

TECHNOLOGY

GRADE FOUR

STANDARDS

- 1.0 **Problem Solving** — Students utilize problem-solving processes through the use of resources to reach a desired outcome.
- 2.0 **Productivity Tools** — Students use appropriate productivity tools including, but not limited to, word processing spreadsheet, database, multimedia and telecommunications.
- 3.0 **Research Tools** — Students use various technology tools to research information and evaluate its accuracy and appropriateness in order to solve problems and make decisions.
- 4.0 **Tools and Processes** — Students identify, apply concepts, and manage various tools and resources to evaluate their accuracy and appropriateness in solving problems and making decisions.
- 5.0 **Systems** — Students recognize that systems are made up of individual components and that each component affects the operation of the system and its relationship with other systems.
- 6.0 **Implications on Society** — Students evaluate the impact and ethical implications on individuals, society and the environment.

ESSENTIAL CONCEPTS, SKILLS, AND EXPERIENCES

PROBLEM SOLVING

It is expected that students will:

- (4)1.1 identify and discuss using appropriate terminology a design/problem-solving method
- (4)1.2 utilize a design/problem-solving method
- (4)1.3 explain a design/problem-solving method
- (4)1.4 present a method of solving a problem
- (4)1.5 evaluate appropriate designs

PRODUCTIVITY TOOLS

It is expected that students will:

- (4)2.1 identify parts of the computer
- (4)2.2 identify basic parts of a variety of technological learning tools
- (4)2.3 demonstrate proper care and handling of equipment (computers, projection devices, scanners, copiers, cameras, video and audio)
- (4)2.4 use input devices (e.g., mouse, keyboard, remote control) and output devices (e.g., monitor, printer) to successfully operate computers, VCRs, audiotapes, and other technologies

TECHNOLOGY GRADE FOUR (continued)

- (4)2.5 use a variety of media and technology resources for directed and independent learning activities
- (4)2.6 demonstrate proper keyboarding skills
 - a. locate and use letters, numbers, and special keys on a keyboard using the left or right hand [NS 2.3.1]
 - b. apply correct finger placement for basic keyboarding skills [NS 2.5.1]
- (4)2.7 demonstrate proper navigation of the desktop, which includes:
 - a. appropriate cursor movement
 - b. opening and closing
 - c. proper use of the task bar, other buttons, and functional icons
 - d. appropriate use of command buttons, text boxes, list boxes, and check boxes
- (4)2.8 follow proper sequence to run programs and accessories, which includes:
 - a. starting and exiting programs and accessories
 - b. switching between multiple programs
- (4)2.9 create a document that demonstrates simple typing and editing skills [NS 2.3.2]
- (4)2.10 create a document including a graphic using basic formatting techniques that demonstrate the ability to type, edit, and print [NS 2.5.2]:
 - a. type simple sentences using a word processor
 - b. use cut, copy, paste, save, open, format, and print to edit a document
 - c. insert graphics into a document
 - d. use a basic drawing program to include preprogrammed graphics (inserting, selecting, sizing, cropping, editing, and importing)
 - e. demonstrate use and function of drawing tools
 - f. understand and demonstrate use of word processing reference tools (spell check, grammar check, dictionary, thesaurus, etc.)
 - g. use formatting tools to change or modify a document
 - h. combine preprogrammed images into graphics
 - i. use peripheral tools to create graphics
- (4)2.11 demonstrate proper management of files and folders, which includes:
 - a. viewing
 - b. creating
 - c. renaming
 - d. deleting
 - e. creating and saving files on various storage media [NS 2.3.6]
 - f. moving and copying
- (4)2.12 understand commands, procedures, and management of developmentally appropriate multimedia
 - a. use developmentally appropriate multimedia software
 - b. create a multimedia document or presentation with guided instruction, using text, graphics, and/or sound [NS 2.5.5]
 - c. explain the purpose of a multimedia presentation using multimedia [NS 2.3.5]
- (4)2.13 search a database to locate specific information (e.g. electronic sources, telephone book, encyclopedia, and library card catalog) [NS 2.3.3]

TECHNOLOGY GRADE FOUR (continued)

- a. create a database with predefined fields, enter data for multiple records [NS 2.5.3]
- b. print reports based on sort query using ascending and descending order [NS 2.5.3]
- (4)2.14 use technological learning tools to enhance and extend learning and achievement through the development of effective communication skills
- (4)2.15 demonstrate responsible use of communication network applications
 - a. identify electronic communication devices [NS 2.3.7.1]
 - b. identify devices that require connectivity [NS 2.3.7.2]
 - c. demonstrate use of communication capabilities such as electronic mail, conferencing, etc.
 - d. create messages which integrate written, audio, video, and text information
 - e. describe the process of accessing a LAN and demonstrate the process as available [NS 2.5.7.1]
 - f. explain how local and global networks function
 - g. define and explain the uses of an electronic communication device, telecommuting, and teleconferencing [NS 2.5.7.2]
- (4)2.16 demonstrate sharing of data among a variety of programs through copying, linking, and/or embedding text and graphical objects
 - a. understand and demonstrate the exchange of data with the other applications
 - b. explain the differences between data files, program files, and describe and use the file management software of a computer [NS 2.5.6]
- (4)2.17 properly manage, maintain, and care for technological learning tools
- (4)2.18 utilize a pre-designed spreadsheet, demonstrate the ability to enter simple labels, values, and formulas by constructing a guided spreadsheet containing appropriate labels, values, formulas, and simple functions [NS 2.5.4]

RESEARCH TOOLS

It is expected that students will:

- (4)3.1 select a research topic or define a problem and predict outcomes using technology tools [NS 3.3.1]
- (4)3.2 generate keywords for a research topic or problem and conduct a search of electronic based sources [NS 3.5.2]
- (4)3.3 select information from a variety of remote resources for a research topic or problem exploring hyperlinks [NS 3.5.3]
- (4)3.4 identify and examine organizational formats using a technology tool to arrange information for presenting or decision-making [NS 3.5.4]
- (4)3.5 use technology to organize data
 - a. calculate
 - b. collect data
 - c. analyze data
- (4)3.6 demonstrate an understanding of intellectual property
 - a. describe personal consequences of inappropriate use
 - b. identify source and content of information collected [NS 3.5.5]
 - c. generate a list of sources [NS 3.5.6]

TECHNOLOGY GRADE FOUR (continued)

- (4)3.7 summarize and share the research process and its outcome [NS 3.5.7]
- (4)3.8 evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources

TOOLS AND PROCESSES

It is expected that students will:

- (4)4.1 use technologies as an educational tool in all content areas
- (4)4.2 use technologies independently and collaboratively
- (4)4.3 recognize the importance of safety in computer and technology applications [NS 4.3.3]
- (4)4.4 demonstrate the importance of safety and ease of use in selecting appropriate tools [NS 4.5.3]
- (4)4.5 employ tools and materials to design or develop products or projects [NS 4.5.2]
- (4)4.6 use technology information processing skills to enhance and extend learning in all areas
- (4)4.7 identify the appropriateness and uses of resources and tools in technology based activities [NS 4.3.1]
 - a. select and use applicable tools for tasks [NS 4.3.2]
 - b. with teacher guidance, resolve difficulties using tools or devices including input devices, output devices, and devices requiring connectivity to successfully perform basic computer operations [NS 4.3.4]
 - c. recognize that technological resources include people, information, materials, machines, energy, capital, and time [NS 4.5.1]
- (4)4.8 solve difficulties with tools or devices to accomplish the desired result including computer operations and recognize basic operational problems, such as printer jams, and possible solutions [NS 4.5.4]

SYSTEMS

It is expected that students will:

- (4)5.1 define a system [NS 5.3.1]
- (4)5.2 identify the parts of a system and explain how the parts working together allow the system to do things the individual parts are unable to do alone (e.g., components of a computer system) [NS 5.3.2]
- (4)5.3 identify and categorize systems that provide food, clothing, shelter, entertainment, communications, health care, security, and other necessities and comforts of life [NS 5.3.3]
- (4)5.4 explain open, closed, simple, complex systems, micro and macro systems [NS 5.5.1]
- (4)5.5 explain how systems depend on a variety of resources to produce a desirable outcome (e.g., computer information processing cycle) [NS 5.5.2]
- (4)5.6 classify systems according to type and level (e.g., open loop system or closed loop system, simple or complex, and micro or macro) [NS 5.5.3]

TECHNOLOGY GRADE FOUR (continued)

IMPLICATIONS ON SOCIETY

It is expected that students will:

- (4)6.1 describe how technology is used in daily activities to meet personal needs
 - a. describe computer piracy [NS 6.3.1]
 - b. describe personal consequences of inappropriate use [NS 6.3.1]
- (4)6.2 practice etiquette using technology and describe changes in the local community because of technology [NS 6.3.2]
- (4)6.3 describe the relationship between careers and technological developments
- (4)6.4 describe common uses of technology in daily life and how environments are changed
- (4)6.5 describe and use required district, school, and classroom procedures for use of technology
- (4)6.6 examine products and communicate how that product solved a human need or want [NS 6.5.1]
- (4)6.7 explain how physical environments are changed by technological developments [NS 6.5.2]
- (4)6.8 describe the relationship between careers and technological developments [NS 6.5.3]
- (4)6.9 explain society's use of technology and discuss both the positive and negative impacts on the workplace, society, and the environment [NS 6.5.4]