pursue as adults</p> <p>Elaborate on how career choices relate to education, skills, economic conditions, and personal qualities</p> <p>Discuss the relationship of income to career choices and explain the concept of purchasing power</p> <p>Invite a business person to class to discuss factors related to career</p>	<p>Evaluate each student's:</p>	<p>See Section 5, Career Exploration</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-PFE 1.1.7 Discuss how personal choices, experiences, technology, education/training, and other factors correlate with earning a living.</p> <p>BMS-PFE 1.1.8 Analyze the characteristics and requirements of occupations of interest, including entrepreneurial opportunities.</p>	<p>choices</p> <ul style="list-style-type: none"> ➤ Students select a career alternative, including entrepreneurship, and conduct an internet search and use other sources (including notes from the business person's presentation) to determine the education, etc., needed to be successful in that career and the potential income associated with that career ➤ Students write a short report on their career findings—have them identify the educational, skill, and personal qualities needed for each career ➤ Students use their reports to identify and discuss basic personal qualities important for virtually all career choices 	<p>Career Findings Report (demonstrating a command of standard English) based on teacher-created rubric</p> <p>Participation in discussion of career findings report</p>	<p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-PFE 1.1.9 Differentiate between earned and unearned income; identify sources of unearned income.</p> <p>BMS-PFE 1.1.10 Distinguish between income and wealth.</p>	<p>Discuss and give examples of the difference between earned and unearned income (Any income that comes from investments and other sources unrelated to employment services is unearned)</p> <p>Create a Payroll spreadsheet to aid explanation</p> <p>(Examples of unearned income include interest from a savings account, bond interest, government transfer payments, tips, and dividends from stock)</p> <ul style="list-style-type: none"> ➤ Students give examples of ways earned and unearned income could be related <p>Introduce the topic of wealth</p> <ul style="list-style-type: none"> ➤ Students do an Internet search for the wealthiest people in the U.S. 	<p>Evaluate each student's:</p> <p>Participation in discussion</p> <p>Slide presentation of the wealthiest people in America based on teacher-created rubric</p>	<p>Class Discussion Assessment (Appendix D)</p> <p>Oprah video pertaining to wealthy young people and their parents</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-PFE 1.1.11 Differentiate between gross and net income.</p> <p>BMS-PFE 1.1.12 Explain how insurance protects income.</p>	<ul style="list-style-type: none"> ➤ Students prepare a 7-slide presentation on one of the wealthiest people in America ➤ Students brainstorm about the meaning of “wealth” and how it relates to income ➤ Students discuss the responsibilities of wealth and identify contributions to society made by the wealthy <p>Discuss the meanings of gross income and net income</p> <ul style="list-style-type: none"> ➤ Students solve problems involving computing net income (include examples of voluntary and required payroll deductions) Use of spreadsheet recommended <p>Explain the concept of insurance</p> <ul style="list-style-type: none"> ➤ Students determine how John Jones can use insurance to “protect” his income; he earns \$50,000 a year and has a wife and three children in grades 3, 5, and 8. Help students use the steps in decision making for this situation 	<p>Participation in discussion</p> <p>Problem Solutions</p> <p>Quiz over computing net income</p> <p>Participation in activity</p>	<p>http://www.forbes.com/2004/02/25/bill04land.html</p> <p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-PFE 1.1.13 Explain the concept of taxes and how taxes affect purchasing power; identify the types of taxes individuals commonly incur.</p>	<p>Discuss the concept of taxes and why we are required to pay taxes and how taxes affect purchasing power</p> <ul style="list-style-type: none"> ➤ Students write a journal entry on their concept of the purpose of taxes ➤ Student teams prepare posters illustrating “our taxes at work” (provide magazines as resources) ➤ Students share the items on their posters and discuss whether it would be better for any of the things government provides to be provided by private business; what 	<p>Evaluate each student’s:</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc. Poster based on teacher-created rubric</p> <p>Participation in discussion</p>	<p>Journal Entry Assessment (Appendix D)</p> <p><u>Indiana Academic Standards Addressed:</u> E/LA—6.2.1 E/LA—6.4.5, 6.4.6, 6.4.7, 6.4.8, 6.4.9, 6.4.10 E/LA—6.5.6 E/LA—6.6.1, 6.6.4 E/LA—7.4.4, 7.4.5, 7.4.6, 7.4.8, 7.4.9,</p>

BMS-PFE 2 Money Management

BMS-PFE 2.1 Content Standard: Students analyze various forms of income and the factors related to income management.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-PFE 2.1.1 Identify ways in which individuals and families obtain financial resources; explain the role of assets in borrowing.</p> <p>BMS-PFE 2.1.2 Illustrate ways people are financially responsible; explain how good money management helps avoid bankruptcy.</p> <p>BMS-PFE 2.1.3 Analyze the present and future consequences of personal financial choices.</p> <p>BMS-PFE 2.1.4 Define fixed, variable, and periodic expenses.</p> <p>BMS-PFE 2.1.5 Explain the concept of discretionary income.</p> <p>BMS-PFE 2.1.6 Explain the role of insurance in money management.</p> <p>BMS-PFE 2.1.7 Construct and use a personal budget (spending/savings plan), and evaluate it according to short-, intermediate-, and long-term goals</p>	<p>Discuss sources of financial resources for spending and elaborate on paying for basic needs, saving for future needs, and using discretionary income; note that financial resources are limited and that personal responsibility requires using a decision-making process to make personal financial choices; include the role of insurance in making financial decisions; explain the purpose of a budget and construction a budget</p> <ul style="list-style-type: none"> ➤ Students, in teams, are given different family situations for which the teacher specifies the size of the family, the source and amount of income, fixed and variable periodic expenses and family goals. Each team of students should construct a budget for the situation ➤ Students use spreadsheets to modify budgets by asking “what-if” questions 	<p>Evaluate each student’s:</p> <p>Family budget (teacher-created rubric)</p> <p>Spreadsheet (teacher-created rubric)</p>	<p>Budgeting Simulation</p> <p>Local bank financial planning simulation www.moneyopolis.com</p> <p>Guest speakers</p> <p><u>Indiana Academic Standards Addressed:</u> M—6.7.1, 6.7.3, 6.7.4, 6.7.9, 6.7.10, 6.7.11 M—7.7.1, 7.7.3, 7.7.4, 7.7.10, 7.7.11, 7.7.12 M—8.7.1, 8.7.3, 8.7.4, 8.7.10, 8.7.11</p> <p>S—6.2.2</p>

BMS-PFE 3 Spending and Credit

BMS-PFE 3.1 Content Standard: Students apply a decision-making process to maximize satisfaction in purchasing and paying for products and services.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-PFE 3.1.1 Apply a rational decision-making process to personal buying decisions.</p> <p>BMS-PFE 3.1.2 Identify goods and services and distinguish between buying goods and buying services.</p> <p>BMS-PFE 3.1.3 Identify alternative sources for purchases (e.g., Internet, retail stores and catalogs).</p> <p>BMS-PFE 3.1.4 Apply comparison</p>	<p>Give scenario: Students want to participate in school spirit day. Students have \$50 (allowance) for purchasing spirit clothing, lunches, and school supplies for the next 2 weeks. They have an opportunity to purchase 3 products—Hoodie for \$33, Sweatshirt for \$22, or T-shirt for \$9. Students must purchase their item and have money available for the next two weeks. What decision would you recommend? Why?</p> <ul style="list-style-type: none"> ➤ Students make decisions for the scenario based on a rational decision-making process ➤ Students discuss decisions <p>Give students copies of the Yellow Pages of the local phone book (students have had database in the Technology Performance Expectations)</p> <p>Instruct students to create a database of 20 companies classifying them as providers of either services or products. (include in database company name, goods, services, etc.)</p> <ul style="list-style-type: none"> ➤ Students create a database <p>Have students do comparison shopping for athletic shoes</p> <p>Use a teacher-created worksheet to</p>	<p>Evaluate each student's:</p> <p>Participation in discussion</p> <p>Database of providers of goods and services</p>	<p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>shopping practices; analyze advertising claims; explain the concept of impulse buying.</p> <p>BMS-PFE 3.1.5 Discuss various ways competition helps the consumer.</p> <p>BMS-PFE 3.1.6 Describe reasons why there are variances in price for a given item bought from different providers.</p> <p>BMS-PFE 3.1.7 Compare advantages/disadvantages of buying-decision alternatives, including mortgages, loans, leasing, and rent-to-own.</p> <p>BMS-PFE 3.1.8 Explain how interest rates affect buying decisions.</p> <p>BMS-PFE 3.1.9 Use reliable consumer resources to collect information for making buying decisions about durable and nondurable goods.</p> <p>BMS-PFE 3.1.10 Identify laws and agencies that are available to protect the rights of the consumer; explain consumer responsibilities.</p>	<p>compare at least 2 brands of shoes</p> <ul style="list-style-type: none"> ➤ Students compare shoes (available on the Internet, department store, sports store, catalog, outlet mall) for price, style, and features ➤ Students analyze advertising claims for each brand of shoe ➤ Students discuss reasons for variances in the prices of the shoes <p>Discuss the advantages/disadvantages of buying decision alternatives—cash, credit, lease, rent-to-own</p> <ul style="list-style-type: none"> ➤ Students working in teams determine the best buying decision for purchasing an automobile for a family of 4 with children ages 10 and 13, mother working at home, father employed in a \$35,000/year job; they have a home mortgage payment, less than \$10,000 in savings, and all the normal expenses of maintaining a family ➤ Students, using Consumer Reports and other reliable resources, determine how to buy the automobile and which make of car to buy as well as whether it should be new or used ➤ Students create a spreadsheet to show their comparisons <p>Assign students to teams to research consumer laws and responsibilities; assign each team a specific law</p> <ul style="list-style-type: none"> ➤ Each team finds information about the law, the agency that enforces it, and related consumer responsibilities by using an Internet search ➤ Each team presents its findings to 	<p>Worksheet</p> <p>Participation in discussion Quiz on comparison shopping practices</p> <p>Decision on the car purchase</p> <p>Spreadsheet of comparisons</p>	

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-PFE 3.1.11 Contrast different methods of payment including cash, checks, debit cards, and credit cards; explain which of these is “borrowing.”</p>	<p>the class</p> <p>Have available examples of cash, checks, debit cards, and credit cards for class discussion</p> <ul style="list-style-type: none"> ➤ Students discuss where they have seen each method of payment used ➤ Students discuss the advantages and disadvantages of each tender 	<p>Participation in activity and discussion</p> <p>Participation in discussion</p>	<p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-PFE 3.1.12 Discuss the steps involved in opening and using a checking account.</p> <p>BMS-PFE 3.1.13 Compare and contrast the different types of checking accounts offered by various financial institutions.</p> <p>BMS-PFE 3.1.14 Compare electronic means of transfer (e.g., debit cards, ATM, and automatic deposits/ payments) offered by various financial institutions and describe why there are various means of transferring funds.</p> <p>BMS-PFE 3.1.15 Identify the rights and responsibilities associated with using a checking account.</p> <p>BMS-PFE 3.1.16 Discuss the advantages and disadvantages of e-banking.</p> <p>BMS-PFE 3.1.17 Analyze privacy and security issues associated with financial transactions.</p>	<p>Contact a bank representative to discuss banking—what is a checking account; what is involved in opening checking accounts; what are the rights and responsibilities of having a checking account; what is e-banking; what are the privacy and security issues associated with e-banking and checking accounts</p> <ul style="list-style-type: none"> ➤ Students prepare for the presentation by researching and writing questions pertaining to the above items to ask the bank representative ➤ Students participate in the presentation by asking knowledgeable questions ➤ Students write thank-you letter to the presenter <p>Distribute to each student a “banking simulation” and discuss and demonstrate the banking project which is focused on using a checking account</p> <ul style="list-style-type: none"> ➤ Students use the material and problems in the simulation to learn how to use a checking account 	<p><u>Evaluate each student's:</u></p> <p>Research questions</p> <p>Thank you letter (demonstrating a command of standard English)</p> <p>Simulation projects</p>	<p>Checking account simulation from a local bank</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-PFE 3.1.18 Explain what credit is; explain what creditors look for in issuing credit (character, capacity, capital, conditions, and collateral); explain the use of credit reports.</p> <p>BMS-PFE 3.1.19 Identify methods of establishing and maintaining a good credit rating; explain ways to avoid or correct problems; explain the consequences of living beyond one's means; explain the consequences of late debt payments.</p> <p>BMS-PFE 3.1.20 Identify the factors that affect the cost of credit (principal, time, and interest rate) and explain how these factors are interrelated; calculate finance charges.</p> <p>BMS-PFE 3.1.21 Explain why the interest rate varies with the amount of assumed risk.</p> <p>BMS-PFE 3.1.22 Describe the risks and responsibilities associated with using credit and how to gain protection against the consequences of risk (credit risks and other risks in life).</p> <p>BMS-PFE 3.1.23 Identify the opportunity cost of credit.</p> <p>BMS-PFE 3.1.24 Identify the various types of credit including the different types of credit cards.</p> <p>BMS-PFE 3.1.25 Explain the effects of debt collection through a collection agency or court judgment on one's credit rating.</p>	<p>Present scenario: The teacher asks if an 8th grade student who wants to use credit for purchasing a computer can get credit if he/she has the required down payment</p> <p>Discuss what creditors look for in issuing credit and factors that affect the cost of credit; explain why interest rates vary, the risks involved in using credit, and how a credit report is used</p> <ul style="list-style-type: none"> ➤ Students, in teams, are given a topic such as: establishing a credit history; what is a credit report and what does it include; responsibilities and risks involved in using credit; identity theft; determining which type of credit card to obtain; cost of credit; and debt collection through a collection agency or court to research ➤ Student teams prepare a 1-2 page report on their topic ➤ Student teams present their findings in a slide presentation to the class <p>Give students a problem specifying the balance owed on a credit card and a specified maximum interest rate and the minimum payment allowed</p> <ul style="list-style-type: none"> ➤ Students calculate how long it would take to pay off the balance, paying the minimum, if no additional purchases are made 	<p>Evaluate each student's:</p> <p>Completion of research</p> <p>Team report (demonstrating a command of standard English) based on teacher-created rubric Presentation based on teacher-created rubric</p> <p>Mathematical calculation</p>	<p>Federal Trade Commission</p> <p>Master Card International Inc.</p> <p>US Office of Consumer Affairs and the Consumer Information Center</p> <p>US Department of Labor, Employee Benefits Security Administration</p> <p>Jump\$tart</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.2.1, 6.2.7 E/LA—6.4.3, 6.4.5, 6.4.6, 6.4.7, 6.4.8, 6.4.9, 6.4.10 E/LA—6.5.3, 6.5.6 E/LA—6.6.1, 6.6.2, 6.6.3, 6.6.4 E/LA—6.7.3, 6.7.5, 6.7.6, 6.7.7, 6.7.11 E/LA—7.2.2 E/LA—7.4.2, 7.4.4, 7.4.5, 7.4.6, 7.4.7, 7.4.8, 7.4.9, 7.4.10 E/LA—7.5.3, 7.5.5, 7.5.6 E/LA—7.6.3, 7.6.5, 7.6.8 E/LA—7.7.3, 7.7.4, 7.7.5, 7.7.10 E/LA—8.2.5 E/LA—8.4.2, 8.4.3, 8.4.4, 8.4.5, 8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.6 E/LA—8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.5, 8.6.6, 8.6.7 E/LA—8.7.5, 8.7.12</p> <p>M—6.2.1, 6.2.2 M—6.3.2, 6.3.3, 6.3.4</p>

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> (Follow hyperlinks at end of document for full text of Academic Standards)
BMS-PFE 3.1.26 Explain identity theft and its potential impact on credit.			M—6.7.3, 6.7.4, 6.7.9, 6.7.10, 6.7.11 M—7.7.3, 7.7.4, 7.7.10, 7.7.11, 7.7.12 M—8.2.2, 8.2.3 M—8.7.3, 8.7.10, 8.7.11, 8.7.12 S—6.2.2 S—8.2.5 SS-8.4.10

BMS-PFE 4 Saving and Investing

BMS-PFE 4.1 Content Standard: Students evaluate saving and investing options to make short-, intermediate-, and long-term goals.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-PFE 4.1.1 Define savings; compare saving to the concept of Social Security.</p> <p>BMS-PFE 4.1.2 Define why and how people save; explain the concept of planning for emergencies.</p> <p>BMS-PFE 4.1.3 Identify the opportunity cost of saving.</p> <p>BMS-PFE 4.1.4 Explain the difference between earning interest and paying interest.</p> <p>BMS-PFE 4.1.5 Distinguish between simple and compound interest.</p> <p>BMS-PFE 4.1.6 Analyze the power of compounding and the importance of</p>	<p>Give scenario: A young person decides to use Social Security as his/her method of saving and, therefore, does not plan to save any of his/her earnings</p> <ul style="list-style-type: none"> ➤ Students decide whether this is a wise decision and explain <p>Provide the students with the question of which is worth more, a penny invested at birth compounded for 13 years at a certain rate or a set amount of money</p> <ul style="list-style-type: none"> ➤ Students learn how to figure interest ➤ Students create a spreadsheet to figure interest ➤ Students are given a series of problems to solve using the factors of interest 	<p>Evaluate each student's:</p> <p>Participation in discussion</p> <p>Quiz over the concepts of savings</p> <p>Spreadsheet</p> <p>Calculation of interest problems</p> <p>Quiz over computing interest—students may use a spreadsheet</p>	<p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>starting early in implementing a plan of saving and investing.</p> <p>BMS-PFE 4.1.7 Explain various options (advantages and disadvantages) for saving, including “piggy banks,” credit unions, and other financial institutions.</p> <p>BMS-PFE 4.1.8 Compare/contrast saving and investing (identify the risk/return trade-offs).</p> <p>BMS-PFE 4.1.9 Discuss the advantages and disadvantages of various options for investing to meet short-, intermediate-, and long-term goals; explain liquidity, risk, and return for various alternatives.</p> <p>BMS-PFE 4.1.10 Evaluate sources of investment information.</p> <p>BMS-PFE 4.1.11 Explain how different factors affect the rate of return on investment.</p> <p>BMS-PFE 4.1.12 Describe how to buy and sell investments; explain how agencies that regulate financial markets protect investors.</p>	<p>Have students break into small groups to research the use of “piggy banks,” credit unions, banks, brokerages, etc., as an option for saving</p> <ul style="list-style-type: none"> ➤ Student groups prepare and give a short presentation on the advantages and disadvantages (risk/return, liquidity, goals, etc.) of the form of saving they researched <p>Invite a broker to class to discuss sources of investment information, factors that affect the rate of return on investments, how to buy and sell investments, how financial markets are regulated to protect investors</p> <ul style="list-style-type: none"> ➤ Students do Internet research and write five questions in their journals for use during the presentation 	<p>Oral report through teacher-created rubric</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p>	<p>Journal Entry Assessment (Appendix D)</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.2.1, 6.2.7 E/LA—6.4.5, 6.4.6, 6.4.7, 6.4.8, 6.4.9, 6.4.10 E/LA—6.5.6 E/LA—6.6.1, 6.6.4 E/LA—6.7.3, 6.7.5, 6.7.6, 6.7.7, 6.7.11 E/LA—7.2.2 E/LA—7.4.2, 7.4.5, 7.4.7, 7.4.8, 7.4.9, 7.4.10 E/LA—7.5.5, 7.5.6</p>

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
			<p>E/LA—7.6.5, 7.6.8 E/LA—7.7.3, 7.7.4, 7.7.5, 7.7.9, 7.7.10 E/LA—8.2.5 E/LA—8.4.4, 8.4.5, 8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.6 E/LA—8.6.1, 8.6.2, 8.6.3, 8.6.4, 8.6.5, 8.6.6, 8.6.7 E/LA—8.7.5</p> <p>M—6.3.2, 6.3.3, 6.3.4 M—6.7.3, 6.7.4, 6.7.9, 6.7.10, 6.7.11 M—7.7.3, 7.7.4, 7.7.10, 7.7.11, 7.7.12 M—8.2.2, 8.2.3 M—8.7.3, 8.7.10, 8.7.11, 8.7.12</p> <p>S—6.2.2 S—6.5.4 S—7.2.1 S—8.2.4</p>

Section 7: Introduction to Performance Expectations, Instructional Strategies, and Assessment Strategies for Business Ownership/Management

The following items should be read prior to implementing the Instructional Strategies, Assessment Strategies, and Supplementary Resources presented on the following pages.

1. Four broad areas—Technology, Career Exploration, Personal Finance/Economics, and Business Management/Ownership—are included in the [Indiana Business and Information Technology Middle School Curriculum](#). An Indiana State Board of Education Rule states: Middle school students are to receive instruction every year in a minimum of two of the following practical arts program areas: Agriculture, Business and Information Technology, Family and Consumer Sciences, and Technology (Industrial Technology) Education. Therefore, curriculum configurations are likely to differ from school to school based on the time allocated to practical arts program areas. Schools/teachers need to select content for the curriculum that will best serve their students' needs and interests. Technological literacy, required by the No Child Left Behind legislation for all students by the completion of grade 8, personal financial literacy, and career exploration are of particular importance for all students. Also, the content in each of these areas provides concepts and applications that facilitate the development of competencies (e.g., reading comprehension, writing, math, critical thinking, and computer/technological literacy) required for success in all academic areas. The content selected can be integrated among any of the four broad areas in the [Indiana Business and Information Technology Middle School Curriculum](#) as well as with other curricular areas in the middle school.
2. **The Indiana Business and Information Technology Middle School Curriculum supports and reinforces many of the Indiana Academic Standards.** The Indiana Academic Standards listed pertain to grades 6-8 since these are the middle school grades for most Indiana school corporations. The items E/LA, M, S, and SS in the Supplementary Resources relate to the Indiana Academic Standards for English/Language Arts, Mathematics, Science, and Social Studies. The first numeral of the standard designates the grade level. It is recommended that teachers review these standards prior to implementing instructional strategies (Part II, Section 3).
3. Numbers used for Content Standards and Performance Expectations combine alphabetical letters and a number as follows: (a) BMS-BOM to designate the curriculum area; (b) BMS-BOM 1 to designate the specific curriculum area category (c) BMS-BOM 1.1 to designate the Performance Expectation Content Standard; and (d) BMS-BOM 1.1.1 to designate the Performance Expectations for the content standard.
4. The Performance Expectation categories are presented in a logical sequence. However, flexibility can be exercised in the order in which performance expectations within each category are taught. Teachers should select the proficiencies (Performance Expectations) they believe are most important given a limited amount of curriculum time. **All of the materials pertaining to the Indiana Business and Information Technology Middle School Curriculum (Part II) and keyboarding instruction (Part I) should be read prior to implementation of any of the material.**
5. Since middle school students are inquisitive and questioning, teachers must be cognizant of “teachable moments” and take advantage of them to teach relevant concepts.
6. Journal activities (journal writing examples can be found at http://www.education-world.com/a_curr/curr144.shtml) and discussion participation are recommended as Instructional Strategies for many Performance Expectations. They provide students with important speaking and

writing skills that reinforce the English/Language Arts Indiana Academic Standards. It is recommended that journal activities be composed at the computer, be limited to a few paragraphs, and be saved to appropriate files. They should be evaluated for appropriate content and for quality of writing (punctuation, grammar, tone, coherence, and conciseness). Discussion participation should be characterized by appropriate vocabulary, tone, grammar, clarity, and relevance to the topic. The evaluation of these activities should focus on students following criteria (that incorporate the Academic Standards) given by the teacher. A multi-page student project in journaling is included in Appendix D. Also, examples of rubrics for assessing journal writing and class discussion are included in Appendix D.

7. A “project-based” method for teaching middle school business technology is recommended because it uses authentic experiences. A project-based activity may encompass a variety of Proficiency Expectations across several curriculum topics. Use of the suggested projects listed in the Instructional Strategies and/or Supplementary Resources is critical to incorporate the Indiana Academic Standards. If other projects are substituted, they should address the Indiana Academic Standards listed.
8. It is assumed the teacher will create the “activity sheets,” “worksheets,” or “rubrics” referred to in the Instructional Strategies if not provided in this document. (Rubric Construction Guidelines are in Appendix D.) Ideas for creating activities may be obtained from textbook vendor materials available online.
9. Instruction and reinforcement of specific Performance Expectations, especially those pertaining to understanding terminology and concepts, should be distributed over the curriculum rather than concentrated in a short time frame.
10. As students use software applications, they should be monitored for good input techniques (keyboarding, speech, or other) and effective use of the software.

Indiana Business and Information Technology Middle School Curriculum

Business Ownership/Management Grid

BMS-BOM 1 Fundamental Business Ownership/Management Knowledge and Skills

BMS-BOM 1.1 Content Standard: Students analyze concepts that serve as the foundation for the study of management and other business activities.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-BOM 1.1.1 Identify skills and qualities needed for specific jobs and careers.</p>	<p>Have students access www.learnmoreindiana.org, www.Monster.com, or a similar Internet site</p> <ul style="list-style-type: none"> ➤ Student teams select jobs of interest and determine job/position, skills, education, employment outlook, and related information ➤ Students print out a copy of the jobs they select for their portfolio ➤ Students discuss their findings with the class 	<p>Evaluate each student's:</p> <p>Participation in discussion</p> <p>Student printouts for their career portfolio</p>	<p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-BOM 1.1.2 Describe the differences between an employer and an employee.</p> <p>BMS-BOM 1.1.3 Identify the characteristics of a good employee.</p> <p>BMS-BOM 1.1.4 Describe the characteristics of a good employer/manager.</p>	<p>Present Dry Cleaning Scenario or other appropriate exercise</p> <ul style="list-style-type: none"> ➤ Students analyze the errors made by the employee in the scenario and determine how the employer would evaluate the employee's performance ➤ Students brainstorm in small groups and generate and key a list of the characteristics of a good employee, and share their lists through class discussion. Display the lists on the bulletin board ➤ Students discuss the relationship between the characteristics of being a good employee and being 	<p>Evaluate each student's:</p> <p>List of manager/employer characteristics</p> <p>Participation in discussion</p>	<p>Dry Cleaning Employee Scenario (Appendix I)</p> <p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
	<p>a good student (This discussion can be used to generate a classroom rubric for assessing student performance)</p> <ul style="list-style-type: none"> ➤ Students brainstorm in small groups, generate a list of the characteristics of a good employer/manager, and share their lists through class discussion 		
<p>BMS-BOM 1.1.5 Explain the importance of organizing.</p> <p>BMS-BOM 1.1.6 Describe the importance of planning.</p> <p>BMS-BOM 1.1.7 Discuss the importance of time management.</p>	<p>Explain why planning, organizing, and time management are important for a successful employer/manager</p> <ul style="list-style-type: none"> ➤ Students identify basic types of planning, organizing, and time management that employers/managers must do <p>Invite an employer/manager to class to discuss how he/she plans, organizes, and uses time management</p> <ul style="list-style-type: none"> ➤ Students prepare an interview guide and conduct the interview of the employer/manager ➤ Students take notes during the interview ➤ Students write a thank you letter to the interviewee—competition among class for the one to be sent to the interviewee <p>Introduce students to PDAs as a tool to assist in time management</p> <ul style="list-style-type: none"> ➤ Students rotate in using the available PDAs ➤ Students generate a task list of homework assignments for classes and school activities using the PDA ➤ Students rotate (using the class PDAs) in writing a journal entry in their PDA about the importance of business planning and organizing, 	<p>Evaluate each student's:</p> <p>Written questions for interviewing guide</p> <p>Interview notes in student notebook Participation in the interview</p> <p>Thank you letter—select best for sending (demonstrating a command of standard English)</p> <p>PDA tasks/homework assignments</p> <p>PDA journal entry-- Journal entry that demonstrates the use of a thesis</p>	<p>Journal Entry Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
	other students will enter journal entries in their journal on the computer	statement, a command of standard English, etc.	
<p>BMS-BOM 1.1.8 Define and explain the importance of leadership.</p> <p>BMS-BOM 1.1.9 Identify leaders and leadership qualities.</p>	<p>Explain basic responsibilities and personal characteristics associated with effective leadership</p> <ul style="list-style-type: none"> ➤ Students compile and key a list of traits they think effective leaders should possess ➤ Students share their lists through discussion ➤ Students describe how one of their teachers demonstrates good leadership in the classroom ➤ Students generate a check sheet that lists the qualities of being an effective leader 	<p>Evaluate each student's:</p> <p>List of traits</p> <p>Participation in discussion</p> <p>Check sheet on leadership</p>	<p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-BOM 1.1.10 Describe the advantages of working as a team in a specific activity.</p> <p>BMS-BOM 1.1.11 Identify the advantages and disadvantages of the team concept to an organization.</p> <p>BMS-BOM 1.1.12 Describe and give examples of the characteristics of successful teams.</p> <p>BMS-BOM 1.1.13 Explain the importance of motivation, leadership, and trust to members of a team.</p> <p>BMS-BOM 1.1.14 Explain the importance of clear communication to members of a team.</p>	<p>Use a Team Building exercise such as Survival on the Moon, Lost at Sea, or Lost in Space</p> <ul style="list-style-type: none"> ➤ Students participate in the team-building exercise and discuss such questions as: What is a team? Why do we team? How are team members selected? In what kinds of situations are teams used? What kinds of characteristics are needed by team members? <p>Discuss what a “trust walk” is and how it might be used to develop “team” building</p> <ul style="list-style-type: none"> ➤ Students participate in a trust-walk exercise ➤ Students do reflective thinking and write a journal entry about their trust-walk experience and other team-building exercises 	<p>Evaluate each student's:</p> <p>Participation in team-building activities</p> <p>Participation in discussion</p> <p>Journal entries (that demonstrates the use a thesis statement, a command of standard English, etc.)</p>	<p>Team-Building Principles (Appendix I)</p> <p>Team Building Activities Sites: Survival on the Moon</p> <p>http://www.wilderdom.com/games/descriptions/Plane%20Crash%20Scenario.htm</p> <p>http://www.lakelandschools.org/EDTECH/leslie/space.htm</p> <p>Trustwalk Site: http://www.naturely.com/trust.htm</p> <p>Class Discussion Assessment (Appendix D)</p> <p>Journal Entry Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
	<p>Relate “team” efforts used in the school to general principles of how teams work; for example, describe a middle school situation in which several teachers are involved with teaching each student; emphasize the need for communication</p> <ul style="list-style-type: none"> ➤ Students discuss how the following can be accomplished: (1) coordinating teaching efforts; (2) informing parents of pertinent information about students; (3) maximizing teacher effectiveness with students—sharing achievements and difficulties ➤ Students identify and analyze the use of teams (not athletic) in their school ➤ Students generate and key a list of ideas for how teacher teams can be used effectively at their school <p>Discuss what motivation is and how students are motivated at home, at school, and in activities</p> <ul style="list-style-type: none"> ➤ Students identify motivated students in their class and discuss factors that motivate them ➤ Students discuss their experiences on teams and analyze whether/how motivation was developed <p>Describe a poorly performing team (e.g., a team that is supposed to plan a class party)</p> <ul style="list-style-type: none"> ➤ Student teams analyze the situation and discuss recommendations on what could be improved to make the team/party successful 	<p>List of effective use of teacher-team activities</p>	

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-BOM 1.1.15 Describe a personal code of ethical behavior.</p> <p>BMS-BOM 1.1.16 Demonstrate ethical behavior in small-group situations.</p>	<p>Discuss the concept of a code of ethical behavior</p> <p>Provide a “bank box” in which students will deposit ethical behavior flash cards</p> <ul style="list-style-type: none"> ➤ Students research ethical traits on the Internet ➤ Students create flashcards based on their Internet research that describe positive ethical traits/conduct and deposit them in the bank box ➤ Students gather the cards from the bank box and classify the traits by categories ➤ Students create a bar chart (6th grade) or determine the type of graphic to use (7-8th grades) of the traits in each of these categories using a spreadsheet program ➤ Students print out spreadsheets and display them on a bulletin board ➤ Students (working in small groups) develop a 6th, 7th, or 8th grade code of ethics <p>Teachers develop short statements pertaining to student conduct</p> <ul style="list-style-type: none"> ➤ Students determine whether the statement violates the code of ethics ➤ Students write a journal entry regarding the importance of a personal code of ethics 	<p>Evaluate each student’s:</p> <p>Participation in flashcard creation</p> <p>Bar chart</p> <p>Appropriate grade-level code of ethics using paragraphs (demonstrating command of standard English, including varied word choice)</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p>	<p>www.charactercounts.com</p> <p>Journal Entry Assessment (Appendix D)</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.2.7 E/LA—6.4.5, 6.4.7, 6.4.9, 6.4.10 E/LA—6.5.6, 6.5.7</p>

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
			E/LA—6.6.1, 6.6.2, 6.6.3, 6.6.4 E/LA—7.4.7, 7.4.8, 7.4.9, 7.4.10 E/LA—7.5.6, 7.5.7 E/LA—7.6.1, 7.6.3, 7.6.5, 7.6.8 E/LA—7.7.1, 7.7.2 E/LA—8.2.5 E/LA—8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.5, 8.5.6 E/LA—8.6.4, 8.6.5, 8.6.6, 8.6.7 M—6.7.9, 6.7.10, 6.7.11 M—7.6.1 M—7.7.10, 7.7.11, 7.7.12 M—8.7.10, 8.7.11, 8.7.12

BMS-BOM 2 Forms of Business Ownership

BMS-BOM 2.1 Content Standard: Students assess the characteristics of various types of business ownership.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-BOM 2.1.1 Identify and provide examples of the major forms of business ownership (sole proprietorship, partnership, and corporation).</p> <p>BMS-BOM 2.1.2 Identify the differences between a sole proprietorship and a partnership.</p> <p>BMS-BOM 2.1.3 Define a corporation and explain how it differs from a sole proprietorship and a partnership.</p> <p>BMS-BOM 2.1.4 Describe and give examples of special types of business ownership (e.g., franchises, cooperatives, and S corporations).</p>	<p>Discuss the various forms of business ownership</p> <ul style="list-style-type: none"> ➤ Students generate a flash card list (or create a database) of businesses that their family goes to on a regular basis, e.g., Target, Wal-Mart, Carosi's, McDonald's, REMC, a lawyer's office, or a physician's office (Students could take an inventory of where they or their parents go for the week preceding this unit of instruction) ➤ Student teams sort their flash cards by the basic forms of ownership of these businesses (or create categories within their database), and explain why they classified them as they did ➤ Students generate a list of types of business ownership identified by their team (or generate a report using database software for the various categories) ➤ Students combine the data from all teams and use spreadsheet software to create a bar chart to compare the number of businesses in each category 	<p>Evaluate each student's:</p> <p>Flash card list (or database created)</p> <p>Participation in discussion</p> <p>List of business types or database report</p> <p>Spreadsheet and bar chart of business categories</p>	<p>Class Discussion Assessment (Appendix D)</p> <p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.4.7 E/LA—7.4.7 E/LA—8.4.6</p> <p>M—6.7.9, 6.7.10, 6.7.11 M—7.6.1 M—7.7.10, 7.7.11, 7.7.12 M—8.7.10, 8.7.11, 8.7.12</p>

BMS-BOM 3 Entrepreneurship

BMS-BOM 3.1 Content Standard: Students assess the characteristics of entrepreneurial opportunities and analyze the roles and responsibilities of entrepreneurs.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-BOM 3.1.1 Identify the characteristics of successful entrepreneurs.</p> <p>BMS-BOM 3.1.2 Describe opportunities that led to the development of successful entrepreneurial endeavors.</p> <p>BMS-BOM 3.1.3 Identify one's own personal traits that are typical characteristics of an entrepreneur.</p>	<p>Have students select an individual who has been nationally successful in starting and operating his or her own business, e.g., Sam Walton</p> <ul style="list-style-type: none"> ➤ Students research this individual on the Internet and identify/discuss the contributions he/she has made to the economy ➤ Students research this individual on the Internet and identify the personal characteristics (aptitudes, abilities, skills, philosophy, etc.) of the individual ➤ Students identify and create a journal entry about the opportunities that this person took advantage of in advancing his/her entrepreneurial endeavors ➤ Students discuss why this person was successful as an entrepreneur ➤ Students use the table function in word processing software or spreadsheet software to compare their personal traits with those of an entrepreneur ➤ Students discuss how the contributions of entrepreneurs have impacted the US economy ➤ Students write a journal entry in which they convey their opinion about whether or not they would like to be an entrepreneur 	<p>Evaluate each student's:</p> <p>Participation in discussion</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p> <p>Participation in discussion</p> <p>Table of personal traits for an entrepreneur</p> <p>Participation in discussion</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p>	<p>www.stfrancis.edu/ba/ghkickul/stuwebs/bbios/biograph/walton1.htm http://en.wikiquote.org/wiki/Sam_Walton</p> <p>Class Discussion Assessment (Appendix D)</p> <p>Journal Entry Assessment (Appendix D)</p> <p>Class Discussion Assessment (Appendix D)</p> <p>Class Discussion Assessment (Appendix D)</p> <p>Journal Entry Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
<p>BMS-BOM 3.1.4 Compare the costs and benefits of choosing to become an entrepreneur.</p>	<p>Have students obtain information about being a successful entrepreneur from the Internet</p> <ul style="list-style-type: none"> ➤ Students identify costs (opportunity costs, personal setbacks, and monetary costs) of pursuing entrepreneurial ambitions ➤ Students discuss their findings and generate a list of costs associated with becoming an entrepreneur 	<p>Evaluate each student's:</p> <p>List of costs associated with becoming an entrepreneur</p> <p>Participation in discussion</p>	<p>http://makeover.about.com/od/evaluateyourcareer/a/personality.htm?terms=entrepreneur+traits</p> <p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-BOM 3.1.5 Differentiate between a manager and an entrepreneur.</p>	<p>Have students compare the job description of a manager with the information they have gathered on what an entrepreneur does</p> <ul style="list-style-type: none"> ➤ Students research an Internet site that gives information about what managers do ➤ Students use the table function in word processing software or spreadsheet software to compare what a manager does with what an entrepreneur does ➤ Students write a journal entry to describe the similarities and differences between managers and entrepreneurs 	<p>Evaluate each student's:</p> <p>Table of the comparison between a manager and an entrepreneur</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p>	<p>http://management.about.com/cs/generalmanagement/a/Management101.htm</p> <p>http://makeover.about.com/od/evaluateyourcareer/a/personality.htm?terms=entrepreneur+traits</p> <p>Journal Entry Assessment (Appendix D)</p>
<p>BMS-BOM 3.1.6 Define ethics and identify common ethical issues that entrepreneurs encounter.</p>	<p>Have students compile information on ethical business practices</p> <ul style="list-style-type: none"> ➤ Students research Internet sites that give general information about ethical business practices ➤ Students make a list of practices that involve ethical issues ➤ Students discuss how these practices may be of particular concern to entrepreneurs <p>Students debate whether it is easier for an entrepreneur to maintain high ethical</p>	<p>Evaluate each student's:</p> <p>List of ethical issues practices</p> <p>Participation in discussion</p> <p>Debate participation</p>	<p>http://www.halliburton.com/about/ethical_business.jsp</p> <p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources (Follow hyperlinks at end of document for full text of Academic Standards)
	standards in business or for a major corporation to do so		<p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.2.7 E/LA—6.4.5, 6.4.7, 6.4.9, 6.4.10 E/LA—6.5.6, 6.5.7 E/LA—6.6.1, 6.6.2, 6.6.3, 6.6.4 E/LA—6.7.5, 6.7.6, 6.7.7 E/LA—7.4.7, 7.4.8, 7.4.9, 7.4.10 E/LA—7.5.6, 7.5.7 E/LA—7.6.1, 7.6.3, 7.6.5, 7.6.8 E/LA—7.7.3, 7.7.4, 7.7.5 E/LA—8.2.5 E/LA—8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.5, 8.5.6 E/LA—8.6.4, 8.6.5, 8.6.6, 8.6.7 E/LA—8.7.4, 8.7.5</p> <p>SS—8.4.5</p>

BMS-BOM 4 Basic Functions of Management and Marketing

BMS-BOM 4.1 Content Standard: Students analyze management and marketing functions and their implementation and integration in the business environment.

<i>Performance Expectations</i>	<i>Instructional Strategies</i>	<i>Assessment Strategies</i>	<i>Supplementary Resources</i> <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-BOM 4.1.1 Determine the wants of consumers for specific products at various price levels.</p> <p>BMS-BOM 4.1.2 Define and give examples of target markets for specific products.</p> <p>BMS-BOM 4.1.3 Identify and discuss the elements of marketing (e.g., product, place, price, and promotion).</p>	<p>Bring several products that will appeal to many students (soft drinks, candy, note paper, pens, etc.) to class Provide students with a supply of play money</p> <ul style="list-style-type: none"> ➤ Students bid on the product; the highest bidder gets to keep the product ➤ Students discuss why they quit bidding or kept on bidding at different price levels ➤ Students write a journal entry describing why wants of consumers for specific products change with the price level <p>Bring a model of a sports car or other product that has appeal to certain consumers</p> <ul style="list-style-type: none"> ➤ Students describe the characteristics of consumers who would be potential buyers of that product ➤ Students (through discussion) define what a target market is ➤ Students write journal entries that identify three products and the target markets for them <p>Use a perishable product, a small nonperishable product, and a large object in the classroom (e.g., a desk) as examples of products for discussion of the elements of marketing</p> <ul style="list-style-type: none"> ➤ Students discuss how distribution 	<p>Evaluate each student's:</p> <p>Participation in auction</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p> <p>Participation in discussions</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p> <p>Participation in discussions</p>	<p>Journal Entry Assessment (Appendix D)</p> <p>Class Discussion Assessment (Appendix D) Journal Entry Assessment (Appendix D)</p> <p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
	<p>(place, price, and promotion) would differ for each product</p> <p>Discuss major concerns of students/parents regarding the purchase of a laptop</p> <p>Assign students to groups; each group is assigned a different part of the marketing mix regarding the sale of laptops to students/parents (use four groups—product, distribution, price, and promotion)</p> <ul style="list-style-type: none"> ➤ Students in each group list the factors that must be considered for marketing the laptop ➤ Students discuss their lists ➤ Students create a poster that conveys the factors that must be considered in marketing laptops 	<p>Participation in discussion</p> <p>Marketing a Laptop Poster</p>	<p>Class Discussion Assessment (Appendix D)</p>
<p>BMS-BOM 4.1.4 Design/select products to meet customer wants.</p> <p>BMS-BOM 4.1.5 Identify the resources needed to produce a specific product.</p> <p>BMS-BOM 4.1.6 Create promotional advertising/activities for a given product/service.</p>	<p>Discuss how products are created or initiated by businesses</p> <p>Discuss new products that have been advertised recently and discuss why they have been added to the market</p> <ul style="list-style-type: none"> ➤ Students develop a survey to determine possible products and/or services at the middle school ➤ Students administer the survey to all grades at the middle school ➤ Students analyze the responses and make a list of products/services mostly likely to be successfully sold at the school ➤ Students investigate and identify the resources needed to produce the product(s)/service(s) ➤ In small groups, students create promotional materials for a given product/service 	<p>Evaluate each student's:</p> <p>Participation in discussion</p> <p>Survey</p> <p>Participation in activity</p> <p>Analysis of survey data</p> <p>Promotional materials</p>	<p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
<p>BMS-BOM 4.1.7 Discuss the impact of competition on keeping/increasing market share.</p> <p>BMS-BOM 4.1.8 Identify ways businesses compete (e.g., quality, service, status, and price).</p>	<p>Give some background about early desktop computers—size, number of manufacturers, capabilities, price, etc.</p> <ul style="list-style-type: none"> ➤ Students search the Internet to determine current, comparable facts about desktop computers ➤ Students generate and key a table to compare facts about current desktop computers—number of manufacturers, features/capabilities, price, etc., with the facts about the early desktop computers ➤ Students discuss the reasons for these changes in the computer market ➤ Students write journal entries to elaborate on the ways businesses compete 	<p>Evaluate each student's:</p> <p>Table of facts pertaining to desktop computer</p> <p>Participation in discussion</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p>	<p>Class Discussion Assessment (Appendix D)</p> <p>Journal Entry Assessment (Appendix D)</p>
<p>BMS-BOM 4.1.9 Describe techniques for obtaining customer feedback.</p> <p>BMS-BOM 4.1.10 Discuss the importance of responding to customer concerns.</p> <p>BMS-BOM 4.1.11 Identify ways to respond to customer concerns.</p>	<p>Bring to class a questionnaire used by a business to get feedback on its product/service or display an electronic survey used by a company</p> <ul style="list-style-type: none"> ➤ Students discuss why this technique was used ➤ Students discuss other ways of getting feedback on products and services ➤ Students create a poster of various products/services and identify ways businesses could get feedback on these products/services and explain how businesses could respond to the customer feedback <p>Have students assume they received stale candy from a vending machine</p> <ul style="list-style-type: none"> ➤ Students write a complaint letter regarding their dissatisfaction with this product 	<p>Evaluate each student's:</p> <p>Participation in discussion</p> <p>Poster of various products/services</p> <p>Complaint letter (demonstrating a command of standard English)</p>	<p>Class Discussion Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
	<ul style="list-style-type: none"> ➤ Students prepare invitations, flyers, etc., needed for the party 	Party materials	
<p>BMS-BOM 4.1.18 Describe and apply the steps in the decision-making process.</p>	<p>Discuss the decision-making process (define the problem, identify choices, evaluate choices, choose one, act on the choice, review the decision)</p> <ul style="list-style-type: none"> ➤ Students determine whether a school store is needed by using the decision-making process ➤ Students write a one-page report on the decision-making process used and their recommendation 	<p>Evaluate each student's:</p> <p>Participation in discussion</p> <p>Written one-page report (demonstrating a command of standard English)</p>	Class Discussion Assessment (Appendix D)
<p>BMS-BOM 4.1.19 Discuss the importance of a business giving back to the community.</p>	<p>Brainstorm with students to list the major companies in the area Discuss how each gives back to the community (e.g., Wal-Mart—Community Park, ALCOA—student scholarships, Microsoft—computer software for schools, Lilly Endowment—enrichment programs) Invite a local representative from a business that has given back to the local community</p> <ul style="list-style-type: none"> ➤ Students discuss the reasons businesses are involved in giving back to the community ➤ Students develop an interview guide for the business guest speaker ➤ Students interview the business person ➤ Student write a thank you letter to the business guest ➤ Students write a journal entry on why businesses give back to the community 	<p>Evaluate each student's:</p> <p>Participation in discussion</p> <p>Interview guide</p> <p>Participate in interview</p> <p>Thank you letter (demonstrating a command of standard English)</p> <p>Journal entry that demonstrates the use of a thesis statement, a command of standard English, etc.</p>	<p>Class Discussion Assessment (Appendix D)</p> <p>Journal Entry Assessment (Appendix D)</p>

Performance Expectations	Instructional Strategies	Assessment Strategies	Supplementary Resources <i>(Follow hyperlinks at end of document for full text of Academic Standards)</i>
			<p><u>Indiana Academic Standards Addressed:</u></p> <p>E/LA—6.2.7 E/LA—6.4.3, 6.4.5, 6.4.7, 6.4.9, 6.4.10 E/LA—6.5.6, 6.5.7 E/LA—6.6.1, 6.6.2, 6.6.3, 6.6.4 E/LA—6.7.5, 6.7.6, 6.7.7 E/LA—7.4.5, 7.4.7, 7.4.8, 7.4.9, 7.4.10 E/LA—7.5.6, 7.5.7 E/LA—7.6.1, 7.6.3, 7.6.5, 7.6.8 E/LA—7.7.3, 7.7.4, 7.7.5 E/LA—8.2.5 E/LA—8.4.2, 8.4.6, 8.4.7, 8.4.8, 8.4.9 E/LA—8.5.5, 8.5.6 E/LA—8.6.4, 8.6.5, 8.6.6, 8.6.7 E/LA—8.7.4, 8.7.5</p> <p>M—6.7.9, 6.7.10, 6.7.11 M—7.6.1, M—7.7.10, 7.7.11, 7.7.12 M—8.7.10, 8.7.11, 8.7.12</p> <p>S—6.2.2 S—8.2.4</p>

Part III: APPENDICES

Appendix A: Indiana Department of Education Instructional Resources

Indiana Department of Education Instructional Resources

Indiana Business and Information Technology Middle School Standards

<http://www.doe.state.in.us/octe/bme>

Business and Information Technology Education

Course Titles and Descriptions

Approved May 1998; Revised 6/01/99; 10/20/03

<http://www.doe.state.in.us/octe/bme>

Computer Keyboarding/Document Formatting (through 2005-06)

Content Standards and Performance Expectations

Approved November 1998, November 2000; Edited September 2003

<http://www.doe.state.in.us/octe/bme>

Computer Applications

Content Standards and Performance Expectations

Approved November 2001; Edited September 2003; Revised September 2005

<http://www.doe.state.in.us/octe/bme>

Digital Communication Tools

Content Standards and Performance Expectations

Approved Fall 2004

<http://www.doe.state.in.us/octe/bme>

Project-Based Learning Activities 1995-2004 (Available for purchase)

<http://www.doe.state.in.us/octe/bme>

Indiana Academic Standards

<http://www.indianastandardsresources.org/index.asp>

Indiana Business, Information Technology, Marketing, and Cooperative Education

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Appendix B: Teacher and Internet Resources for Development of Instructional Activities

Teacher Resources for Development of Instructional Activities

Ideas presented in this section came from many Indiana schools. These ideas are presented to generate thinking about ways to integrate keyboarding/computer technology and applications into activities at various grade levels. This list of ideas is not intended to be exhaustive.

Grades K-1

- Developing letter-word association drills
- Writing sentences using spelling words
- Making a word dictionary using pictures
- Creating pictures or other graphics and labeling, titling, or otherwise adding text to them
- Making a family “tree” book using graphics and text

Grades 2-5

- Writing a story in a cooperative group where one begins and each member adds to the story
- Writing a letter to a pen pal and/or utilizing e-mail
- Composing thank you notes
- Using multimedia for research
- Developing a time line
- Making databases of family genealogy, friends, favorite sodas, and sports stats
- Comparing students’ jumping skills and weight with their estimates of their jumping skills and weight in outer space
- Comparing heights of students and graphing the results
- Solving mathematical problems that require strategies such as making a list, drawing pictures, and looking for patterns
- Using the Internet for research

Grades 6-8 (Ideas may be adapted for projects used in 9-12)

Producing programs for school functions such as band, science fair, choir, and school play

Collecting information to write a short biography or autobiography

Producing a school newspaper for any subject matter

Using LOGO or other software to create geometric figures and designs

Recognizing and developing the use of mathematical skills and concepts in science such as measurement, graphs, and data analysis

Creating newscasts based on historical events such as the Civil War

Creating fliers and posters (yearbook, school dances)

Writing letters to the editor

Preparing presentations for classes using the Internet

Using e-mail to learn about foreign countries and social issues

Writing instructions for a product or a game

Keying the hidden objects found in a picture

Compiling a cookbook of favorite “recipes”

Creating magazines and/or video documentaries

Making project presentations using word processing, database, spreadsheet, etc.

Using computers and various software to prepare assignments in any content area

Using multimedia to help develop professional presentations

Creating fliers, brochures, and posters

Creating Web pages for school, community organizations, and businesses

Preparing a school or class newsletter

Keying text in a foreign language

Preparing resumes, employment letters

Creating employment portfolios

Preparing community service projects

Preparing a staff photo directory

Preparing an inventory, including bar coding

Internet Resources for Keyboarding/Computer Technology and Applications

(All links were unbroken at the time of this revision.)

The following hyperlinks may be helpful in the instruction of middle school keyboarding/computer technology and applications. This listing is not exhaustive.

Tonya Skinner's Business Education Lesson Plans and Resources

<http://lessonplans.btskinner.com/index.html>

Tammy's Technology Tips for Teachers

<http://www.essdack.org/tips/index.html>

Keyboarding Online @ Crews Middle School

<http://www.crews.org/curriculum/ex/compsci/keyboarding/index.htm>

The Lesson Plans Page—Computer and Internet Plans, Computer Ideas, and Internet Activities

<http://www.lessonplanspage.com/CIJH.htm>

Cathy's Technology Training Resources

<http://www.davis.k12.ut.us/etc/cathy/keyboard.htm>

Internet Activities, Joan Marie Brown, A Middle School Computer Teacher

<http://students.resa.net/stoutcomputerclass/InternetUnit.htm>

Shelbyville Central Schools Keyboarding Lessons and Ideas

<http://www.shelbycs.org/technology/keyboarding.html>

Education World: Technology in the Classroom

http://www.educationworld.com/a_tech/

http://www.education-world.com/a_curr/curr076.shtml

On-Line Practice Modules—Step by Step Lessons on How to Use a Variety of Applications in the Classroom

<http://www.internet4classrooms.com/on-line.htm>

Keyboarding Practice

<http://www.davis.k12.ut.us/cjh/appliedtech/Business/Keyboarding/Index.html>

Awesome Library--Technology

<http://www.awesomelibrary.org/Classroom/Technology/Technology.html>

Utah State Office of Education K-12 Keyboarding

<http://www.usoe.k12.ut.us/ate/keyboarding/key.htm>

Education World, Teacher Prepared Lesson Plans

http://www.educationworld.com/a_tsl/

Adventures of CyberBee

<http://www.cyberbee.com/>

Internet 101, Safety, Netiquette,

<http://www.wowusa.com/Internet101/>

Kathy Schrock's Guide for Educators

<http://school.discovery.com/schrockguide/index.html>

Teaching and Learning Technology

http://www.thecoo.edu/~apeter/teaching_and_learning.htm

Office 2000/XP Project Ideas

<http://www.glencoe.com/webprojects/projects/index.html>

Midge Frazel's Technology Resources

<http://www.midgefrazel.net/>

Other Resources:

<http://www.k12.hi.us/~dtisdell/integration/resource.html>

<http://www.lttechno.com/techresources.html>

<http://www.ael.org/rtec/ideas.htm>

<http://www.thejournal.com/magazine/vault/A4853.cfm>

http://www.teach-nology.com/teachers/lesson_plans/computing/

<http://teachers.teach-nology.com/index.html>

<http://library.thinkquest.org>

<http://www.msad54.k12.me.us/MSAD54Pages/Curriculum%20Resources/TeacherResources/TechResources.html>

<http://www.ncwiseowl.org/kscope/techknowpark/birdseye/index.htm>

<http://www.siec.k12.in.us/~west/proj/index.html>

http://www.arlington.k12.va.us/instruct/ctae/adult_ed/REEP/reepcurriculum/techcurriculum.html

<http://www.nycareerzone.org/>

http://www.ncsu.edu/mmania/mm_docs/mm_judge_rubric2.html

Teacher Resources for Fun Keyboarding Activities

Fairy Tale Keyboarding

In small groups (4-6 students), students key the same beginning sentence at their computers. For instance: "Once upon a time..." They continue to create a story for approximately 3-5 minutes. At that time, the teacher says, "switch" and the students go to the next computer, read the story, and then create additional paragraphs. Continue this process until students get through their group. Let students know that some stories may be selected to be read aloud.

Simon Says

The teacher acts as Simon, calling out things for the students to do. Students should not complete the action, unless the teacher first says, "Simon says." If students do not follow directions, they must stop and sit until play is over. The following are examples. Remember to add a few non-Simon directions also.

Simon says to key Line 1 on page 22.

Simon says to return and begin keying on Line 2.

Simon says to look at your neighbor while you key.

Simon says to sing while you key.

Simon says to shake your head while you key.

Simon says to say the ABC's while you key, etc.

Technique Tag

The purpose of technique tag is to work on proper technique at the keyboard. One person is selected to walk around the room looking for someone with excellent technique. When the person finds someone with the best technique, he/she tags or taps that person and the tagged person becomes the new person to search for another person with the best technique.

Musical Computers

Give each student a starter idea. Each student begins by composing an introduction to a story on the computer until the music stops. Students then move to the next computer. Students read and then add to the story on the next computer. When the music stops, students move to the next computer and so on. Eventually, students are back at their own computers. Students edit for spelling and punctuation, not changing the content. Students can add pictures to the finished stories if they like. Students are amazed at how the same story turns out so differently each time. Share the stories together in class.

Appendix C: Curriculum Web Sites

Curriculum Web Sites

Indiana Academic Standards

<http://www.indianastandardsresources.org/index.asp>

Indiana Department of Education, Business and Marketing Education, Office of Career and Technical Education

<http://www.doe.state.in.us/octe/bme/>

International Society for Technology in Education (ISTE)

<http://www.iste.org>

http://cnets.iste.org/students/s_stands.html

North Central Regional Educational Laboratory (NCREL)

<http://www.ncrel.org>

Partnership for 21st Century Skills

<http://www.21stcenturyskills.org>

Indiana Business Education Association (IBEA)

<http://ind-ibea.org>

Delta Pi Epsilon (DPE)

<http://www.dpe.org>

National Business Education Association (NBEA)

<http://www.nbea.org>

The Michigan Curriculum Framework

<http://www.imschools.org/tech/K-12%20Curriculum.pdf>

Tech Learning, Implementing Standards into Projects

<http://www.techlearning.com/story/showArticle.jhtml;jsessionid=EZVW5K3OMTE1OQSNDBCCKHQ?articleID=20900622>

Kathy Schrock's Guide for Educators--Rubric Sources

<http://school.discovery.com/schrockguide/assess.html#rubrics>

Utah State Office of Education K-12 Keyboarding

<http://www.usoe.k12.ut.us/ate/keyboarding/key.htm>

<http://www.usoe.k12.ut.us/ate/it/ittlc.htm#Business%20Education%20Resources>

<http://www.usoe.k12.ut.us/ate/tlc/Resources/list.htm>

Wisconsin Department of Public Instruction; Wisconsin Model Academic Standards— Information Systems/Technology

<http://www.dpi.state.wi.us>

<http://www.dpi.state.wi.us/dpi/dltcl/eis/pubsales/stdndr.html>

North Carolina Department of Public Instruction

<http://www.dpi.state.nc.us/>

<http://www.dpi.state.nc.us/curriculum/information/scos/strategies/>

http://www.ncpublicschools.org/workforce_development/middle_grades/index.html

Nebraska Department of Public Instruction

<http://www.nde.state.ne.us/>

<http://www.nde.state.ne.us/BMIT/behome.htm>

Virginia CTE Resource Center

http://www.cteresource.org/VERSO/Published/basic_search_form

Virginia Assessment Benchmarks

<http://www.pen.k12.va.us/VDOE/Assessment/Release2002/>

Florida Department of Education

<http://www.firn.edu/doe/programs/business.htm>

<http://www.firn.edu/doe/dwdframe>

Texas Education Agency

<http://www.tea.state.tx.us/rules/tac/chapter120/index.html>

Missouri




<http://waynesville.k12.mo.us/guides/pdf/CompTechMiddle/CompTech7.pdf>

Appendix D: Keyboarding/Voice Recognition and Other Assessment Resource Materials


Keyboarding Assessment and Computer Application Rubrics Resource Materials

Technique Sheet Samples

The technique sheets on the following pages may be used or adapted to critique specific techniques within a class period or a more comprehensive technique check on each student. These are only sample materials.

-  Teacher
-  Student
-  Peer



Video Tape

-  Video keyboarding students to show correct and incorrect techniques they are using. Video specific techniques to stress with students. The videos may be viewed for self and peer critique using Technique Sheets provided by the teacher.





Middle School Keyboarding Evaluation Sample

-  A sample one-semester middle school keyboarding evaluation

Grade-Level Proficiencies

-  Grade-Level Proficiencies for K-4, 5-8
-  Correlations with Indiana Academic Standards for Middle School Technology

Sample Rubrics and Rubric Generator

-  Word Processing
 - http://www.udel.edu/sine/milford/wp_rubrics.html
 - http://www.tensigma.org/pdf/1_n_e/lne_6_bcs/3025_rubric.pdf
 - http://www.lincolnps.org/Middle%20School/comptech/standard_rubric.htm
-  Spreadsheets
 - http://www.udel.edu/sine/milford/ss_rubrics.html
 - <http://dms.wcs.k12.va.us/ssrubric.htm>
-  Presentation Graphics
 - <http://www.ncsu.edu/midlink/rub.pres.html>
 - http://www.ncsu.edu/mmania/mm_docs/mm_judge_rubric2.html
 - <http://www.uwstout.edu/soe/profdev/pptrubric.html>
-  Web Page Rubric
 - <http://school.discovery.com/schrockguide/assess.html>
-  Rubric Creator
 - <http://rubistar.4teachers.org>
 - Rubric Guidelines (following pages)

Grade-Level Benchmark Proficiency Assessment Sample

-  <http://www.pen.k12.va.us/VDOE/Assessment/Release2002/>



Northridge Middle School Keyboarding Technique

Name:

Criteria	Always 4	Most Of The Time 3	Some Of The Time 2	Seldom 1	Refuses To Try 0
Student's back is straight.					
Student leans slightly forward.					
Student's body is approximately a hand span and a half away from the keyboard.					
Student's body is centered with keyboard and the "j" key.					
Student's hips touch back of chair.					
Student keeps feet flat on floor.					
Student demonstrates correct hand position over home keys.					
Student's wrists are level with keyboard.					
Student elbows relaxed at the sides of body.					
Student strikes keys with tips of fingers.					
Student keeps palms off of desk and/or keyboard.					
Student maintains an appropriate rhythm (letter-by-letter or chained).					
Student keeps eyes on copy not on hands, screen, or keyboard.					
Add Up Overall Scores ----->					

Total Score _____

Teacher Comments:

Keyboarding Technique Check Sheet

Ratings:

4 = Excellent 3 = Good
 2 = Average 1 = Unacceptable
 0 = Refusal to try

Student Names**

Techniques	Student Names**									
	Date									
Position at Keyboard										
Sits in a comfortable, relaxed position, directly in front of the "j" key										
Keeps feet on floor for proper balance										
Keeps elbows in relaxed, natural position close to sides of body										
Keeps wrists low and relaxed, slightly above frame of keyboard										
Keystroking										
Keeps fingers well curved and upright over home keys										
Strikes each key with correct finger										
Keeps hands and arms quiet; wrists low										
Makes quick-snap keystrokes with immediate key release										
Space Bar										
Keeps right thumb curved and close to space bar										
Strikes space bar with a quick, down-and-in (toward palm) motion of thumb										
Releases space bar instantly										
Does not pause before or after spacing										
Enter Key										
Strikes enter quickly wherever a hard return is required										
Strikes Enter key with right little finger; immediately returns finger to home key										
Keeps eyes on source copy during and following striking Enter key										
Starts new line without a pause										
Shift Keys										
Reaches quickly with little fingers; keeps other fingers on home row										
Depresses shift key as the character key is struck										
Releases shift key quickly and returns finger to home row										
Tab Key										
Reaches quickly with left little finger and returns finger to home row										
Keeps other fingers on home keys										
Keeps eyes on source copy										
Continues keying without pauses										

Note: Use keyboarding technique assessment for formative purposes, not for summative purposes (assignment of grades).

**List students in seating order rather than alphabetical order to facilitate ease of assessment; check entire class on one or two techniques during a class period.

Keyboarding Self-Checklist

- I arrived to class on time and ready to work.
- I adjusted my working area as needed.
- I listened to my teacher and followed directions.
- I sat correctly at the keyboard:
 - My back was straight and leaning slightly forward.
 - My wrists were level with the keyboard.
 - My elbows were relaxed at my sides.
 - My feet were on the floor.
 - My eyes were off the keyboard and on the copy.
 - My hands were arched over the keyboard.
 - I operated the space bar and enter key correctly.
 - I used the correct fingers for each key.
- At the end of class, I left my workstation as directed.
- I did my best today in keyboarding class.

Name: _____ Date: _____

Keyboarding Technique

(Source: *Keyboarding at the Middle Grades, Curriculum Resource Guide, North Carolina, Summer 2004*)

Student Name: _____ Date: _____

Criteria	Score	Commendable	Acceptable	Unacceptable
Body Position		Feet flat on floor with one foot slightly in front; sits erect in chair; body centered with keyboard; arms relaxed by side 7-5 points	Occasional improper placement of feet or legs; does not always sit erect in chair; body not always aligned with keyboard; arms relaxed by sides 4-2 points	Feet or legs crossed or wrapped around chair; body slumped in chair; body not aligned with keyboard; arms raised at sides of body 1-0 points
Hand and Finger Position		Wrists properly elevated; fingers curved properly; fingers based on home keys 8-6 points	Wrists occasionally low; fingers not always curved properly; hands not always based on home keys 5-3 points	Wrists rest on table or keyboard; fingers not curved and not based on home keys 1-0 points
Eye-Head Position		Eyes consistently on copy; strikes keys without looking at hands 10-9 points	Eyes on copy most of the time; occasionally checks when striking keys 7-5 points	Consistently looks at hands; looks back and forth from copy to screen or keyboard 3-1 points
Keystroking Technique		Fingers strike keys with minimum hand and arm movement; correct fingers used for each keystroke 15-12 points	Fingers strike keys with hesitation; minor arm and hand movement; minor deviations from proper keystroking 10-6 points	Fingers pound the keys; hands roam the keyboard; inconsistent and improper keystroking 5-1 points
Total (40 points)				

A+ = 40	B+ = 35-36	C+ = 28-29	D+ = 21-22
A = 38-39	B = 32-34	C = 25-27	D = 18-20
A- = 37	B- = 30-31	C- = 23-24	D- = 16-17

EVALUATION GRADE: _____

Keyboarding Productivity Rubric

(Source: Keyboarding at the Middle Grades, Curriculum Resource Guide, North Carolina, Summer 2004)

Name _____ Period _____ Date _____

CRITERIA	POINTS	COMMENDABLE	ACCEPTABLE	NOT ACCEPTABLE
Organization		Materials are well organized and easily located by student and teacher (6-9 pts.)	Materials are usually organized and easily located (4-5 pts.)	Often disorganized; materials are not easily found or accessible (0-3 pts.)
Attendance/ Punctuality		Is on time and starts work immediately; makes up missed work when absent (5-8 pts.)	Generally arrives on time; has an acceptable excuse if late or absent; makes-up any missed work (3-4 pts.)	Frequently late or absent; doesn't start work immediately; doesn't make-up missed work (0-2 pts.)
Reaction to Directions and Feedback		Listens, reads, follows directions, and improves from feedback (5-8 pts.)	Generally follows directions but often asks for more guidance (3-4 pts.)	Rarely follows directions; asks many questions and requires repeated instructions (0-2 pts.)
Productivity		Good use of time, is attentive and concentrates on assigned task (6-9 pts.)	Generally attentive and remains on task most of the time (4-5 pts.)	Often wastes time; requires constant supervision in order to remain on task (0-3 pts.)
Resourcefulness		Consistently uses resources when appropriate and takes initiative when needed (5-8 pts.)	Generally uses resources and takes initiative in most situations (3-4 pts.)	Rarely takes initiative or accesses resources when needed (0-2 pts.)
Work Ethic		Always honest, loyal, respectful, cooperative, and responsible in all situations (5-8 pts.)	Has a good work ethic and exhibits appropriate traits in most situations (3-4 pts.)	Needs improvement on making the right decisions and exhibiting appropriate traits (0-2 pts.)

Grading Scale

A+	50	B+	41-43	C+	31-34	D+	21-24
A	47-49	B	38-40	C	28-30	D	18-20
A-	44-46	B-	35-37	C-	25-27	D-	15-17
						F	Below 15

Total Points: _____

Grade: _____

Business/School Skills Assessment

Name: _____

Class: _____

3-Week
Check
6 Week
Check

	Poor		Excellent	
	1	2	3	4
Attendance: maintains good attendance and is punctual to class				
On Task: remains on task while in the classroom and does not distract others from their work				
Effort: asks for make-up work when absent and makes arrangements to complete make-up work on own time				
Initiative: begins work without teacher supervision or being reminded				
Listens Attentively: follows instructions carefully and consistently				
Works Independently: remains on task without interrupting classmates or the class				
Organization: comes prepared for each class by having all the necessary materials; organizes materials for efficient use				
Application: continually demonstrates the use of touch keyboarding skills in completing tasks				
Motivation: remains on task throughout the class; remains seated until the bell and does not stand at the door				
Work Area: cleans up work area and puts materials where they belong				
Honesty: completes own work				
Courtesy: responds positively to teacher/classmates				
Total Points:				

Speech Recognition Checklist

(Adapted from Speaking Solutions, Inc., Nifty 50 Skills Checklist)

Student Name _____ Class _____ Date _____

Check whether each student can do the following things. A small group of items may be checked during one class period. Ask individual students to perform selected items as the teacher observes. A percentage score for the number of items done correctly may be computed. Also, a list of sentences or paragraphs that require the student to execute skills included in this Checklist can be used as an assessment.

Getting Started

1. Creates a speech profile _____
2. Adjusts/manipulates the microphone _____
3. Opens/closes software program, applications programs, and menus effectively _____
4. Enunciates each word clearly and continuously without pausing in the sentence _____
5. Clears all text from screen effectively _____
6. Says “New Line” and “New Paragraph” commands effectively _____
7. Dictates punctuation marks correctly _____
8. Performs additional training to improve speech profile _____

Fixing Mistakes

1. Selects words and substitutes words effectively _____
2. Uses correction window to replace incorrect words/phrases _____
3. Adds and trains unique phrases and names properly _____
4. Consistently trains misrecognized words using “Train Words” command or Vocabulary Editor _____
5. Spells words correctly in correction window using regular alphabet and military alphabet _____
6. Uses the “Scratch That” and “Undo” commands effectively to remove the most recent block of dictated text _____

Capitalizing, Moving, Inserting, Saving, Opening, and Printing

1. Saves and retrieves documents _____
2. Capitalizes text properly including All Caps, Uppercase, and Lowercase _____
3. Effectively navigates right, left, up, and down through document by characters, words, lines and paragraphs. _____
4. Moves cursor to top and bottom (beginning and end) of document _____
5. Prints documents successfully _____

Customizing the Software (Dragon)

1. Anchors and moves the Results box effectively _____
2. Switches docking options of the DragonBar effectively _____
3. Opens sample list of commands using “What Can I Say” command _____
4. Navigates Help menu effectively using “Give Me Help” command _____

Speech Recognition Checklist
(Continued)
(Adapted from Speaking Solutions, Inc., Nifty 50 Skills Checklist)

Student Name _____ Class _____ Date _____

Formatting Documents

1. Applies enhancements (bold, italicize and underline) to text _____
2. Creates a bulleted list _____
3. Uses “Insert” command properly to insert cursor before/after words/phrases _____
4. Cuts, copies, and pastes text correctly _____
5. Aligns text—left, right, and center—appropriately _____
6. Changes font and font size correctly _____
7. Uses tab, space bar, backspace, and delete keys effectively _____
8. Change line spacing of paragraph/document _____

Miscellaneous

1. Maximizes, minimizes, and restores window effectively _____
2. Switches from one application to another _____
3. Uses “Spell Mode,” “Press” and “Type” to insert letters and numbers _____
4. Uses “Mouse Grid” and “Mouse Click” commands effectively _____

Additional Skills

1. Creates a one-line macro in Vocabulary Editor _____
2. Creates a multi-line macro in command Browser _____
3. Dictates dates, times, and numbers effectively _____
4. Exports and imports speech profiles successfully _____
5. Utilizes speech commands in other applications (e.g., Excel, Xpress, Outlook, and the Internet) _____

Other Assessment Strategies

1. See the Speaking Solutions Web site for additional recommendations for assessment:
<http://www.speakingsolutions.com>
2. Distribute several sentences that include punctuation, capitalization, unique words, numbers, etc., for students to dictate, print, and hand in for evaluation.
3. Use timed tests (one-minute recommended by Speaking Solutions, Inc.). Students dictate for the specified time; and if their rate is at least 100 words a minute, grade the copy produced for accuracy only.

Middle School Keyboarding Evaluation Sample

It is assumed that the keyboarding class meets daily for approximately 50 minutes. The following evaluation sample blocks of time (3-, 6-, 9-, 12-, 15-week blocks, and End of Semester--Average) may occur at any grade level (6th-8th). Depending on the configuration of your school year, keyboarding scheduling, and the number of weeks of instruction, the following evaluations may need to be adapted. Although no guidelines for speed and accuracy are given in these evaluation tables, by the end of 1 semester/trimester (approximately 90 instructional hours) of keyboarding (one semester), students should achieve a minimum of 30 words a minute on a 3-minute writing with no more than 9 total errors for a D-level grade.

End of 3-Week Block		End of 6-Week Block	
Factor	% of Grade (Weight)	Factor	% of Grade (Weight)
Techniques	70	Techniques	70
Daily Work	20	Daily Work	10
Work Habits	10	1-Minute Timings	10
		Work Habits	10
End of 9-Week Block		End of 12-Week Block	
Factor	% of Grade (Weight)	Factor	% of Grade (Weight)
Techniques	50	Techniques	40
Daily Work	20	Daily Work	20
Production	10	Production	20
1-Minute Timings	5	2-Minute Timings	5
2-Minute Timings	5	3-Minute Timings	5
Work Habits	10	Work Habits	10
End of 15/18-Week Block		End of Semester (Average)	
Factor	% of Grade (Weight)	Factor	% of Grade (Weight)
Techniques	40	Techniques	40
Daily Work	20	Daily Work	20
Production	20	Production	20
3-Minute Timings	10	3-Minute Timings	10
Work Habits	10	Work Habits	10

Suggested Speed and Accuracy Scale on timed writings (3-minute timings) at the completion of an equivalent of one semester/trimester (approximately 90 instructional hours):

Grade	Speed	Accuracy
A	45 wam	0-6 errors
B	40 wam	0-7 errors
C	35 wam	0-8 errors
D	30 wam	0-9 errors

Rubric Guidelines

Two examples for rubric construction are included in this section. Rubrics can be created to meet the specific purpose of the evaluation.

<http://www.ivyrun.com/lessonplanquest/rubrics.htm>

www.indiana.edu/~tickit/resourcecenter/workshopdocs/rubricintro.doc

Rubric-Based Assessment John Keller and Curt Bonk

<http://indiana.edu/~tickit/resourcecenter/workshopdocs/rubricintro.doc>

Rubric-based assessment provides the teacher and student with a tool for a conducting meaningful, criterion-referenced assessment. Such assessment provides the learners with a clear picture of their learning and of areas for potential growth. Rubrics help to limit teacher subjectivity by encouraging thoughtful representation of the learning goals for the lesson or unit in advance of the instruction.

Criterion-Referenced Assessment. The basic idea here is that student performance is compared to a standard of achievement rather than to other students. A rubric is a tool to help a teacher compare the achievement of their students to the desired outcomes for the instructional unit.

Advantages of Rubrics.

(1) Good For Assessing Project-Based Learning

Project-based learning is often multifaceted with multiple assignments that lead up to a culminating product or performance. Rubrics can be used to assess the intermediate stages of project-based learning to help students stay focused. Rubrics can also help instructors to keep track of the development and progress of their students.

(2) Common Understandings of the Learning Goals

Ideally, rubrics are shared with the students at the outset of the learning/instruction. Articulating the desired outcomes can bring better focus to the instruction and can be a concrete way of focusing student attention on the learning to be done. Students who are following a rubric know from the outset of the experience what levels of achievement are expected in order to attain the highest possible levels in each area of the instruction.

(3) A Way for Teacher to Communicate Relative Importance of Instructional/Learning Components

A rubric is an excellent way for a teacher to communicate, in quantitative terms, the relative importance of different aspects of the learning. The teacher can identify all the areas of the learning that are going to be assessed and assign equal values to each area or can weight the categories so that the most important aspects of the learning experience receive the most emphasis in terms of total points awarded.

Constructing Rubrics. Constructing Rubrics is a time-consuming but worthwhile venture. There is not one right way to go about making a rubric but a good starting point is to envision the final product, performance, or accomplishment.

Envision the Final Product. Imagine all of the intermediate steps that are necessary to complete the final project. Some of the steps may not be worth assessing. Some of the steps may be better assessed if they are grouped. This is something that the instructor can determine. Beginning with the first learning step or outcome that you want to assess, imagine an excellent, mediocre, and inadequate student performance. These levels of achievement can form the basis of your descriptions for the categories.

Describe Levels of Performance. Once you have identified an area for assessment, the next step is describing the performance for each of the various levels of performance that you envision. This step takes some work at the beginning of the instructional planning time but saves time and frustration during assessment. Writing descriptions that are meaningful and that target clearly the issues that separate the various levels of performance is the goal. Sometimes it does not make sense to have various levels of achievement but rather a simple “Yes” or “No”—“Did” or “Didn’t will do nicely. Remember that a rubric is supposed to be useful for you and for your students. If you cannot define the categories or if your students do not understand what is expected of them, the rubric is faulty and needs to be reworked.

	Excellent	Mediocre	Lackluster
First Journal Check	Journal contains daily entries of sufficient length and quality. Journal addresses the writing prompt.	Journal contains entries for most days and one or more entries fail to address the writing prompt and lack sufficient length or quality.	Journal entries are sporadic and generally of low quality.
Teacher Comments			

Assign Point Values. If it is important to get grades as a result of using the rubric, the teacher should assign points to each of the sections of the rubric. Assigning points after all the categories have been described makes sense because determining point values before seeing the big picture can lead to lots of work, refiguring, and juggling. Also, if grades will be determined using the rubric it is a good idea to show point totals that correspond to the letter grades.

Use the Rubric. Depending on the design of your rubric, you may use it only in evaluating a final product, performance or accomplishment or you may use it to evaluate student performance as they reach milestones in a project. Here are a few guidelines for using your rubric to assess student learning.

Test the Rubric. If you have the luxury of using your rubric on former student work, take advantage of it. Giving your rubric a test run can only save you work in the long-run. Although you may be able to picture a project very well in your head, you may find that some of your categories are off-base or that some are unnecessary or missing. A rubric is meant to be useful—it can be changed and improved.

Expect Students to use the Rubric. Students can use the rubric to self-assess their own work and to give constructive assessments to their peers. Having students use the rubric you created can help you to be sure that they understand the categories and the various levels of performance in each.

Use Comments. When you use the rubric, you should use comments to provide positive feedback and directions for improvement. Grading on project-based learning can still suffer the subjectivity threat. If you comment on why you give a student a two instead of a three, it can help the learner to see areas for growth. Positive comments also have a place on the rubric especially to tell students that they have exceeded the requirements or criteria at one point or another.

Online Rubric Makers

Rubistar: <http://rubistar.4teachers.org/index.php>

Teach-nology.com: http://www.teach-nology.com/web_tools/rubrics/

The Landmark Project: http://www.landmark-project.com/classweb/tools/rubric_builder.php

“Journaling to Your Heart’s Content”

Directions to the Student:

You will be responsible for keeping a daily journal (after you have completed the keyboard learning portion of the class). The journal will be a writing project. You may be creative, expressive, etc. The topic for your journal will be on the projection screen each morning. Topics will cover many business issues, personal issues, team issues, etc.

You may begin journaling when you get logged on the system. You will be required to key no less than three (3) paragraphs pertaining to the topic. Please be aware the journals will be randomly checked for language arts standards.

See the attached copy of the student handout.

Your success in this project will be determined by the content of your journal entries, completion of your daily journal entries, the use of correct keyboarding technique, the total number of journals entries, and whether entries are saved in your “My Journal” folder.

Standards Addressed:

Business Middle School Content Standards and Performance Expectations in Technology and Career Exploration

BMS-T 1	Technology Operation Skills
BMS-T 1.1	Students use hardware and software components and understand the difference between input and output devices.
BMS-T 1.1.1	Use hardware and peripherals (input and output devices) to support content area learning including the use of touch screens and simple speech-recognition systems.
BMS-T 1.1.2	Demonstrate effective keyboarding techniques.
	<i>Keyboarding Techniques</i>
BMS-T 1.1.2.1	Demonstrate correct home keys hand position and keystroking.
BMS-T 1.1.2.2	Demonstrate appropriate technique for special purpose keys, including the space bar, tab key, shift keys, backspace key, delete key, and enter key.
BMS-T 1.1.2.3	Demonstrate correct reaches to and keying of alphabetic keys.
BMS-T 1.1.2.4	Demonstrate correct arm/hand positions and correct body posture.
BMS-T 1.1.3	Connect to the Internet using school network/modem and browser.
BMS-T 1.1.7	Use PDAs or other hand-held devices.
BMS-T 1.1.9	Use mouse, keyboard, touch screen, stylus pen, and/or speech to input information (input devices).
BMS-T 1.1.10	Use monitor, printer, and/or speakers (output devices) to review information.
BMS-T 1.1.11	Use the icon/GUI (graphical user interface) of the operating system to launch and operate software.
BMS-T 1.1.12	Use the GUI of the operating system to save and back up files to a hard drive, other drives, or a server.
BMS-T 1.1.14	Use the GUI of the operating system to organize electronic files.



BMS-T-4	Technology as a Productivity Tool
BMS-T.4.1	Students use technology as a tool to enhance learning and creativity. Students are able to use technology to increase productivity in developing models, publications, and other creative works.
BMS-T.4.11	Demonstrate word-processing skills by using correct keyboarding techniques.
BMS-T.4.13	Demonstrate word-processing skills by saving and printing documents.
BMS-T.4.15	Demonstrate word-processing skills by using spell check, thesaurus, and grammar features at a grade-appropriate level.
BMS-CE 1	Self-Awareness
BMS-CE 1.1	Students assess personal skills, abilities, and aptitudes and personal strengths and weaknesses as they relate to career exploration.
BMS-CE 1.1	Identify personal likes and dislikes, strengths and weaknesses, and individual talents.
BMS-CE 1.2	Assess and analyze strengths and weaknesses relative to a variety of career areas involving data, people, and/or things.
BMS-CE 1.3	Formulate and implement a plan to address identified weaknesses.
BMS-CE-2	Career Research
BMS-CE-2.1	Students use print, electronic, and oral career resources to develop a career information database.
BMS-CE 2.1.1	Identify and describe careers of family members and/or friends.
BMS-CE 2.1.2	Describe and give examples of career clusters; develop an awareness of occupational opportunities; recognize the advantages of early career exploration and planning.
BMS-CE 2.1.3	List and describe the contributions of various types of occupations in the community (e.g., banker, realtor, police officer, teacher, business manager, and firefighter) and describe career opportunities in their professional fields.
BMS-CE 2.1.7	Evaluate several occupational interests, based on various criteria (e.g., educational requirements, starting salaries, trends, opportunities, and career ladders).
BMS-CE 3	Workplace Expectations and School-To-Career Transition
BMS-CE 3.1	Students relate the importance of workplace expectations to career development.
BMS-CE 3.1.1	Discuss the personal qualities and ethical and/or responsible behaviors related to school, home, and employability (e.g., promptness, ability to get along with others, a positive attitude, confidentiality, tolerance, flexibility, dependability, honesty, integrity, willingness to ask questions, respect for diversity, patience, cooperation, respect for personal property, completion of homework assignments, and communication skills); and describe how these qualities and behaviors influence the feelings and actions of others.
BMS-CE 3.1.1.2	Demonstrate proper etiquette for meeting and greeting people and appropriate social skills for school and the workplace.
BMS-CE 3.1.1.23	Explain the importance of personal appearance, grooming, and other school and workplace expectations.
BMS-CE 3.1.1.24	Discuss the importance of a job well done to personal satisfaction and to the home and business communities.
BMS-CE 3.1.1.25	Discuss the importance of being able to work productively with people who are different from oneself.
BMS-CE 3.1.1.26	Describe how physical, intellectual, and cultural diversity can strengthen school and workplace effectiveness.



- BMS-CE 3.1.1.27 Identify the changing roles of men and women in the workplace and the family; discuss the advantages and disadvantages of entering nontraditional occupations.
- BMS-CE 3.1.1.28 Identify stereotypes, biases, and discriminatory behaviors that may impact opportunities for women and men in certain occupations.
- BMS-CE 3.1.1.29 Describe different cultural behaviors and expectations and discuss the effects of personal beliefs attitudes, and cultural practices on decision making.
- BMS-CE 3.1.1.10 Demonstrate the steps involved in handling conflict.
- BMS-CE 3.1.1.11 Demonstrate the steps involved in dealing with stress.
- BMS-CE 3.1.1.12 Discuss how environmental barriers may affect the physically challenged.
- BMS-CE 3.1.1.13 Demonstrate good listening skills and describe their importance to school and workplace expectations.
- BMS-CE-4 Career Strategy
- BMS-CE 4.1 Students apply knowledge gained from individual assessment to a comprehensive set of goals and an individual career plan.
- BMS-CE 4.1.1 Describe how the skills and knowledge acquired in school relate to various occupations.
- BMS-CE 4.1.2 Describe the relationship of assessed interests, aptitudes, and abilities to academic and occupational skills.
- BMS-CE 4.1.4 Explain how career decisions impact education, leisure activities, lifestyle, and other major life decisions.
- BMS-CE 4.1.5 Discuss methods of “bouncing back” after a setback or failure.
- BMS-CE 4.1.6 Identify personal goals that may be achieved through a combination of career, community, social, and family roles.
- BMS-CE 4.1.7 Explain the importance of career planning; apply steps in the decision-making process to establish short- and long-term career goals.
- BMS-CE 4.1.8 Evaluate consequences of decisions pertaining to short- and long-term career goals.
- BMS-CE 4.1.9 Identify obstacles to achieving career goals.
- BMS-CE 4.1.11 Determine how the expectations of others affect career goals.
- BMS-CE 5 Lifelong Learning
- BMS-CE 5-1 Students relate the importance of lifelong learning to career success and recognize that each of the following proficiencies must be continually updated.
- BMS-CE 5.1.1 Describe the importance of effective study habits, test-taking skills, and learning skills.
- BMS-CE 5.1.2 Describe how good health, nutrition, and physical fitness habits contribute to career success.



NBEA Standards

Communication

Communication I: Foundations of Communication

Communicate in a clear, courteous, concise, and correct manner on personal and professional levels

Written Communication C

Level 1

Write logical, coherent phrases, sentences, and paragraphs incorporating correct spelling, grammar, and punctuation

Compose simple requests for information, reports, and summaries

Edit and revise written work

Level 2

Use acceptable standards for grammar, mechanics, and word usage

Write coherent business messages, instructions, descriptions, summaries, and reports using appropriate formats

Proofread documents to ensure correct grammar, spelling, and punctuation

Social and Business Listening D

Level 1

Follow oral directions

Listen for meaning

Demonstrate basic keyboarding and computer functions

Communication III: Technological Communication

Use technology to enhance the effectiveness of communication

Level 1

Demonstrate basic keyboarding and computer functions

Relevant Indiana Academic Standards

English/Language Arts

WRITING: Process

6.4.1 Discuss ideas for writing, keep a list or notebook of ideas, and use graphic organizers to plan writing.

6.4.2 Choose the form of writing that best suits the intended purpose.

6.4.3 Write informational pieces of several paragraphs that:

- Engage the interest of the reader.
- State a clear purpose.
- Develop the topic with supporting details and precise language.
- Conclude with a detailed summary linked to the purpose of the composition.

6.4.7 Use a computer to compose documents with appropriate formatting by using word-processing skills and principles of design, including margins, tabs, spacing, columns, and page orientation.

6.4.8 Review, evaluate, and revise writing for meaning and clarity.

6.4.9 Edit and proofread one's own writing, as well as that of others, using an editing checklist or set of rules, with specific examples of corrections of frequent errors.

6.4.10 Revise writing to improve the organization and consistency of ideas within and between paragraphs.



WRITING: Applications (Different Types of Writing and Their Characteristics)

Use varied word choices to make writing interesting.

Example: Write stories, reports, and letters showing a variety of word choices. (Use *delicious* instead of *good*; *overcoat* or *parka* instead of *coat*.)

WRITING: English Language Conventions

- 6.6.1 Use simple, compound, and complex sentences; use effective coordination and subordination of ideas, including both main ideas and supporting ideas in single sentences, to express complete thoughts.
- 6.6.4 Use correct capitalization.
- 6.6.5 Spell correctly frequently misspelled words (*their/they're/there*, *loose/lose/loss*, *choose/chose*, *through/threw*).

WRITING: Process

- 7.4.1 Discuss ideas for writing, keep a list or notebook of ideas, and use graphic organizers to plan writing.
- 7.4.3 Support all statements and claims with anecdotes (first-person accounts), descriptions, facts and statistics, and specific examples.
- 7.4.7 Use a computer to create documents by using word-processing skills and publishing programs; develop simple databases and spreadsheets to manage information and prepare reports.
- 7.4.8 Review, evaluate, and revise writing for meaning and clarity.
- 7.4.9 Edit and proofread one's own writing, as well as that of others, using an editing checklist or set of rules, with specific examples of corrections of frequent errors.
- 7.4.10 Revise writing to improve organization and word choice after checking the logic of the ideas and the precision of the vocabulary.

WRITING: Process

- 8.4.2 Create compositions that have a clear message, a coherent thesis (a statement of position on the topic), and end with a clear and well-supported conclusion.
- 8.4.3 Support theses or conclusions with analogies (comparisons), paraphrases, quotations, opinions from experts, and similar devices.

WRITING: Applications (Different Types of Writing and Their Characteristics)

- 8.5.6 Write using precise word choices to make writing interesting and exact.

Directions to the Instructor:

Journal writing is an expressive way for students to share their thoughts, ideas, and reasonings for a variety of issues—personal, workplace, technology, problem solving, critical thinking, or business related. Journal writing reinforces ISTEP writing skills.

Students will utilize a variety of hardware and software. If students have learned how to use PDAs, speech recognition, or handwriting recognition, they should use these technologies for inputting their journal entries. The project determines whether the student can perform the activities in the **Directions to the Student** and complete the performance expectations listed in the **Response from the Student** and/or Student Handout

Provide the student with:

- Computer and other necessary hardware
- Word processing software

When starting the project, provide the student with the **Directions to the Student**, project overview, and journal topics. Explain that the project assessment will be based on the student's ability to perform the tasks using the skills identified and the quality of the writing (see rubric on following page). Students should work independently. Rubrics may be created for each project if you desire.

“Journaling to Your Heart’s Content” Rubric

	Yes	No	Comments/Points
• Created “My Journal” folder			
• Created a journal format for entries			
▪ Used Creative design for daily entries			
▪ Used word processing skills to design form			
• Used proper keyboarding technique			
• Used technology to create entries			
• Listened attentively to instructions			
• Wrote appropriate and interesting entries dealing with a variety of personal, business, workplace issues, technology, problem solving, or critical thinking issues			
• Demonstrated a command of standard English			
• Created journal entries for:			
▪ Week 1			
▪ Week 2			
▪ Week 3			
▪ Week 4			
▪ Week 5			
▪ Week 6			
▪ Week 7			
▪ Week 8			
▪ Week 9			
▪ Week 10			
▪ Week 11			
▪ Week 12			

“Journaling to Your Heart’s Content”

(Student Instructions/Handout)

Do you like to write in your own diary? Do you like to be creative? You will have the opportunity to think, write, share, and be creative!!



Things to Do:

- Create a journal folder in our network drive.
- Name it “My Journal.”
- Write on the topic assigned each day.
- Start writing after you have logged in on the server.
- Save in your “My Journal” each day

Topics will be fun, serious, thought provoking, things you like to talk about, things that challenge you, things you may have to think about and make a decision.

You will be evaluated on:

- creativity in designing your journal entry format
- content of journal entries
- language arts and technology skills used

Assessment of Journal Entries

Journal entries should be limited to a few paragraphs, each containing at least four sentences; more specific instructions may be given for some journal entries. The topic and purpose for each journal entry should be specified by the teacher. Instructions may include writing the journal entry for a specific audience and/or the student may be instructed to role play in writing the entry. Students should receive constructive feedback that is focused on helping them improve their ability to write effectively. The rubric presented below may be used or modified to assess journal entries.

Journal Assessment Items	Possible Points	Your Points
Does the writing address the topic specified?		
Does the writing contain well-developed thoughts about the topic?		
Does the writing include appropriate detail and elaboration to fully accomplish the assignment given?		
Is the writing organized logically?		
Is the tone of the writing appropriate for the assignment?		
Is the writing coherent and concise?		
Does the writing demonstrate the conventions of correct writing: accurate spelling; correct use of capitals; indention of paragraphs; correct use of periods, commas, and quotation marks; appropriate word choice; and correct grammar usage?		
Was the entry saved to the correct file(s)?		

Assessment of Class Discussions

Class discussion should be encouraged; assessment methods should not be inhibitive to students. Students should receive constructive feedback that is focused on helping them improve their ability to participate in discussions in a meaningful way. The topic and purpose of discussion should be known to students; e.g., the purpose may be to brainstorm, to share points of view, to inform regarding facts acquired through research or another means, or to answer questions posed by other students and/or the teacher. The rubric presented below may be used or modified to assess class discussions.

Class Discussion Assessment Items	Possible Points	Your Points
Do the comments address the topic specified?		
Do the comments show an understanding of the topic and/or purpose of the discussion?		
Do the comments include appropriate detail and elaboration to fully accomplish the purpose of the discussion?		
Are the comments voiced with an appropriate tone?		
Is the voice volume adequate for the class to hear?		
Are the comments coherent and concise (rather than rambling)?		
Does the student use correct pronunciation?		
Does the student use appropriate word choice?		
Does the student use correct grammar?		
Do the comments indicate the student is a good listener?		

Instructions for Creating Activities for Project-Based Learning

Specific Title of Project/Application/Simulation

(Adapted from the Indiana Department of Education Project-Based Learning Curriculum Development Workshop)

Middle School Project

Directions to the Student

In this project, you will complete an activity designed to simulate a real-life application or situation—personal or work related. Your instructor will provide you with your tasks/skills, all necessary materials, and instructions. As you work on the project, the instructor will review your performance with you and answer any questions you may have. The activity described below:

(Activity/Scenario) Be specific enough to make the instructions clear to the student—or attach a student direction sheet.

Your success in this assignment will be determined by your ability to demonstrate achievement of the standards listed below and the tasks/skills listed on the assessment rubric.

Time Allocated to Project: (give an estimate of how many periods/minutes it might take to complete as presented.)

STANDARDS ADDRESSED IN THE PROJECT

- **Middle School Content Standards and Performance Expectations**

(List standards and performance expectations from all applicable areas: Technology, Career Exploration, Personal Finance/Economics, and Business Management/Ownership; see example below.)

BMS-T 3 Social and Ethical Issues of Technology

BMS-T 3.1 Content Standard: Students understand the social, legal, and ethical issues related to technology use. Students practice responsible use of hardware, software, and data. Students interact positively with technology independently and in collaboration with others.
Performance Expectations

BMS-T 3.1.1 Practice respectful and responsible use of technology through abiding by the school technology and Internet use policy.

- **Indiana Academic Standards**

(List standards from all applicable areas—English/Language Arts, Mathematics, Social Studies, and Science—that will be met in the performance expectations; see the example below.)

English/Language Arts

READING: Comprehension

11.2.3 Verify and clarify facts presented in several types of expository texts by using a variety of consumer, workplace, and public documents.

Directions to the Instructor

Student success in this assignment should be determined by how well the student demonstrates achievement of the standards listed in the **Directions to the Student** and the tasks/skills listed on the assessment rubric.

When the workstation has been set up, provide the student with the **Directions to the Student** and any necessary handouts/files/source documents (attach the appropriate handouts, files, and source documents). Explain that evaluation of the project will be based on the student's achievement of the standards given and the skills identified on the assessment rubric. Allow the student to begin when ready and provide information as to the amount of time available to complete the project/activity. Instructions for completion of the project/activity should be delivered to the student in a manner appropriate to the individual student's abilities. Adequate feedback should be given to the students as they work on the project.

Assessment (Rubric)

Student _____ Date Started _____

Date Completed _____ Points Earned _____

** Use the following sample checklist or develop your own rubric (this rubric should be given to the student prior to the beginning of the project/activity).

Evaluation Checklist or Rubric for Activity Title		
<i>Performance Indicators:</i>	Possible Points	Points Received
List the areas to evaluation		

Specific Title of Project/Application/Simulation

Example Output/Solutions

Solutions exactly as the student should have completed each task.

STUDENT HANDOUT(S) ATTACHED

Attach all appropriate handouts that the students will need and make available all source files they may need for the completion of the project/activity.



Student Designed Web Page Rubric

	5	10	15	17
Layout / Design	The pages are unattractive. Text is difficult to read. The backgrounds are distracting.	The pages appear "busy" or "boring." Text may be difficult to read. The backgrounds are somewhat distracting.	The pages are eye-catching and attractive. Text is easy to read. The backgrounds are subtle and appropriate.	The pages are well organized with tables. Text spacing and alignment make reading easy. The backgrounds enhance the page.
Graphics	There are no photos, icons or clip art or they are inappropriate or of low quality.	Photos are blurry or fuzzy; icons and clip art do not "fit" with the topic. Too many pictures make the download time slow.	Photos, icons, and clip art are appropriate, of high quality, and download fairly quickly.	Photos, icons, and clip art are used creatively and may follow a theme.
Information	Information is poorly written, inaccurate, or incomplete.	Information could be better written and too much information is given in each section.	Information is well written and interesting to read and is presented in short sections.	Information is creatively written and cleverly presented.
Navigation / Links	The user may become lost or links may be missing or not working.	The user may become confused when navigating between pages. Some links may not work.	Links are consistent and easy to find so that the user can easily navigate back and forth through pages.	Links are created with images and icons to enhance the text links.
Working Together	Partners argue or fight much of the time and do not share responsibilities.	Partners have trouble solving disagreements; one partner does most of the work.	Partners get along well and share equally in responsibilities.	Partners show respect for one another, get along especially well and work together on all aspects of the project.
Following Classroom Guidelines	Students are often out of area without permission and cause disruptions in the lab and other classrooms.	Students occasionally leave area without permission and are louder than necessary in the lab and in other classrooms.	Students stay in their area, talk quietly to their own partner only, and cause minimum disruptions while visiting other classrooms.	Students are always on task, stay in their own area, and cause no disruptions when visiting other classrooms.

<http://www.essdack.org/tips/webpagerubric.html>

Appendix E: Classroom Computer Configurations

Configurations

(Most of the information in this section is reprinted, with permission, from the publication *Elementary/Middle School Keyboarding Strategies Guide* published by the National Business Education Association.)

Several factors affect the configuration of desks and equipment in the classroom. These include the size of the room, the number of students, the kind of equipment, and the quantity of the equipment. The visual connection between the teacher and the students, and the students and the teacher, is a key factor in arranging the equipment for the introductory keyboarding class. The effective keyboarding teacher should be able to observe individual student responses to instructions, and students should be able to observe and imitate teacher demonstrations with an unobstructed visual contact. Additionally, the classroom configuration should provide the keyboarding teacher easy access to assist individual students as they work.

Four arrangements for the introductory keyboarding classroom are common—the regular classroom layout, the parallel layout, the chevron layout, and the U-shaped layout (single or multiple tier). (See the following page for layout examples)

Regular Classroom Layout

The regular or traditional classroom layout has generally been used for classes in which typewriters were used for keyboarding instruction. However, this style is not as effective with computers because students cannot see the teacher without looking around the computer screen. Additionally, it is difficult to monitor students because the teacher cannot see students' hands or the screen. (This problem can be partially corrected by locating the teacher's desk in the back of the room.) When desks are placed close together, there is limited space for books and supplies. Additionally, there is limited opportunity for the teacher to physically move to individual students, thus making it difficult for the teacher to confirm, correct, and coach students one-on-one.

Parallel Layout

The parallel style of classroom layout makes efficient use of space because rows of desks face each other. However, visual contact between the teacher and students is hampered from several locations.

Chevron Layout

The chevron layout is an effective arrangement when computers are used. Students can see teacher movements and the teacher has a good view of the students' hands on the keyboards. This layout lets the teacher move among the students easily. A disadvantage is that more space is required for this configuration; thus, not as many computers can be placed in the room as with other layouts.

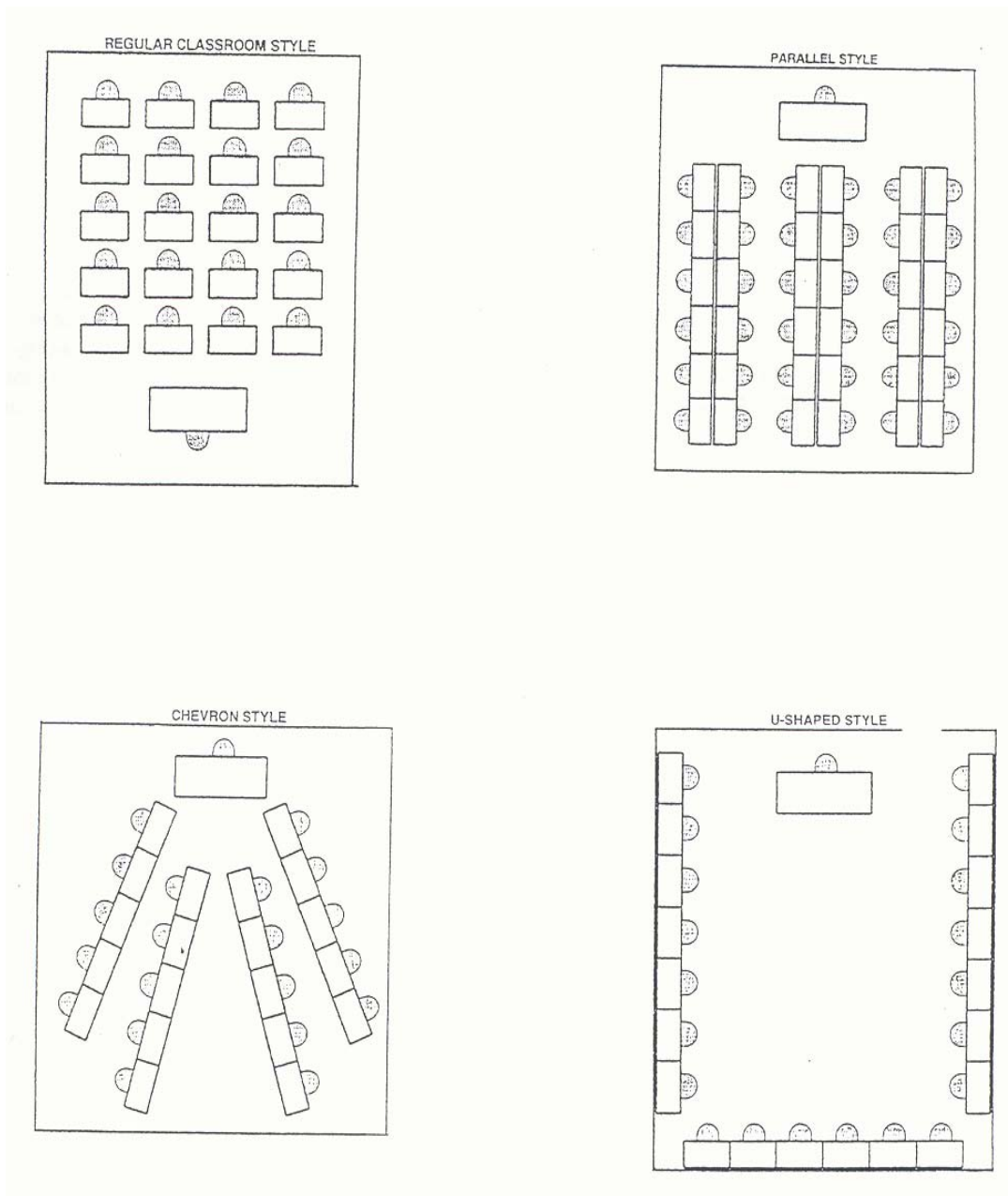
U-Shape Layout

The U-shape layout allows the teacher to view the keyboards and screens from one location. This style also is likely to utilize existing power outlets efficiently. Tables can be placed in the open center space of the classroom for deskwork activities, or the space can be used for bookshelves and storage units. The U-shape is not very effective for the initial keyboarding instruction because students have to turn to watch demonstrations by the teacher. Additionally, the teacher cannot see the eyes of students to check that they do not watch the keys. Where there are two labs, one could be arranged in the chevron style to use for initial keyboarding instruction, and the other could be arranged in U-shaped style for more advanced work.

A variation of the U-shape layout is the use of an additional "U" of computers at a lower level than the outside "U." The computer tables on the lower level could be constructed with an extension on the back for use as a desk by the students sitting in the outside "U."

Room Layout Diagrams

(Printers should be located conveniently in the room layout selected.)



Appendix F: Teaching Early Adolescents

Early Adolescents

(Source: *Keyboarding at the Middle Grades, Curriculum Resource Guide, North Carolina, Summer 2004*)

The information in this section is summarized from “Help! It’s Bart Simpson!” *Vocational Education Journal*, November/December 1990 as presented in the North Carolina Keyboarding Curriculum Handbook, 2004.

Between the ages of 11 and 14, the average gain in height is two to four inches per year; weight, eight to ten pounds a year. Early adolescents can vary in physical stature from the petite child weighing 70 pounds to the tall muscular child tipping the scales at 150. The rate and ability to cope with that growth is unique for each youngster.

What are the physical changes that have implications for instruction of the middle school student?

- As bones form, sitting on hard wooden chairs can be uncomfortable; thus, the wiggling and squirming in class.
- Glands produce an excess of hormones and adrenalin so that a middle school student may feel like running the length of the football field while actually sitting in class.
- They crave food. If they have poor nutritional habits, acne and other skin defects may appear, causing embarrassment and poor self-image.
- Development of a healthy sense of self is very important to early adolescents. Self-concept as a learner accounts for up to 50 percent of school achievement.
- Early adolescents want to learn correct social behavior; they need to know the importance of proper hygiene, how to dress, and how to manage hair and makeup.
- Emotions are very intense; they can lose themselves in the emotions of anger, love, and fear.
- This age group is very idealistic, and they are frustrated when their ideals do not materialize.
- Some students may be so involved in their personal concerns, they may tune out classroom activities.
- Intellectually, early adolescents are usually in transition between thinking based on concrete physical objects to be manipulated and that based on operations in abstract logic. Therefore, classes with concrete operations are a sound practice.
- The formal reasoning process will vary with each student. For example, some students will be able to think abstractly in one subject but not in another.
- Early adolescents are aware of their thoughts; they know when they do not understand and often dwell on their inability to comprehend when they do not understand.
- Imagination is super-active at the early adolescent stage.
- Students respond to tasks that are well defined and that result in rewards when accomplished—badges, stars, prizes.
- Early adolescents need help in developing a conscious morality and a scale of values that will be carried into adulthood.
- Early adolescents need security, success, and support.

Teachers should help students understand that they are at the stage in their life when differences between them and their peers are the greatest. When teachers make it clear that they are interested in the individual student, middle school teaching will be very rewarding.

Emotion and Learning

(Source: *Keyboarding at the Middle Grades, Curriculum Resource Guide, North Carolina, Summer 2004*)

The heart of the motivational process is the general emotional tone of the classroom. Perhaps the **most** important aspect of a keyboarding teacher's effectiveness is the way the classroom climate or atmosphere is created and maintained. If plants are to grow, the climate must be conducive to their growth. In the same way, what is learned and how well it is learned depend largely on the emotional climate created by the teacher.

Anxiety and Skill Learning

Beginning keyboarding is a maze of complexities to the beginner. Those keyboarding students who are most likely to exhibit high-anxiety states (and thus will need special care on the teacher's part) are (1) perfectionists who strongly dislike making an error of any kind, (2) academically strong students who feel that, in keyboarding, they are not doing their usual "A" grade of work, and (3) emotionally insecure students who need constant reassurance from the teacher.

An effective antidote for anxiety in the keyboarding classroom is the "So what?" attitude. It is true that some members of the average keyboarding class already have more than they need of this remedy, and the wise teacher will not indoctrinate them with the "So what?" attitude. On the other hand, high-anxiety students need the reassurance that one bad day will not ruin their record; that any single timed writing is not important in itself; that high tension will usually inhibit skill-building efforts; and that when, after repeated efforts, you don't succeed, it may be a good idea to take a short break.

The extreme of anxiety is reached when the keyboarding student believes that he/she is a failure. For this reason, the stigma of failure is to be avoided in the keyboarding class if possible. Experienced keyboarding teachers are fully aware that teaching so that everyone fails is a simple matter. All that is needed is constant frustration of the student's needs. The goal in teaching keyboarding, then, should be some kind of success every day for every student, achievement of a goal the student believes to be possible for him/her. The following generalizations regarding the effects of failure are:

1. *Failure depresses the action potential.* Cases of psychic paralysis are frequently encountered in keyboarding classes. The student becomes so fearful of failing that he/she does nothing and can only sit with his/her hands frozen on the keyboard.
2. *Failure slows learning.* As has been stated, skilled keyboarding involves quick responses to stimuli. With repeated failure, the keyboarding student hesitates, slows down, and fails to develop the quick stroking action that is required for skillful keyboarding.
3. *Failure causes a moving away from reality.* The daydreamer, the quitter, the discipline problem student—all can be caused by repeated experiences in failure. The keyboarding teacher might well ask himself if he/she has contributed to these problems in his/her classroom. Everyone needs a feeling of success. The effective keyboarding teacher will do everything possible to make success with effort possible for every student. Many kinds of successful experiences are available in the keyboarding classroom: improved posture, improved techniques, fewer errors, more words per minute. A good maxim might be to forget absolutes in the early stages of skill learning and concentrate on improvement.
4. The effect of failure is cumulative. One failure is damaging; two failures are much more damaging; and so on, as the student experiences successive feelings of personal failure. Perhaps the most difficult motivational problem is the student who feels he/she is no good, that his/her case is hopeless, that he/she is—in short—a failure. Individual student progress in particular, and class morale in general, will be improved if these feelings of failure can be eliminated from the keyboarding classroom.

The keyboarding teacher, in applying the foregoing principles, will do everything possible to create a pleasant, non-critical atmosphere in the keyboarding classroom. Some of the avenues open to him/her are:

1. Keep anxiety at a minimum by eliminating anxiety-causing stimuli as far as possible. Such stimuli include the use of letter or percentage grades except when needed for grading-period marks; use of negative criticism of an individual student in the presence of other students; and use of negative criticism to the class as a whole. Positive comments should be given to the class if possible. If a serious problem must be discussed with the class as a whole, the teacher will do well to keep the tone neutral and businesslike.
2. Take individual differences into consideration when using negative criticism. In general, negative comments should be kept moderate and should be followed by a positive suggestion. Such a statement as, “Class, you’re falling asleep. Let’s all sit up straight, take a deep breath, relax your wrists, and really try this time to reach 2 more words than you reached on your last try,” is far more effective than a strong, critical comment.
3. Specifically, use positive comments with younger students, girls, slow learners, and introverted students (perhaps because they have less experience with positive comments). Negative comments can be used somewhat more freely with older students, boys, fast learners, the well adjusted, and the extroverted students (who have, perhaps, had the experience of more praise in their younger days). Moderation even in these cases should, however, be kept in mind.
4. In general, positive comments should be used for those activities the teacher wishes to instill in the students: good techniques, keeping a steady pace, efficient handling of materials. Negative comments should be used only for those activities the teacher wishes the student to remember, dislike, and avoid.

Motivation

One of the dilemmas of the keyboarding teacher is how to fill every minute of the class hour with constructive activity without seeming unduly autocratic. Research has shown that one of the ways out of this dilemma is to be aware of the importance of the positive approach. It does take care and thought to develop good teacher-pupil relationships, but the excellent results usually found make the effort worthwhile. For example, a child’s acceptance of the order and rules necessary for any social function might be slower when he/she is treated with friendliness, warmth, and respect, but he/she is more likely to acquire a sense of self-direction and will not require supervision for as long a period of time.

Great Expectations

An outgrowth of the positive approach is the use of “great expectations” of the teacher. In fact, the teacher who tells his/her class that he/she knows they are going to achieve will very likely find his/her class achieving. Higher expectations should be used frequently and “demands” should be reserved for those situations in which the induced behavior is important for the child or the group and where the behavior is not likely to occur spontaneously. The demand carries the implication of possible punishment. Expectation, on the other hand, carries with it an implication of reward and approval if the expectation is met.

The efficacy of expectation has been proved experimentally. For example, teachers who were told that certain students had unusual potential (when such was not the case) discovered these students did in fact achieve far beyond the prediction of their IQ and other test scores. The keyboarding teacher might experiment on his/her own to see the results of showing the class, both verbally and nonverbally, that he/she knows they are going to do well. Nonverbal expectation is especially effective: a smile, a nod, a look of warmth—these and other manifestations of approval and expectation of continued improvement seem to cause improved morale and thus improved performance.

Written Comments

Green reports a study by Page in which an objective test was administered. On one group of papers the teachers made no written comments; on the second set, they were free to write any comment they considered appropriate; on the third set, certain prescribed comments were assigned by the experimenter (ranging from “Excellent, keep it up” on A papers to “Let’s raise this grade” on F papers). The papers were then returned to the students and the results of a second objective test compared with the first. Those students whose teachers made free comments did the best on the second test, and those whose teachers made no comments did the worst. It appears that one of the *most* effective motivational tools a teacher can use is sincere written comments on student papers. “In any case, it seems apparent that appropriate comments can improve the motivating effect of grades and in particular can mitigate undesirable effects of failure grades.”

Use of Meaningful Material

Another kind of motivation comes from early use of meaningful material. The student is thrilled with the opportunity to key a complete sentence during his/her first day or two in the keyboarding class. The same spur to continued effort comes from early keying of paragraphs, personal notes, and other simple applications.

Recognition of Progress

Anything that gives a student a feeling of accomplishment is a powerful aid to motivation. The posting of “new highs” for each student is one way of doing this. Another is any individual recognition of a student’s progress. The teacher might have as a goal the growth of each student, in some way, every day. Rewarding this growth by daily recognition is highly motivational.

Since the purpose in checking is to give knowledge of accomplishment to the child who did the work, self-checking is *most* effective. Each student should keep some kind of record of his/her progress, but one that is not too time-consuming. A ruled form with columns for recording each one-, two-, three-, and five-minute writing will help amazingly in providing both motivation and confidence for the student.

We have seen that competition is an effective form of motivation with children, but that its usefulness is limited by its disruptive effect on individual morale and on group interaction. Competition between students will tend to encourage the same few students while discouraging the larger number who do not win. The *most* effective kind of competition, then, is self-competition; and the teacher should so design the class period that the main portion of the time is spent with each student competing with himself/herself and striving to improve upon his/her previous record. It is true that some students enjoy competing with each other. If this spirit of friendly rivalry is found in a classroom, the teacher may match students of equal ability. The danger in this practice is in matching the more skillful students with those students who have not developed the same skill level.

Another form of desirable competition is that between groups. This may be provided by dividing the class into rows—the odd-numbered rows competing against the even-numbered rows. Further rivalry may be provided by having one row watch the next in order to evaluate their techniques. Any number of ways of providing competition may be used, just so the same students do not win all the time.

Repetitive Practice

Sheer repetition without indication of improvement or any kind of reinforcement (reward) is a poor way to attempt to learn. Learning to key *is not* just a repetitive drill process. The student *must* develop

understanding and concepts along with the development of skill. Each drill or exercise that the student types *must* have a purpose, and that purpose must be known to the student. If the purpose of a drill is to increase the student's rate by 5 words a minute, the student should know this.

The meaning and purpose of the drill will be intensified if the student indicates at the beginning of each drill just what he/she is trying to accomplish by keying this drill. If the student is keying at 35 words a minute and is trying for 40 words a minute, he/she might key at the top of his/her paper: "Goal—40 words a minute." Fixing the purpose of the drill activity firmly in his/her mind is very helpful to the student in attaining that goal.

We do not learn merely by doing, but by purposeful practice and insight. Insight is known to take place between practice periods, so some of our *best* skill learning takes place while we are not practicing at all. The important thing is to place stress on little techniques that contribute to forming correct habits and then to develop those correct habits so that they become permanent ways of responding.

Learning *does not* depend upon drill alone. In order to gain from repetition, there must be a new result or a new outcome. There must be improvement – in control, in speed, or in perfection of technique—each time an exercise is keyed. What is gained in one attempt must be transferred to the second. Each try must carry with it at least a little insight as to the pattern of movement or understanding that the student is seeking; it must be one more step toward the solution of the problem. Therefore, repetition without purpose or progress fails to contribute to learning. Without a purpose that is understood, there cannot be effective learning. There should be repetition, but it should be for a purpose, such as perfecting certain reaches, finding patterns that will attain higher speeds and permit greater control, acquiring understanding and patterns that permit the solving of a problem.

Practice Periods Must Be Well Spaced

Skill in keying may be defined as a response, mental or motor, that is performed the same way, automatically. In reality, keying is made up of many skills, performed more or less in concert. This definition implies that automatic response in using these skills under a variety of conditions is one of the tests of keyboarding proficiency. Thus, it is reasonable to conclude that keyboarding cannot be learned or taught in a few hours. Many hours of practice and instruction will be required. In general, many short periods of practice are preferred to a few long ones. The periods between practice sessions permit mistakes to drop out. Moreover, short drill periods make it easier for the teacher to keep motivation at a high level.

The principle of spaced practice has great pertinence for the teacher of keying in scheduling practice sessions. Some drill work should be included in each lesson. The drills should be varied, and provision should be made for returning to a drill or to a drill type frequently enough for the students to gain further improvement in some phase of their keying skill.

Middle School Routine Sample

Teaching middle school students is always a challenge with lots of twists and turns. Yet, the middle school students need “definites” and “certainty” as well as flexibility. It is recommended that a routine be developed for the beginning of class, the end of class, etc. However, it should not be structured so that students can predict what will happen every minute of every day. A sample of ideas follows. These activities are teacher-driven and need to be prepared for the students. The Internet has a wealth of ideas for consideration. Students should know what to expect including the instructional content you will be teaching for the day. Each day of the week can have a specific focus so students will know the general nature of the activities for a given day of the week; an example is shown below.

Monday	Concentration Monday -- Concentration drills for practice
Tuesday	Tech-Know Tuesday -- Technology current events (see activity sheet on next page)
Wednesday	Speedy Wednesday -- Speed drills for practice
Thursday	Technology Thursday -- Technology learning ideas
Friday	Fun Friday -- Fun learning activities vs. book work (chosen by the teacher)

As with any class of students, do something to catch their attention at the beginning of each period. Give a brainteaser (sometimes referred to as a brain cleanser) to get them thinking (e.g., Market Mix-Up shown below). It may be simple or complex, something to do with the lesson or not, just something to get them thinking before starting class. Have the daily brainteasers on an overhead, the chalkboard, whiteboard, or on a projector at the beginning of the period—students will let you know if it’s not there! They actually begin to look forward to it each day. It should not interrupt your instructional time and should use only 2-3 minutes of time. Variation of activities is essential to keep the attention of the middle schooler.

Market Mix-Up

Craig operates a homegrown vegetable market where he sells corn, tomatoes, and peppers. During today's sales he lost track of the number of customers that bought something, but he did have the following information:

A total of 46 people bought corn, 67 people bought tomatoes, and 43 people bought peppers. But some of these people bought more than one kind of vegetable! In fact, a total of 25 people included tomatoes and peppers in their order, while a total of 32 people included both corn and tomatoes. In addition, Craig knows that 10 people bought all three kinds of vegetables. No one bought only corn and peppers.

How many customers bought at least one kind of vegetable at Craig's market today?

Source: <http://www.eduplace.com/math/brain/>

Another focus in the classroom is the use of class journals. Having students’ write journal articles pertaining to a variety of topics, class assignments, weekly technology issues, etc., is an excellent way to have students reinforce their language arts skills as well as work on technology issues. It is essential that the students begin the transition from writing on paper to composing at the keyboard.

Tech-Know Tuesday Assignments



Today you will be finding an article pertaining to technology. You may choose your own article as long as it is **not about gaming!!**

Get it approved by your teacher before you begin. It must be more than a 2-paragraph blurb. An article consists of several paragraphs. Be sure to include your reference notation.

You will read the article for content and make notes on the computer pertaining to the material. Write a 3-paragraph summary (approximately $\frac{3}{4}$ of a page) of the article you have read.

Ask yourself questions when you read the article; the following are examples of the kinds of questions you could ask yourself:

- ① How has this technology influenced people?
- ① Why is this technology important?
- ① Who will use the technology?

After you have completed your summary, save a copy in your Tech-Know folder, print a copy, place it in your portfolio binder, and e-mail a copy to your instructor.

Appendix G: Keyboarding Instruction

Basic Principles of Keyboarding Instruction

(Source: *Keyboarding at the Middle Grades, Curriculum Resource Guide, North Carolina, Summer 2004*)

The psychological principles of learning and skill building are important in the teaching of keyboarding. Because keyboarding is a psychomotor skill, attention should be given to proper instruction from the very beginning to assure that students develop correct skills.

All keyboarding teachers should be familiar with the following 16 key principles.

① **Materials used for keyboarding presentation and practice should consist of normal prose in word and sentence form.**

Students will progress more rapidly if they use words and sentences in their beginning practice materials. The skill used at the beginning should be based on what students will be expected to do after acquiring the skill.

Curriculum materials should be reviewed to be sure that this approach is used. There are a number of software packages that feature the extensive use of nonsense (fff frf...) material or keying material in all capital letters. These do **NOT** contribute significantly to the building of keyboarding skill.

② **The keyboard should be presented in an order that allows for early keying of words and sentences.**

Keys can be introduced so that students will use words on the first day of instruction. While nonsense material may be used to learn reaches and to learn the feel of typing a new key, the use of each key in words and sentences is important at the beginning. Keyboarding textbooks from the major publishers for Business and Information Technology Education follow this presentation of letters.

③ **Introducing the home row first followed by the “skip around” method to introduce other keys seems to have the most merit.**

Effective instructional materials will introduce keys using different fingers in each lesson. The textbooks will not introduce at one time all of the keys typed by one finger.

④ **At least 20 lessons should be used to present the keyboard.**

Keyboard introduction includes all of the letters, numbers, and symbols. Students at the middle school level have short attention spans. Lessons will typically last 30 to 35 minutes. Students should not be introduced to so much material at one time that they cannot remember the keys. This will inhibit the learning of the touch method.

Keyboarding materials for adults introduce larger numbers of keys in each lesson because it has been found that adults can move along much more rapidly when learning keyboarding.

⑤ **Students should not be kept from looking at their hands when first learning the keys.**

Students must be able to see and feel the touch and reach for the key when learning it. While looking at the key may be all right while learning to strike the key, it should be discouraged after the initial stage. Students should locate the key being introduced by looking at the key. The teacher should then be sure that each student is using the correct finger. The next step is for the teacher to dictate the keystroke as students watch their finger type the key and return to the home key. This step will be followed by

dictating the home row key and then the key which is to be learned (assuming at this point that the home row has been taught).

With this assurance, the teacher will then have the students strike the home row key, the new key, and the home row key with a space following to be sure they learn the feel of the reach. The students will then check their screen or copy to be sure that they are striking the correct keys. Materials from the student text related to this new key can then be used by the teacher for individual and dictated practice.

☉ Vocalization increases the intensity of the stimulus, leads to better stroking and quicker responses, focuses the student’s attention on keying, and contributes to more effective learning.

When the keys are first introduced, it is recommended that the teacher dictate the keys in the practice material in a crisp and paced manner so that students will learn to strike the key with a staccato touch. The teacher can set the pace in the initial learning stage by dictating letter by letter the initial practice material. This will also force quick stroking and a development of a pattern for stroking similar to that of the skilled individual.

It should be noted that kinesthetic feedback develops slowly; therefore, outside reinforcement by the teacher is necessary during the early stages of motor skill development. The student should develop the feel of the reaches. Early errors and awkward keystroking techniques should be ignored. Everyone makes mistakes when first learning a new skill. However, this should not be confused with such incorrect techniques as “flying” elbows or poor positioning of hands.

☉ Research has shown that a “speed approach” to keyboarding is superior to an “accuracy approach.”

Let the student learn the correct movement first and get the feel of keying data. Do not be overly concerned about errors as long as the student is in control. Slow the student down if the error rate is very high. After the student has learned correct keying techniques, then accuracy can be emphasized.

☉ Speed and accuracy should be developed separately.

Students cannot develop speed and accuracy at the same time. Force the students to develop speed. The student must get the feel of keying at a faster speed, and the fingers should have a snappy movement. After this type of practice, the teacher should have the students reduce the keying speed to a comfortable level at which errors are reduced. **Do not** try to develop speed and accuracy in the same lesson. However, when conducting speed development exercises, the teacher may sometimes deliberately slow students to achieve control.

☉ Pacing or speed forcing is desirable for developing speed, improving keying motions, and decreasing students’ dependence on sight.

Speed is developed through short bursts of speed—usually thirty seconds to two minutes. Pacing can be used with marked materials that give the number of words at intervals, e.g., every four words. This will allow the student to set a goal for each 15 seconds. The teacher, using a stop watch, can call the 15-second intervals, at which time the student will know whether to key faster or slower to achieve the desired goal.

Ⓢ Accuracy consists of keying at the correct speed.

Once students have been forced to a new level of speed, the teacher should help them work for control and accuracy. If the student continues to make errors, the teacher should set a speed and use marked copy. The student should determine where in the copy to be at each fifteen second call from the teacher. If the student is ahead of the word marked, the keying should be slowed.

The procedure for gaining control will be similar to that of speed building except the goal will be to key at a slower rate with greater control. Remember that even experts make errors.

Ⓢ All keying tasks should be based on goals that are appropriate for each student.

Students will progress at different speeds. After being introduced to the entire keyboard, it will be necessary for students to be helped in setting their personal goals. It is **not** appropriate for students to try to key at speeds beyond their ability.

Ⓢ Modeling is an effective strategy for presenting proper keying techniques and key reaches.

Students must see how a skill is to be executed. The teacher should use a keyboard located so that students may see the correct response. Modeling is an effective technique. Individuals who coach others use this technique all the time—demonstrating what is correct and how to do it.

Ⓢ Students should always know the goals of the lesson or practice.

The teacher will give attention to explaining the procedure as each new item is introduced and taught. In addition, the student should be told what should be accomplished as a result of the activity.

Ⓢ In order for practice to help the student, it must be a directed activity with a specific goal.

Students **must** be given directed practice if it is to be helpful. This is a basic principle used in any kind of coaching activity. Unless this is done, there will be little or no progress.

Ⓢ Observe students closely in the beginning stages for use of proper technique and to be sure they are learning the keyboard.

If a student has not learned the location of keys in the beginning lessons, it is important that the teacher not continue to introduce new keys and techniques. Remedial work with computer software may allow the student to review the beginning keys and those not learned before proceeding. The student will be more successful in learning to key if this is done.

Ⓢ Unlike music, keying does not have equal time between strokes.

Therefore, do not force students to type to music or any other rhythmic beat.

General Principles in Teaching the Keyboard

(Source: *Keyboarding at the Middle Grades, Curriculum Resource Guide, North Carolina, Summer 2004*)

Certain general principles should be considered in teaching the keyboard:

1. In the main, short two-, three-, and four-letter words should be used in the practice material for initiating keyboard control. Balanced-hand, rather than one-hand, words should predominate in order to facilitate the development of good stroking from the beginning. It is far easier to develop good stroking on the words *do* or *for* than it is on the words *as* or *see*, for example.
2. Only those nonsense-stroking combinations, which promote good stroking, should be used. Such drills as *uj*, *ed*, and *nj* are effective because they emphasize quick release of the reach stroke and rapid return to the controlling home key. Such drills as *ffff*, *jjjj*, or a line of some other letter, are not good after a key has been located, as they then serve no useful purpose and may tend to develop lackadaisical repetition of the letter with no attention to correct techniques.
3. Harmful pairing of keys should be avoided in presenting the keyboard. After one letter of a pair has been presented, the other should be deferred for a lesson or two.
4. The reach-strokes that are most difficult to execute for most students, such as the reaches to *b*, *y*, and *z*, should be given more emphasis than the other letters. More drill lines should be provided for these difficult reaches, and they should be reviewed frequently in subsequent lessons.
5. Every effort should be made to see that students master the keyboard. The keys taught in one lesson should be reviewed intensively at the beginning of the immediately following lesson. In addition, there should be a cumulative review of all previously covered keys.
6. The goal in keying is stroking continuity, not the stroking of isolated letters; rather, the student should acquire a flowing, rhythmic style. In the first lesson or two, the students should key simple words, phrases, and clauses. No later than the second week, they should be keying short, easy, but meaningful sentences and paragraphs.
7. A definite pattern should be followed in locating a new key. The teacher should help the students locate the new key in relation to the home-row key. If the visible keyboard is used, the student should look at it to see the pathway of the finger from the home row to the new key.
8. One or more review or consolidation lessons should be provided within the letter keyboard unit. Several such lessons should separate the introduction of the letter keys from the number and symbol keys.
9. After the new key has been located, the teacher should demonstrate the correct technique of stroking that key. After the stroke has been imitated a few times, the teacher should dictate the letters in the exercises while the students keep their eyes on the book and key letter-by-letter. The rate of the first keying should be not more than 10 or 15 words a minute. Emphasis should be on correct stroking only.

Plan for Teaching New Keys

Classroom time will be saved if the teacher adopts a uniform plan for teaching new keys. The following plan includes all the steps that should be followed. The plan, furthermore, arranges these steps in a logical order.

1. The student should find the new key to be learned on the keyboard chart in his/her textbook. If there is a large keyboard chart in the front of the keyboarding classroom, the teacher can also direct the student's attention to it.
2. Using the visual and word cues provided in the textbook, the teacher should emphasize the finger that should be used in striking the new key.
3. The student should locate the new key on his/her keyboard.
4. The student should be directed to place his/her fingers over the home keys and to make the reach to the new key as he/she watches his/her controlling finger move to and from the key.

5. The student should be directed to type a tryout drill as the teacher dictates it. The student should be permitted to glance at his/her controlling finger momentarily if he/she needs to re-establish correct direction and movement.
6. Upon completion of the “tryout drill,” the student should be directed to check the keying on the screen to see if the correct strokes have been made. The teacher should pay little attention to misstrokes. These are to be expected in this initial stage of learning a new key. Striking the key with the correct finger is important, and the teacher should expect all students to adhere to this principle from the beginning.
7. After the “tryout drill,” the student should be directed to type the location and technique drills. The location drill stresses correct finger assignment and movement. The technique drill states the technique and form goals that should be observed as the student keys. Part, if not all, of these drills should be dictated by the teacher (or by tape or disc) at 10 to 12 words a minute.
8. Finally, the student should key a drill stressing continuity keying. This drill includes the new key in context copy in which keying at a steady, even pace is stressed. Throughout the class period, the teacher should do as much floor work as possible to make sure that the correct finger assignments are being observed and that desirable techniques and patterns are being formed and established.

Pace of the First Lessons

The first lessons should be keyed at a controlled, easy rate. The students should be keying all through the class period, but all feeling of hurry or forcing should be eliminated. Continual stress should be placed on the action pattern—not upon the result, either speed or accuracy. The teacher should demonstrate each action pattern and explain in a few simple words the kind of performance wanted from the students. They should imitate the pattern, but not necessarily the result, of the expert. Praise should be liberal, and the students should leave each class with a feeling of accomplishment.

Technique Reinforcement

Business and Information Technology Education teachers have found that repetition is important in technique reinforcement. Teachers may use the following review before keyboarding activities:

- Sit up straight
- Curve your fingers over the home row
- Hold your wrists up and even (not resting on the equipment)
- Keep your eyes on the screen (or keep your eyes on the copy)
- Keep your feet flat on the floor

This may quickly go to abbreviated reminders as follows:

- Sit straight
- Fingers curved
- Wrists up
- Eyes on screen (or eyes on copy)
- Feet flat

Reinforcement of these techniques is critical for the learning process **AND** to prevent repetitive stress injuries such as carpal tunnel syndrome (CTS).

Introducing Letters

The steps in teaching a new key are enumerated below. Because keyboarding is a psychomotor skill, the more senses involved in the learning process the more effective the learning. Follow the steps below each time a new key is taught.

1. Students locate the key on their keyboard by looking.
2. Teacher asks them to hold up and point to the finger to be used.
3. Teacher demonstrates the keystroking technique to be used.
4. Teacher dictates the new letter and directs students to strike the key only as it is called.
5. Teacher dictates the letter and the students strike the key as they watch their finger make the reach and return to home key position.
6. Teacher dictates the letter again and students strike the key as they watch their finger make the reach and return to home key position.
7. Teacher directs students to look toward the front of the room and dictates the letter again. Students strike the key without looking either at their fingers or the machine.
8. Teacher has the student check the copy to confirm the accuracy of the response made without looking.
9. Teacher dictates a tryout line as students follow the copy in the textbook and type each letter, combination, or word on cue.

Strategies for Building Speed

Reading/keying response patterns. In all keyboarding there seems to be a basic rhythm. Some words are typed slower (at a letter level of response) than this basic rhythm; some words are typed faster (word level of response). The following examples indicate normal keystroking patterns for different kinds of copy.

One-hand words. You set up my tax case only after you saw my card.

The words in the above sentence, even though short, are keyed by letter and sound metronomic.

Balanced-hand words. She did lend a hand when they did the work for me.

The above words are keyed with so little time between strokes that they are heard as word responses.

Balanced- and one-hand. If you do go to the city, get the six tax forms.

A mixture of balanced-hand and one-hand words requires a combination of the first two response patterns.

Follow these procedures for building speed:

1. Dictate and key the first word in a line of short balanced-hand words to students. Have them watch and listen. Be sure to point out that the space bar stroke is made as a part of the word (students should not pause before they hit the space bar). Have students say and key the word the same way. Continue this procedure throughout the line of practice.
2. Next have students say and key the line with you as you set the pace at a comfortable rate. Remind students not to let their hands bounce as they quicken their pace.
3. Repeat the above steps when keying two- and three-word phrases. Dictate the words as phrases—not as individual words.
4. Repeat at a slightly slower pace.
5. Repeat at an in-between rate.
6. Administer a half-minute timed writing on each of the lines of practice as you watch for proper space-bar timing and finger action.

7. Have students compare their rates on balanced-hand words with their rates when keying phrases or combinations of balanced-hand words and phrases.

The above procedures should be repeated periodically. Use of exercises of increasing speed and complexity will encourage variable rhythm and will help students adjust to the various kinds of keystroking patterns.

In using this type of practice, encourage students to read and think the word and to give careful attention to the sequence of letters within the word. Explain that as one finger is completing its reach stroke, another finger should be prepared and on its way to the next key. Demonstrate and have students practice the variable response patterns often. Be sure students hear the differences in the sounds of each response pattern. If they do, rhythm develops rapidly and their keying speed increases.

Teaching the Students to Use Good Techniques

Correct stroking and operational techniques should be taught from the beginning of the keyboarding course. The teacher should demonstrate a reach stroke to the students the first time the reach is encountered. Short verbal explanations should be given as needed. The students should be required to imitate the movement pattern of the teacher. Movement patterns should be reviewed from time to time to aid students in refining and developing the techniques used in operating their keyboard. In addition to teacher demonstrations and periodic reviews, two aids may be used to develop techniques: specially designed drills and technique check sheets.

Specially Designed Drills

Special drills to develop or improve techniques are included in most textbooks and software on keyboarding. They are also included in a number of supplementary drill books. As a rule, these drills are short. They focus the attention of the student on the specific technique to be improved. They may be keyed by the entire class for general improvement or only assigned to students who need remedial help.

Technique Check Sheet

A check sheet helps the teacher to evaluate objectively the keying techniques used by individual students and to bring to their attention technique points that need attention. A separate sheet is used for each student. See your textbook and/or examples shown in this *Keyboarding Resource Guide*.

Techniques-Speed Approach “Don’ts”

The techniques-speed approach has many advantages, such as building skill on the firm foundation of correct techniques, the deferring of end-product evaluation until such time as the student is ready for it, and the removal of “method limits” which might be set if faulty techniques become habitual. There are, however, some procedures which should be avoided as being inhibiting or time-wasting. Some of these procedures are as follows:

1. Avoid the “front of the room” type of teaching. Students will not be made nervous from the teacher’s walking observations, once it has become the customary practice. This walking observation of the student by the teacher should, of course, be done in a spirit of helpfulness.
2. Avoid excessive testing. More teaching and less testing might well be adopted as a motto for keyboarding classes.
3. Avoid allotting too much time to straight-copy practice. The ultimate goal for a keyboarding class should be an adequate day’s work on typing application problems. Sufficient practice on such material must be given, and straight-copy practice should be considered a means to this desired end.

4. Avoid forcing for speed too early. In the beginning lessons, the students should try to imitate the pattern of the expert, not his/her speed or accuracy. There is as much danger in trying to force speed too early as there is in not forcing it at all.
5. Don't rely on practice alone. Practice without purpose is meaningless. There should be definite purpose or goal supporting every drill and every exercise; the students should know this goal, and they should then try to attain it.
6. Avoid talking too much. Explanations should be given when needed, but they should be short and to the point. Students learn to key by keying in the right way—not by listening to teachers talk about keying. An ounce of “showing” is worth a pound of “discussing.”

Accuracy in the Techniques-Speed Approach

Those who advocate the techniques-speed approach recognize accuracy as being an absolute must in ultimate keying skill; and they recognize appropriate speed as necessary, too. They believe, however, that the way to achieve both speed and control is through building into the mind and the fingers the right techniques of stroking, and reading the copy. This method seems far superior to that of working for speed without regard to the way speed is achieved, or working for accuracy without seeing to it that it is the outcome of the use of right techniques.

If appropriate speed is first achieved and the students are then guided to reduce speed for control, and if the speed and control are based on the use of the right techniques, there will be inevitable success in the students' efforts to learn to key correctly using the touch method. This is the function of method—to guarantee success on the part of those who do the *amount* of practice and the *kind* of practice needed for the degree of skill that is expected.

Building Speed and Accuracy in Keyboarding

Research

Researchers, including Drs. T. James Crawford and Leonard West, have documented that emphasis on speed should precede emphasis on accuracy in teaching keyboarding. Most of the research in this area was done in the 1940s and 1950s. The learning theory on which these studies were based has not changed; consequently, additional research with regard to whether speed or accuracy should receive the initial emphasis in keyboard learning has not been deemed necessary. In his book, *Acquisition of Typewriting Skills*, Pitman, 1969, West discusses the learning procedures involved in keyboard learning and the research that has been done. In that book, West establishes “rules” for the acquisition of typewriting skills. His Rule 8-3 (page 174) is as follows: “The proper emphasis during early training, both for keyboard learning and keystroking techniques, is on stroking speed.”

The following paragraphs from West’s book (beginning on page 173) give the rationale on which Rule 8-3 is based:

Emphasis from the start on high stroking speed is required not only for fostering ballistic motions, but also for rapid and efficient keyboard learning. It is S-R contiguity [*S stands for stimulus and R stands for response; contiguity refers to “things,” e.g., the S and R, occurring close together*] that is at stake here; one learns soonest what motion to make to strike *r* when the delay between perceiving the *r* in the copy materials and making the stroke is minimal. By rushing the stroke, one minimizes keyboard-learning time. Historically, from the earliest days through the middle 1940s, typing instruction emphasized stroking accuracy first, last, and always. This traditional emphasis is in flat violation of the fundamental requirement for minimum delay between perception of copy and stroking. For that reason, it was foredoomed. Lloyd, in his history of American typing textbooks (1951), points to the “trend” toward early emphasis on speed beginning in the 1940s; however, no “trend” may be taken, in itself, as evidence for merit, for there are bad as well as good trends. The requirement of high speed for the sake of maximum S-R contiguity is nicely demonstrated in DuFrain’s typing experiment.

Among the several speed-accuracy investigations that have been carried out in typing classes, the one by DuFrain (1945) introduced the contrasting emphasis from the start; in the other experiments in this area, the contrasted emphases were introduced at somewhat later stages of training. In the DuFrain experiment, one group of classes was urged toward accuracy, the other group toward high stroking rates. On five tests administered at intervals throughout the semester (starting in Lesson 9), the speed group was from 4 to 7 wpm faster than the accuracy group. The accuracy group was significantly more accurate (as measured by number of errors per 100 strokes) on tests during the first ten weeks of instruction; thereafter, the two groups did not differ significantly in accuracy. One sees here that immediate emphasis on speed results in continuously superior speeds and given an appropriate amount of accuracy practice later on, just as high accuracy as that achieved by students continuously practicing for accuracy.

Teaching Methodology

After students have learned the alphabetic keyboard (by touch), the following procedure may be used to help students develop speed and appropriate accuracy—in that order. This procedure is explained as “pacing” in many keyboarding textbooks. At various times during the procedure, have students rest by letting their hands hang at their sides. Instructions and encouragement can be given during these brief rest periods.

1. Define for students the meaning of a “control rate” and a “speed rate.” A control rate refers to keying at a pace that feels comfortable and that yields accuracy of no more than two errors a minute (or whatever the current goal for accuracy is). A speed rate is a rate at which they feel pushed to meet a speed goal. Meeting the speed goal (with good technique) is the only concern.
2. Select a practice paragraph from the text that has marks throughout the copy for one-word intervals. If there are 30 words in the paragraph, the copy will have dots to designate one-word increases and numbers to designate two-word increases.
3. Give the students a one-minute writing on the paragraph; ask them to type at their control rate. Have them check to see whether they were within the accuracy limit designated. Repeat the same paragraph with the same goal—control.
4. Have students use whichever of the writings in step 3 had errors within the accuracy limit to mark the copy for a speed goal. The students divide their one-minute control rate by two to find their one-half minute control rate. They divide each one-half minute by two to find their quarter minute control rates. For example, if a student had a control rate of 22 words a minute, his/her one-half minute control rate is 11; his/her one-quarter minute control rate is 6 (rounded); and his/her three-quarters control rate is 16 (rounded).
5. Now, using a new paragraph, have the students set a speed goal that is four words a minute faster than their control rate (step 3). Have them put light pencil marks in the copy for one-quarter, one-half, three-quarters, and one-minute goals in the copy. For example, if the control rate was 22 words a minute in step 3, the new one-minute goal will be 26 words a minute. The one-half minute goal will be 13 and the one-quarter and three-quarter goals will be 7 (rounded) and 19 (rounded), respectively. (Students exceeding the accuracy limit designated in step 3 should mark their copy for the slower of the two writings in step 3.) As the students type, the teacher calls out “quarter,” “half,” “quarter,” and “stop” to pace the students. If students are behind, they should try to speed up to achieve their speed goal. Repeat the paragraph, with pacing, two times.
6. Now, using a new paragraph, have students who made their speed goal both times in step 5, mark their copy (at the one quarter, half, three quarters, and one minute points) for a new speed goal four words higher than their former speed goal. Students who did not make their previous speed goal should mark the new paragraph for the same speed rates as they had on the previous paragraph. Repeat the paragraph, with pacing, two times.
7. Students should now go to a new paragraph. Those who achieved both speed goals (they are typing eight words a minute faster than their initial control rate) should mark this new paragraph (as previously) for a new control rate that is four words a minute higher than their initial control rate (the same rate as that used in step 5). These students should now feel “comfortable and accurate” typing at this new control rate. Students who have not achieved their speed goals continue to work on their speed goals. Repeat the paragraph, with pacing, two times.
8. Continue this procedure as time and student concentration permits. At the end of this practice, have each student record (in a notebook or other designated place) the date and the goal he/she was working on. The next day, students would resume working on the appropriate goals.

Suggestions for Teaching Proofreading, Editing, and Revision Skills

The following procedures are suggestions to help students improve their proofreading, editing, and revision skills.

1. Have students proofread written material several times, focusing on a different aspect of the document each time
 - a. Proofread for formatting
 - b. Proofread titles and subdivision headings
 - c. Proofread tables and other nonparagraph material
 - d. Proofread for good organization—an introduction that fits the situation; appropriate content that is complete, accurate, and concise; a closing that fits the purpose of the document
 - e. Proofread for good paragraphing—one topic per paragraph; content and tone that fits the audience; transition within and between paragraphs
 - f. Proofread for correct word choice and interesting writing—read the document aloud; have someone else read it
 - g. Proofread for correct grammar, punctuation, and spelling
2. Use peer teams to proofread each other's writing
3. Give students practice in proofreading by giving them material containing various kinds of errors and having them create a correct copy
4. Create handouts that students can use as a guide for comparing/contrasting their writing

Breaking Bad Habits

(Source: Keyboarding at the Middle Grades, Curriculum Resource Guide, North Carolina, Summer 2004)

It is easier to develop a new habit than it is to break an old habit pattern. Keyboarding teachers, especially beginning ones, express deep concern over their students' "bad habits." Looking at the keys as they type is one habit that is frequently mentioned. Most of these teachers have discovered that saying, "Don't look at your keys," seems to imprint the habit pattern more deeply in the student's mind. Psychologists seem to be unanimous in their opinion that the wrong response should not be emphasized. In keyboarding, the teacher should show the student what to do rather than call attention to his/her error. Instead of saying, "Don't look at your keys," the teacher should say, "Eyes on copy, class."

What if the student continues to look at his/her keys? There are some habit patterns that cannot be eliminated by calling attention to a better way. Since insecurity to key locations is part of the cause of the formation of this habit, the remedy is probably more work on the beginning lessons until the student is secure. In severe cases, it may be wise to have the key watcher practice the first ten lessons instead of paragraph typing or timed writings. The teacher might say to his/her student, "Watch your fingers carefully as you locate each new key. Then see if you can keep your eyes on your copy for an entire line. If you can do this, you will receive a good grade for the assignment." This last sentence is a must. No good will come from replacing one insecurity with another. And the key watcher must be supported in his/her deviation from the rest of the class.

Care should also be taken to follow all demonstrations of incorrect techniques with the correct one. For example, if the teacher wishes to show the class what *not* to do, a demonstration of correct stroking must follow immediately. In addition, the teacher should ask the class to imitate the correct response several times.

The teacher will do well to anticipate bad form and habits and help the student to prevent their materialization. In addition to repeated demonstration of proper techniques by the teacher, another method is to observe the student and to correct faulty procedures at once and in a matter-of-fact way. There are certain interferences that prevent establishing the proper pattern of reach and feel. Such interferences include improper reading habits, tension, improper hand position, and failure to perfect control of one manipulation before it is injected into a pattern of movements. All of these interferences constitute roadblocks to keyboarding progress and should be eliminated by the teacher before they become permanent.

Prevention of the formation of bad habits does not mean that a rigid control of keyboarding accuracy is to be enforced while the student is learning the keyboard. Momentary mistakes and incorrect techniques may be temporarily ignored, too, when the student is reaching into new levels of speed and trying to break away from a previous level of performance. Essentially, he/she is developing a new technique of controlling his/her fingers at a higher speed and naturally will make mistakes. Before these incorrect habits become permanent, however, there must be emphasis on control with speed. In other words, the student should work in cycles by first pushing his/her speed and momentarily ignoring errors, then dropping back to a lower level to perfect his/her techniques and eliminate errors, and finally by applying his/her skill to solving keyboarding problem exercises.

Verbal guidance is definitely a help in the learning process of a skill subject if the guidance is brought to bear properly. Even though motor skills are sometimes learned by accident or by the determination and ingenuity of the learner, verbal cues are of considerable help to the learner. Psychological experimentation shows this to be particularly true in complex motor skills—of which keying is definitely one. Students learn by the senses of sight, sound, and feel; learning is increased the more the senses are linked together in the learning process. If the teacher uses verbal cues properly and if the

textbook/software provides verbal guidance, there will be a definite speeding up of the learning process on the part of the student.

The plateau or the stalled level of skill calls for active interference on the part of the person guiding the instruction. The plateau is an all too familiar phenomenon in keyboarding instruction and requires an understanding of the sources of difficulty and a definite concentration of effort on new integration of movement patterns, new methods of attack, a challenging situation, creation of motivation, and development of self-confidence in the student. The teacher should prove to the student that he/she could break through his/her barrier and reach new levels, even though they are only momentarily gained. If a student is able to increase his/her speed on a short writing, it gives him/her a lift. It makes him/her realize that there are new levels that he/she can reach. From this new experience he/she is then able to go on to longer writings at higher speeds and then to perfecting his/her keying at these higher speeds.

Allowing the student who is on a plateau to be timed on familiar straight-copy material is another device for breaking through the plateau. The important goal is to push on to new rates, regardless of the kind of copy or the length of the interval involved.

In all facets of keyboarding instruction, the teacher must remember that each class is made up of individuals, each with his/her own needs, hopes, and wishes. The teacher must employ as much individualization of instruction as possible in the keyboarding classroom. Emphasis should be given particularly to observation of the student at work, with positive comments from time to time. The student will respond just as well to a comparative compliment as to an absolute one; and surely there is no keyboarding student to whom you cannot say, "You are doing better today." Even more effective is the specific bit of praise—just *how* he/she is doing better. So if you can say, "You're curving your fingers much better this week," you may be certain those fingers are going to continue to be curved.

Breaking the Finger-Watching Habit

Despite the well-laid plans of teachers to teach the location of keys by "touch" there are likely to be a few students in almost every class who persist in watching their fingers. How can these students be taught to keep their eyes on the copy from which they are working? The answers can be classified into two groups. One group contains preventive suggestions; the other, corrective measures.

Preventive Suggestions

Blank keys do not keep students from watching their fingers. If the students are not certain about the locations, they will watch their fingers even when the keys are blank because they will soon know one key from another. The visible keyboard is a helpful aid in teaching key locations. It should be used. Here are some suggestions for preventing key watching:

1. After students have been given an opportunity to watch their fingers move from home-key positions to the new keys for a brief period, insist that they keep their eyes on their copy as they type. If some of the students are observed watching their fingers as they type new keys, the teacher should stop the class, review the location of the key as the students watch their fingers, and repeat the location drill a number of times by dictating it as the students type. For example, the following drill might be dictated for the reach to *n*.
nj nj nj an an and and land land hand hand jnj nj
2. The new keys should not be introduced too rapidly. Two or three new keys a period/day are about all most high school students can handle without feeling lost. The younger the group of students, the slower must be the introduction of new keys.
3. The reach to the new key must be learned before the student feels sure of himself or herself in using the letter in a word. The teacher should not hesitate to use location drills in teaching new keys; nj nj

nj jnj jnj jnj. Here again, the younger the group, the more essential it is for the teacher to teach the location of individual keys.

4. “Breather” lessons should be provided in which no new keys are taught during the keyboard lessons. These “breather” lessons permit the students to set in their minds the location of keys already covered. Students who are barely keeping up with the class are prevented from looking at their fingers because additional keys must be learned each day.
5. All keys previously taught should be reviewed before new keys are introduced. The new keys of the previous day should be reviewed vigorously before new learning is undertaken. Drills on long or awkward reaches, such as the reaches to *b*, *y*, *z*, *x*, and *m*, should be stressed intensively when they are presented and reviewed frequently thereafter. They cause most of the finger watching. The students are not likely to watch their fingers as they strike the letter *f*, but the location of the letter *b*, for example, does cause some trouble. Greater emphasis should, therefore, be given to *b* than to *f*.
6. Little emphasis should be placed on either accuracy or speed in the keyboard lessons. If students are required to type too rapidly or with high accuracy too soon, they will resort to finger watching as an aid in meeting the demands set by an unwise teacher.
7. An automatic review of all the letter keys should be provided immediately after the keyboard has been covered. This review should consist of location drills and drills on words and phrases in which the letters being reviewed are emphasized. Three or four letter keys may be reviewed in each lesson. The explanations made by the teacher about the location of the keys can be much the same as they were when the keys were first introduced.

Corrective Measures

The problem of preventing finger watching is much easier to handle than devising corrective measures for those students who have acquired the finger-watching habit. The observant and thoughtful teacher will, therefore, try to prevent this difficulty from occurring. Here, however, are some suggestions for the teacher who is confronted with the problem:

1. Students who watch their fingers should not be allowed to progress as rapidly as other students. They should be required to re-key keyboard location drills in earlier lessons. If possible, the teacher should dictate these drills to the students.
2. Students who watch their fingers should be required to repeat earlier keyboard lessons dictated on tapes or records. These aids are now available for most basic keyboarding textbooks. They are helpful in meeting the individual needs of students.
3. The teacher should make certain that students who watch their fingers can see textbook instructions and hear the directions clearly and distinctly. Very frequently, finger-watching difficulties can be traced to vision or auditory handicaps possessed by students.

Appendix H: Teaching Special Populations

Working with Special Population Students in Business & Information Technology Education

(Source: Keyboarding at the Middle Grades, Curriculum Resource Guide, North Carolina, Summer 2004)

A critical component of success is a comprehensive career development plan prepared for each student moving through a course sequence. This career education process must start early in order for students to develop enough experience from which they can make meaningful and realistic career decisions. Special needs students often lack experiences due to the nature of the disability or disadvantage. Thus, a career path must be created along the educational continuum.

Career education is a lifelong process that requires that individuals continually receive new information and experiences in order to shape and develop their lives.

The career foundation needs to start in the elementary grades with career awareness. This is the time when students start to learn about the world around them. They need to have opportunities to become aware of the community and discover what people do to make the community function.

Career exploration needs to occur during the middle school years. A specific career plan needs to be developed that will enable the special needs student to start creating a career path. The career path is not a career choice, it is only a directional indicator.

Formal and informal assessments should be given to generate some data on student likes and dislikes. Much of the timing of these assessments and the career information collected will be dependent upon the maturity level of the students.

As the students progress through the educational system, more information about them can be secured and used in the development of their Career Development Plan. The students can enter into the community and create a career diary through the writing of a two-three page paper for English class, or create a video or audio tape explaining what they have learned. This is the first step in the integration of academics and vocational education.

During the high school years, more formal planning can be done in relation to the career plan. The students need to receive career planning opportunities through time spent with career counselors and/or teachers. The teachers, both academic and vocational, need to be a part of the career planning process. They need to assist students in developing an understanding of how learning word processing, computer applications, biology or chemistry, applied math or algebra fits into their career plan. For students who do not reach levels of advanced math or chemistry, the application of applied information needs to be explained.

As special needs students complete their final year(s) in secondary school, they will need a plan to market themselves as part of their career portfolio. The students need opportunities to develop skills in filling out applications, interviewing, dressing appropriately, and behaving in socially acceptable ways. To develop these skills, they will need to review rigorous interview questions, meet and respond to stressful situations, and other interviewing techniques. All of these areas can be mastered through repeated opportunities for practice.

The development of a career plan for special needs students must include communication among the students, parents, teachers (vocational, academic, resource), and counselors. The career plan is to be used only as a guide as the students make their way along the educational continuum. The plan will help students get a clearer picture of careers and how they can be a part of them. Without a plan, they will just take courses to fulfill graduation requirements without seeing where all of their efforts are leading.

At high school graduation, special needs students should be able to follow their career plan/portfolio confidently and successfully.

Conclusion

Special needs students have a place in Business, Marketing, and Information Technology Education programs. The key to success for these students is the development of a career continuum that will enable them to select the course sequences that will best fit their needs, while giving them the necessary support services.

These students need to be able to focus on developing their basic literacy skills, problem-solving abilities, work-entry skills, and citizenship. Business, Marketing, and Information Technology Education programs can provide them with opportunities to develop these required competencies—if all the members of the educational and community partnership feel they have a role to play and understand how they can fulfill their role.

Communication between and among all of the participants during the next few years will determine if the student will be successful! For our nation to be competitive internationally and economically strong domestically, Business, Marketing, and Information Technology Education programs must ensure ALL students are successful.

Suggested Strategies for Teaching Special Populations

(Source: *Keyboarding at the Middle Grades, Curriculum Resource Guide, North Carolina, Summer 2004*)

General Strategies:

1. Make a copy of notes and directions the student can keep at his/her desk.
2. Provide the student with an example of how the final copy will appear as a guide. (Many of these students are visual learners and need visual guides.) They may need these guides for a longer length of time than other students.
3. Use peer-proofing of documents to be graded. Allow students to proof documents before they are turned in to you. Students will teach each other.
4. If extra time is needed or specified in the student's IEP, you may do one of the following:
 - Set up a designated time that the student will be allowed to come back to finish assignments. Get approval from parents since they may have to furnish transportation. (Parents need to be involved.)
 - Decide in advance of making an assignment of the amount of work/number of assignments you expect from the student. Let them know what you expect.
 - **Contracts** work well with students. Make sure both the teacher and the students sign the contract to indicate what is due and when it will be due. Do not change the contract once it has been agreed upon. Set guidelines as to how you will handle late work.

EXAMPLE: Late work will not be accepted. All completed work must be turned in on the established date and will be graded on what is complete. Points will be deducted for all work not completed.

Work may be turned in late; points will be deducted for each day late.

EXPECT QUALITY—NOT QUANTITY—FROM YOUR STUDENTS!

Strategies for Students with Visual Impairments

1. If you know in advance that a student with visual impairment will be in your class, ask that Braille/large print books be ordered. These are available for state adopted textbooks. Ask for tapes to accompany the books.
2. If the student's sight is limited, you might use ZOOM TEXT software for the computer. It enlarges the text on the screen.
3. If the student is totally blind, you might ask the LEA to purchase DECTALK or JAWS 2 for the computer. DECTALK makes the computer keyboard talk to the students. JAWS 2 reads the screen to the student.
4. Make your own tapes. Remember to spell difficult words and to read punctuation and new paragraphs.
5. Get the dictaphones out and teach your student to use them. They work much better than a regular tape recorder.

Strategies for Students with Hearing Impairments

1. Allow student preferential seating, moving about the room where he/she can hear best.
2. If he/she has an auditory trainer or hearing aid, make sure they use it. Ask if you are not sure.
3. Give written directions to the student. (They do not like to ask for extra help. Asking “Do you understand” does not help—they will not admit they do not understand.)
4. **REMEMBER**—If you make an oral change in directions, make sure to explain to the student. They may not hear oral changes after they begin work.
5. Ask the student to explain what is expected.
6. Use visual examples to explain what you expect. Many times this is easier than trying to explain orally.
7. **DO NOT** yell at the student. It is embarrassing and generally does not help. Write instructions whenever possible.

Strategies for Students with Other Health Impairments

1. IBM offers an adaptive keyboard for students who have limited use of their hands. Call IBM for information. Key guards are available from IBM to assist with finger isolation.
2. Make sure the student is comfortable. Use boxes to keep feet flat if a student’s feet will not reach the floor.
3. Contact your nearest local occupational therapist. They have knowledge of many types of adaptive equipment.
4. Contact your community college or university. Many have someone who works with special populations on their campus and can offer suggestions.

REMEMBER: Seek help and advice from other teachers. We can help each other!

Appendix I: Computer Technology/Application Resources/Projects

(Additional resources will be added)

Career Research Report Project

Teachers should use the resources available in their schools to assist students in discovering their broad occupational interests. For example, Indiana's 14 Career Clusters and related Career Pathways can be investigated by students through use of materials available from the Indiana Department of Education; information from school counselors can be obtained; and community organizations and business persons can be drawn on for information. In addition, information can be gathered through student Internet searches of sites such as <http://www.Monster.com>, www.bls.gov/oco/home.htm (Occupational Outlook Handbook), <http://www.ajb.dni.us/> (Job Bank), <http://jobsmart.org/tools/career/spec-car.htm> (JobSmart: Career Guides), and <http://www.doleta.gov/programs/onet/> (O*NET).

Career investigation is not something a student will do one time. Students will do progressively more focused and detailed career studies throughout their academic and working lives. This middle school project is a beginning point for students to gather information about careers in which they may be interested. Through this project, students should gain insight into their interests, abilities and aptitudes. They should become aware of the occupational clusters and types of jobs included in each cluster. Students should determine the description (including any gender restrictions, duties, and types of qualifications, training, and education required) of a job in which they have an interest. In addition, they should obtain facts about the employment outlook, anticipated earnings, and potential companies/organizations (including geographical location), where employment might be available for the job in which they have an interest.

The following content outline may be used for the Career Research Report. Students should use subheadings and document the sources of all information they include in their report. An assessment rubric similar to the one on the following page should be developed and used to evaluate the reports.

- I. My interests, abilities, and aptitudes
 - A. Personal qualities
 - B. Academic accomplishments
 - C. Specific aptitudes
- II. The Career Cluster in which I am interested
 - A. Identification and description of the Career Cluster
 - B. Types of jobs included in the Career Cluster
- III. The type of job in which I am interested
 - A. Identification—description—of the job
 - B. Description of qualified persons employed in this job
 - C. Training and education needed for employment in this job
 - D. Employment outlook for this job
 - E. Anticipated earnings in this job
 - F. Companies/organizations, including geographical locations, where employment in this job might be available
- IV. Plans for the future that I would have to make to prepare for this job
 - A. Personal
 - B. Educational
 - C. Professional

Career Research Report Assessment Rubric

Organization/Format	Content	Writing Conventions and Vocabulary	Research Quantity, Quality, and Documentation
5—Material organized with appropriate subheadings in a clear, consistent manner that provides a smooth flow for the reader	5—Prescribed topics are included in a clear and accurate manner; information is complete for each topic; plans for the future show a good interpretation of the information	5—Spelling is accurate; capitals used correctly; paragraphs are indented; paragraphs are restricted to one topic with transition between paragraphs; periods commas and quotation marks are in the right places; word choice is appropriate	5—Adequate information on all topics specified was obtained; good sources of information were used; documentation was done accurately for all information
3—Some aspects of organization are good; some required subheadings are missing; the flow is smooth	3—Most of the topics are included in a clear and accurate manner; some information is sketchy (incomplete); plans for the future need to be based on a more thorough interpretation of the information	3—Most of the items listed above are handled correctly	3—Most of the items listed above are handled correctly
1—A few headings are correct; several headings missing or inappropriate; the flow interferes with the readability of the report	1—Several topics are not included and/or information is not complete or clear/accurate; plans for the future do not have a close relationship to the information presented	1—Many errors in writing conventions and vocabulary are evident	1—Quantity and quality of information is not adequate; documentation has many errors
0—Little evidence shown to follow instructions for use of subheadings and to attain flow of information	0—Little evidence of correct content	0—Little evidence shown to use correct conventions and vocabulary	0—Little evidence shown to include acceptable quantity and quality of information and proper documentation

Input, Output, Storage, or Processing Quiz

Indicate in the space preceding each of the following items whether the item is associated with computer input, output, storage, or processing.

- | | |
|-------|--------------------------|
| _____ | 1. printer |
| _____ | 2. arithmetic-logic unit |
| _____ | 3. keyboard |
| _____ | 4. hard disk |
| _____ | 5. monitor |
| _____ | 6. touch screen |
| _____ | 7. CD-ROM |
| _____ | 8. CPU |
| _____ | 9. floppy disks |
| _____ | 10. speech recognition |

This Is My School Project

“This Is My School” is a multimedia project designed to give students experience in using a variety of recording and output devices. In addition, this project should help students take pride in their school’s physical facilities and educational programs. The project will be completed over a period of time. Appropriate files will be saved in the students’ “This Is My School” folder for use at appropriate times.

The multimedia “tour” students take of their school can include any or all of the following:

- Taking pictures (using digital and analog cameras; still imaging and video imaging) of:
 - the exterior of the school
 - the classrooms
 - teachers in the classrooms
 - special labs
 - the library
 - the lunchroom
 - the gym
 - the principal/assistant principal and their offices
 - guidance personnel
 - facilities maintenance personnel
 - special bulletin board exhibits throughout the school
 - auditoriums and special rooms/facilities
 - students engaged in study, classes, athletics, etc.
 - other features/activities

- Combining pictures with text and other images in using word processing software

- Creating a booklet (using desktop publishing software) of the school, its facilities, and its personnel.

- Creating a multimedia presentation using presentation software or similar software.

Computers Follow Instructions—An Exercise

The purpose of this exercise is to help students understand that computers do not “think.” Rather, they follow precise instructions. (The use of logic and “if, then” programming is not addressed in this exercise.)

Each student should have a sheet of paper 8 1/2 by 11 inches and a supply of red, yellow, blue, and green craft sticks. Do not repeat any of the instructions.

Have each student draw a 5-inch square (approximately five inches on each side).

Instruct each student to:

- place a red craft stick at the top of the square
- place a green craft stick at the bottom of the square
- place a yellow craft stick at the left side of the square
- place a blue craft stick at the right side of the square
- place a red craft stick diagonally within the square to make two triangles

Hold up an example of the desired result (have the craft sticks glued to a sheet of paper so you can hold it up). Some students may have made errors. Point out that the computer follows instructions exactly as they are given—no instruction repeating is needed!

Student Projects/Activities—Supplementary Resources

Payroll Project:

<http://www.coorisd.k12.mi.us/cte/school2wk/lessonplans/96/jb96.htm> payroll

Car Purchase Project:

<http://teachers.net/lessons/posts/2293.html>

Budget Project:

<http://www.macul.org/newsletter/1992/janfeb92/spreadsh.html> budget

M&Ms Spreadsheet Project:

<http://www.lessonplanspage.com/MathCIMandMGraphsSpreadsheets36.htm>

Oreos Spreadsheet Project:

<http://www.education-world.com/projects/archives/profiles/0013.shtml>

Candy Spreadsheet Project:

<http://www.beaconlearningcenter.com/Lessons/167.htm>

Cookie Spreadsheet Project:

<http://www.beaconlearningcenter.com/Lessons/969.htm>

Spreadsheet Ideas:

http://www.sabine.k12.la.us/class/excel_resources.htm#Middle%20School

Entrepreneurial Ideas:

<http://www.nea.org/lessons/tt040920.html>

Starting a Business/Entrepreneurial Ideas:

<http://youngbiz.com/>

Publishing Projects:

<http://www.crews.org/curriculum/ex/compsci/8thgrade/>

Database Project:

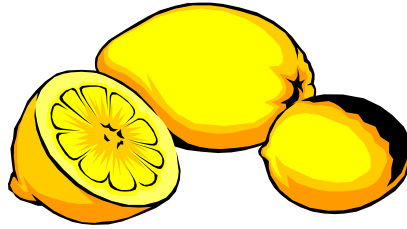
<http://www2.ncsu.edu/unity/lockers/project/middletech/spotlight/douglas/project.html>

Stock Market Spreadsheet Activities:

<http://www.smg2000.org/>

<http://www.bham.wednet.edu/technology/TechWeb/Spreadsheet/stock.htm>

LEMONADESTAND Project



(Let's Learn Microsoft Excel Features)

As you gather information for a project you will be creating with Microsoft Excel and Microsoft Word, you will learn some of the basic principles of business, such as income, expenses, profit, inventory, advertising, and cost of goods sold.

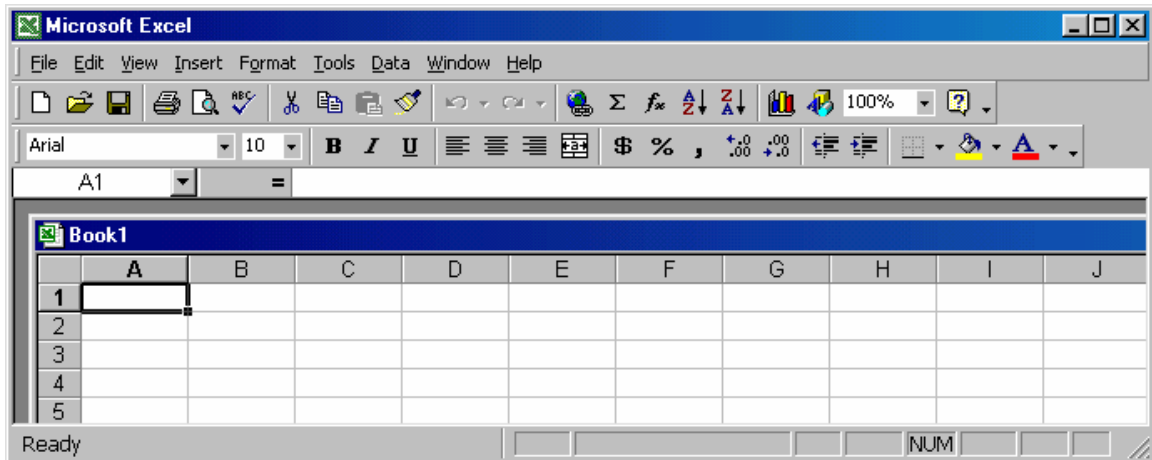
LemonadeStand Procedure:

- (1) Start Internet Explorer and go to www.lemonadestand.net. This is a business game in which decisions have to be made. Depending on your decisions, you will either make a profit or not. In business, our main mission is to make a profit!!
- (2) Complete a 7-day trial period to understand the process.
- (3) Create a LemonadeStand folder in your directory.
- (4) You will need to create a worksheet for yourself to keep track of what you have done each day. This should be saved in your LemonadeStand directory. **Suggestion: create a Microsoft Word table that you can fill in.
- (5) On your worksheet for each day, label each day the specific date the simulation gives you: July 1, 2, 3, etc. Give the weather conditions. Give any other information provided. Make your decision of where to sell lemonade for the day.
- (6) Produce an Inventory of items to be used for the day—the purchases and amounts. (Remember to note all your choices)
 - a. Lemons
 - b. Ice cubes
 - c. Pink lemons

- d. Spoons of special ingredients
 - e. Cups of sugar
 - f. Beginning balance of the day
 - g. Ending balance after purchases
- (7) Note your ending inventory balances of items and the balance in your account.
 - (8) Determine how much you want to spend on advertising for the day for your sales. (Remember good advertising sometimes leads to great profits) Make note of the advertising costs you are making for the day.
 - (9) Determine how much you will charge for your lemonade. Make note of the cost you will be charging for the day.
 - (10) The simulation will tell you how much you sold and what your balance is in your account. Make sure you have both for your project. Figure what your profit was for the day and be sure to note that dollar amount.
 - (11) After gathering your facts and figures for a 7-day period, repeat for 4 periods.
 - (12) Now you have gathered your information for our project. Now it is time for Excel to show you what you can do with all this information.

Microsoft Excel for LemonadeStand

1. Open Microsoft Excel.
2. Let's review the spreadsheet components—cells, toolbars, menus, etc.



3. How do you write formulas? Add, subtract, multiply, divide—order of operations
4. Think about and plan what we want to present and what we want to do with the information we gathered. Make a sample on a sheet of paper
5. Components for the worksheet:
 - a. Day 1, Day 2, Day 3, Day 4, Day 5, Day 6, Day 7
 - b. Weather Conditions
 - c. Other Information
 - d. Selling Place
 - e. Inventory and Purchase Amounts
 - i. Lemons
 - ii. Cubes of ice
 - iii. Paper cups
 - iv. Pink lemons
 - v. Spoons of special ingredients
 - vi. Cups of sugar
 - f. Advertising
 - g. Charge per cup of lemonade
 - h. How many cups were sold
 - i. Account balance
 - j. Profit for the day

Purchasing Your First Computer

You are interested in purchasing a new computer for your home/family. You have all had input into things you would like/want on the new PC. You must make decisions as to the brand, type, and components to include on the new computer.

List of Items to Consider When Purchasing a Computer Worksheet (following pages)



Think about what you will be using the computer for: e.g., homework, chatting, games, etc. Create a list of as many things as you can of what you or other family members might like to have to help you make a wise decision in purchasing a computer. Then, create a table with the list of the items.

Technical Vocabulary Needed When Selecting a Computer (following pages)

Create a vocabulary list of words and their meanings in Microsoft Office (choose an appropriate software to use). You may create this document in any appropriate manner.



Comparison of Models (following pages)

Create a spreadsheet of items for comparison of different makes and models (see following pages). Possible items to consider:

Model
Cost
Components
Features
Warranties
Peripherals
Software
Other

Short Research Report (1-2 pages)

Possible sites to use in your research:

www.dell.com
www.hp.com
www.gateway.com
www.zdnet.com
www.pcmagazine.com

List of Items to Consider When Purchasing a New Computer

1
2
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VOCABULARY ASSOCIATED WITH
THE PURCHASE OF A COMPUTER SYSTEM

Processor
Operating system
Memory
Drives: Hard Drive
Drives: CD or CD/RW
Drives: DVD or DVD/RW
Drives: Floppy
Drives: External or Flash
Storage
Monitor
Video Card
Sound Card
Speakers
Application Software
Peripherals: Printer
Peripherals: Scanner
Peripherals: PDA
Peripherals: Digital Camera/Camcorder

HOLIDAY PROJECTS



Business TECH Lab A/B/C

(A Word Processing Magazine)

Use this project after the keyboard has been introduced—I use this as an application activity/project to key materials rather than using book exercises—students get to be creative, and we still focus on the word processing standards and work-based learning strategies. It is our “Fun Friday” activity—we learn and still have fun!! Since there are 3 trimesters in our school year, I choose one holiday each trimester to use as the focus—Halloween (fall), Christmas (winter), Valentines Day/St. Patrick’s Day (spring).

- Students brainstorm ideas about “Holiday things” for project (Halloween, Christmas, Valentine’s Day/St. Patrick’s Day, or other approved holiday)
- Group and create topic areas for project
- Students sign up for their 1st and 2nd choice of topics
- Students are assigned topic areas (team for the project)
- Students work a portion of the period in teams to produce a magazine (approximately 10 hours of work with the keying)
- Students are introduced to various word processing competencies each day during our daily “learning” cue time as well as while they are working on their project we do the “big question” of the period (the “ah ha” question)
- Students are rewarded for asking “how to” questions and for “I know how” answers

~~Virtual Vacation—Bon Voyage~~



Focus Question

How will you plan, research, and create a “Virtual Vacation Getaway Portfolio” using technology-based resources and applications?

Project Reality Skills

- Research Skills
- Communication Skills: Written, Oral
- Computer Skills

Introduction

You are beginning a new virtual adventure. Your virtual vacation time is drawing closer. You will be planning, researching, budgeting, and presenting your “Virtual Vacation Plans.”

You may choose anywhere in the world to spend ten days doing a variety of activities: sightseeing, adventures, entertainment, shopping, etc. The only exception is that you may not go to an amusement park, such as Disney World or Cedar Point. Your budget will depend on where you go. If you vacation within the United States, an allowance for the travel will be \$3,500. If you determine you want to go the international route, an allowance for the travel will be \$6,500.

A. Document Your Destination

- Determine your destination and gain approval from the instructor
- Research your destination through encyclopedias, Internet, travel agencies, etc.
 - Create a Favorites Folder for your vacation materials
 - Include all sites that you have used to create your materials
 - Create a document for your references
- Arrange and organize your facts, figures, and pictures under appropriate titles (be consistent throughout the project) or headings that reflect the material gathered, such as: Overview, Map, Climate, Population, and Special Attractions.
- Create a Virtual Vacation Portfolio to hold all the materials you create for this project.

Include the following in your documentation: You will use these researched materials (information) to produce a variety of application projects

- History of the location
- Geography of the location
- Population
- Culture—customs and traditions, do's and don'ts of the location
- Climate/weather
- Time
- Customs and traditions
- Language
- Capital (currency and present exchange rate from US dollars)
- Major cities/surroundings
- Prime attractions
- Transportation
- Pictures
- Cuisine/foods

B. Set Your Travel Budget

C. A Package Deal--Projects to be Completed

- Project 1: Report pertaining to your vacation area. Use a title page and references. Use report standards: margins, titles, headings, spacing, etc.
- Project 2: Background for presentation/web design. Create a background that represents your vacation area to be used in your presentation and one for your web newsletter.
- Project 3: Presentation of Your Virtual Vacation. Create a presentation of your researched information. You will present this to the class. You will not be allowed to read it from your presentation slides.
- Project 4: Letter. Create a personal business letter to your principal explaining how your trip will enhance your education.
- Project 5: Itinerary of the ten days. Prepare an itinerary of your activities, including flights, travel plans, hotels, etc.
- Project 6: Reference Sheet for the project. Document and prepare and complete a Reference Sheet for the web sites you have used in creating your virtual vacation and any other references.
- Project 7: Table of Contents for your portfolio.
- Project 8: Budget for your Virtual Vacation. Compile an expense sheet—transportation, lodging, food, activities, entertainment, and exchange values.
- Project 9: Postcard from your vacation hotspot. Create a picture postcard that shows one aspect of the vacation.
- Project 10: Fact sheet about your vacation location. Create a table with all the facts pertaining to your vacation.
- Project 11: Tri-fold brochure advertising the vacation getaway. Create a brochure for someone who has never visited this place.
- Project 12: Web page pertaining to your vacation getaway. Create a 2-page online newsletter.
- Project 13: Create a favorite dish from your vacation area.

D. Presentation of Materials

Students present their materials in a binder with appropriate formatting.

Dry Cleaning Employee Scenario

(Adapted from Business Opportunities and Practices, published by the Indiana Business Education Association)

Mary worked as a clerk for a dry cleaning company. She was responsible for receiving clothes left for dry cleaning and for hanging up the clothes after they had been returned from the cleaning area. Mary was responsible for checking each order returned from the cleaning area to see that the customer's name and address and the cost were included on the garment ticket. She greeted the customers as she took their orders and gave the clothes to the customers when they returned to get them. Mary was responsible for collecting the money due for the cleaning.

One day Mary's best girl friend, Jane, came to the dry cleaning company to visit with her. Things were not too busy so Mary and Jane were having a good visit when a customer came in for her dry cleaning. The customer was Mrs. Smith, a business person, who frequently brought items to the company for cleaning. This day, Mrs. Smith was in a hurry because she had guests coming for dinner, and she wanted to wear the dress which she left for cleaning last week.

Mrs. Smith gave Mary the claim check. Mary and Jane continued to talk while Mary was looking at the claim check. Then Mary went to look for Mrs. Smith's dress. She was gone for some time as she checked all the racks and finally found the dress. However, there was no price on the ticket on the dress. Mrs. Smith inquired about how long the dress had been back from the cleaning area, and Mary said that it had come back last Saturday, four days ago.

Mrs. Smith explained that she needed to wear the dress that evening. Mary said she was sorry but she could not let her take the dress without payment for it. Meanwhile Mary and Jane continued to talk. Mrs. Smith asked Mary to call the main office to get the price. Mary said that office was closed now, and she could do nothing about the situation. Mrs. Smith left the shop in anger saying to herself, "I'll never bring any more clothes to that shop again!"

Analyze the scenario and give specific evidence that shows whether or not Mary was a good employee. How would the employer evaluate Mary's performance?

Team-Building Principles

(Adapted from: http://www.hrdpress.com/selfdevelopment/one_page_coach.htm)

Influencing Others

The ability to influence others is one of the most powerful skills we can develop. Influencing involves many individual skills and competencies.

Negotiating Skills

The ability to negotiate well is an invaluable quality in business. Teams must appreciate the range of skills that are necessary to achieve better results from their negotiating efforts.

Effective Conflict Resolution

Conflict is not necessarily **destructive**. If handled properly, it can contribute to organizational learning and lead to improved working relationships and performance.

Effective Assertiveness Skills

Learn to become more assertive. Teams need to recognize the characteristics of effective assertive behavior, identify personal bad habits, and formulate a personal action plan.

Effective Communication Skills

Learn how to coordinate/orchestrate communication to create a mutual experience of high value. Teams need to understand the many ways that clear communication can take place and learn personal skills and behaviors to communicate more effectively.

Effective Listening Skills

Listening skills are a vital part of the communication process. As active listeners, team members must hear what is being said. Members should learn the characteristics of effective listening and formulate an action plan for developing listening skills.

Effective Goal Setting Skills

Goal setting is one of the most effective strategies for achieving success. Team leaders need to set achievable goals and ensure that everyone is engaged and motivated to reach targets successfully.

Stress Management

When stress builds to extreme levels and we are unable to cope, it reduces our physical and mental capacity to lead a full life. Learning to monitor and control levels of stress so that it is a positive force is a matter of changing our perceptions of stress.

Managing Change Effectively

This topic must be considered from the position of the person initiating or controlling the change agenda and from the perspective of those caught up in the process and in need of coping strategies.

Cultural and Diversity Awareness

Team members must understand this subject and free themselves from any biases or constraining thinking about differences among people.

Effective Time Management

Making better use of time is an exercise that changes and evolves. Good practices should be used to effectively deploy the time that is available.

Creativity and Innovation

Team members must develop skills that are involved in being creative, as well as understanding the creativity process itself.

Team Building

This handout helps you to establish teamwork in your organization, by aligning your efforts, sharing the workload, and achieving successful early results.

Effective Leadership Skills

Leadership skills are essential to team building regardless of whether small or large teams are involved.

Problem Solving Skills

The effectiveness of teams frequently depend on the quality of decisions made by people at all levels. Critical thinking and problem solving should be part of a team's training.

Learning Styles

Training theory has moved away from the "passive acceptor" of instructional expertise to focusing on the "self-directed learner." This means that learning style is of critical importance to the individual member.

Appendix J: Indiana Academic Standards References

References to Computer/Technology in the Indiana Academic Standards for English/Language Arts (K-12)

Standard 1: READING: Word Recognition, Fluency, and Vocabulary Development

Vocabulary and Concept Development

10.1.1 Understand technical vocabulary in subject area reading.

Example: While using a word-processing program on the computer, learn new terms and special meanings for words from the manual and online help feature: *control, enter, insert, format, font, template, page break, file, and folder.*

Standard 2: READING Comprehension

Comprehension and Analysis of Grade-Level-Appropriate Text

4.2.7 Follow multiple-step instructions in a basic technical manual

Example: Follow directions to learn how to use computer commands or play a video game.

8.2.5 Use information from a variety of consumer and public documents to explain a situation or decision and to solve a problem.

Example: Web pages

Structural Features of Informational and Technical Materials

6.2.1 Identify the structural features of popular media (newspapers, magazines, online information) and the features to obtain information.

Example: Do a keyword search on the Internet to find information for a research report.

8.2.1 Compare and contrast the features and elements of consumer materials to gain meaning from documents.

Example: Compare examples of a variety of instructional or technical manuals, such as those for a computer or electronic game.

Standard 4: WRITING Process

Research and Technology

2.4.5 Use a computer to draft, revise, and publish writing.

3.4.4 Use various reference materials (such as a dictionary, thesaurus, atlas, encyclopedia, and online resources).

3.4.5 Use a computer to draft, revise, and publish writing.

4.4.7 Use multiple reference materials and online information (the Internet) as aids to writing.

4.4.9 Use a computer to draft, revise, and publish writing, demonstrating basic keyboarding skills and familiarity with common computer terminology.

5.4.6 Create simple documents using a computer and employing organizational features, such as passwords, entry and pull-down menus, word searches, the thesaurus, and spell checks.

6.4.6 Use organizational features of electronic text (on computers), such as bulletin boards, databases, keyword searches, and e-mail addresses, to locate information.

- 6.4.7 Use a computer to compose documents with appropriate formatting by using word-processing skills and principles of design, including margins, tabs, spacing, columns, and page orientation.
- 7.4.7 Use a computer to create documents by using word-processing skills and publishing programs; develop simple databases and spreadsheets to manage information and prepare reports.
- 8.4.4 Plan and conduct multiple-step information searches by using computer networks.
- 8.4.6 Use a computer to create documents by using word-processing skills and publishing programs; develop simple databases and spreadsheets to manage information and prepare reports.
- 9.4.4 Use writing to formulate clear research questions and to compile information from primary and secondary print or Internet sources.
- 9.4.6 Synthesize information from multiple sources, including almanacs, microfiche, news sources, in-depth field studies, speeches, journals, technical documents, and Internet sources.
- 9.4.9 Use a computer to design and publish documents by using advanced publishing software and graphic programs.
- 10.4.4 Use clear research questions and suitable research methods, including text and electronic resources and personal interviews, to compile and present evidence from primary and secondary print or Internet sources.
- 10.4.9 Use a computer to design and publish documents by using advanced publishing software and graphic programs.
- 11.4.9 Use a computer to integrate databases, pictures and graphics, and spreadsheets into word-processed documents.
- 12.4.9 Use technology for all aspects of creating, revising, editing, and publishing.

Organization and Focus

- 3.4.1 Find ideas for writing stories and descriptions in conversations with others, and in books, magazines, school textbooks, or on the Internet
- 4.4.1 Discuss ideas for writing. Find ideas for writing in conversations with others and in books, magazines, newspapers, school textbooks, or on the Internet. Keep a list or notebook of ideas.

Standard 5: WRITING Applications

- 4.5.3 Write informational reports that:
 - Ask a central question about an issue or situation.
 - Include facts and details for focus.
 - Use more than one source of information, including speakers, books, newspapers, media sources, and online information.

Example: Use information from a variety of sources, such as speakers, books, newspapers, media sources, and the Internet.
- 5.5.3 Write research reports about important ideas, issues, or events by using the following guidelines: Use a variety of information sources, including firsthand interviews, reference materials, and electronic resources, to locate information for the report.
- 9.5.3 Write expository compositions.
 - Include visual aids by using technology to organize and record information on charts, data tables, maps, and graphs.
- 9.5.5 Write documents related to career development, including simple business letters and job applications.
- 9.5.6 Write technical documents.

- 10.5.3 Write Expository compositions, including analytical essays and research reports that:
- Include visual aids by using technology to organize and record information on charts, maps, and graphs.
- 10.5.5 Write business letters that:
- Follow a conventional style with page formats, fonts (typeface), and spacing that contribute to the documents' readability and impact.
- 10.5.6 Write technical documents.
- 11.5.5 Write job applications and resumes that:
- Follow the conventional style for that type of document (a resume or cover letter of application) and use page formats, fonts (typeface), and spacing that contribute to the readability and impact of the document.
- 11.5.8 Deliver multimedia presentations that:
- Combine text, images, and sound and draw information from many sources, including television broadcasts, videos, films, newspapers, magazines, CD-ROMs, the Internet, and electronic media generated images.
 - Select an appropriate medium for each element of the presentation.
 - Use the selected media skillfully, editing appropriately, and monitoring for quality.
 - Test the audience's response and revise the presentation accordingly.
- Example:** Prepare a multimedia presentation about Indiana authors. Support the presentation with visual images and video clips. Create a literary map of Indiana, with visuals that have been found or created, showing authors' hometowns, photographs, and biographies.
- 12.5.8 Deliver multimedia presentations that:
- Combine text, images, and sound and draw information from many sources, including television broadcasts, videos, films, newspapers, magazines, CD-ROMs, the Internet, and electronic media generated images.
 - Select an appropriate medium for each element of the presentation.
 - Use the selected media skillfully, editing appropriately, and monitoring for quality.
 - Test the audience's response and revise the presentation accordingly.
- Example:** Prepare a commencement presentation that will appeal to fellow graduates as well as their relatives and friends and to other students in the audience. Include clips of television broadcasts, videos, films, and music that were significant in some way to the class.

Standard 6: WRITING: English Language Conventions

Manuscript Form

- 9.6.3 Produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization.
- 9.6.4 Apply appropriate manuscript conventions, including title page presentation, pagination, spacing and margins, and integration of source and support material, by citing sources within the text, using direct quotations, and paraphrasing.

Standard 7: LISTENING AND SPEAKING:

Analysis and Evaluation of Oral and Media Communications

3.7.10 Compare ideas and points of view expressed in broadcast, print media, or the Internet.

Speaking Applications

7.7.10 Deliver research presentations that:

- Include evidence generated through the formal research process, including the use of a card catalog, *Reader's Guide to Periodical Literature*, computer databases, magazines, newspapers, and dictionaries.

7.7.11 Deliver multimedia presentations that:

- Combine text, images, and sound by incorporating information from a wide range of media, including films, newspapers, magazines, CD-ROMs, online information, television, videos, and electronic media-generated images.
- Select an appropriate medium for each element of the presentation.
- Use the selected media skillfully, editing appropriately and monitoring for quality.
- Test the audience's response and revise the presentation accordingly.

7.7.12 Deliver multimedia presentations that:

- Combine text, images, and sound by incorporating information from a wide range of media, including films, newspapers, magazines, CD-ROMs, online information, television, videos, and electronic media-generated images.
- Select an appropriate medium for each element of the presentation.
- Use the selected media skillfully, editing appropriately, and monitoring for quality.
- Test the audience's response and revise the presentation accordingly.