Computer Technology: Literacy and Usage

FOURTH GRADE

Standard 1.0
Students will understand basic operations and concepts of technology.

Learning Expectations
  1.1   Students will demonstrate an understanding of the nature and operation of technology systems.
  1.2   Students will exhibit a proficiency in the use of technology.
  1.3   Students will continue development of and master basic skills (alpha numeric and special characters) for using the touch.
        NOTE: The first 6 to 8 weeks of class will emphasize the mastery of the touch system of keying on the alphanumeric keyboard.

Accomplishments
  4.1.1. Students will demonstrate an understanding of the nature and operation of technology systems.
    a. Identify the functions of computer components.
    b. Use input devices, such as mouse, keyboard, and voice/sound recorder.
    c. Use output devices, such as disk drive, printer, multimedia projector/display screen, etc.
    d. Save, retrieve, and delete files.
    e. Describe the purposes of drives, directories, and files.
    f. Be aware that there are different types of files (different extensions).
    g. Recognize, discuss, and use network term/concepts such as stand alone, network, file server, LANs, network resources, etc.
    h. Identify and discuss the benefits of non-networked and networked computers.
    i. OPTIONAL – If available, use a computer program, such as LOGO to demonstrate how computers use instruction

  4.1.2. Students will exhibit a proficiency in the use of technology.
    a. Use and apply appropriate computer terminology.
    b. Demonstrate the proper sequence of steps to operate a computer.
    c. Recognize the different types of file extensions and their respective document types, such as picture, bitmap, photo, word processing document, spreadsheet document, etc.
    d. Save to and retrieve from a specific directory or drive.

e. Expand the use of various operating system features such as, opening more than one application/program, the menus, the taskbar, etc.

4.1.3. Students will develop basic skills (alpha numeric and symbol characters) in using keyboard using the touch system
a. Exhibit proper posture and use both hands at the keyboard.
b. Exhibit proper posture and fingering techniques for the alphanumeric keyboard.
c. Review and expand proper touch-keying techniques for all rows of the keyboard.
d. Apply the touch-keying system to develop basic skills on the alphanumeric keyboard at a rate of 15 gross words per minute (GWAM) for a one minute timed writing.
e. Practice proper response patterns to gain speed.
f. Build speed and accuracy.

Performance Indicators:
By the end of the fourth grade the student is able to
- Master the correct touch-keying techniques for the alphanumeric keyboard
- Key at a rate of 15 gross words per minute (GWAM) using the proper touch-keying techniques in a one minute timed writing.

By the end of the fifth grade the student is able to
- Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively.
- Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide.
- Demonstrate the proper use of computer and keyboarding terminology

Sample Performance Task
- Using any word processing or keyboard program the students will take a timed typing test to determine their gross words per minute.
- Use a technique check sheet to evaluate proper techniques at the keyboard.
- Perform drills on sentences and paragraph from straight copy.

Standard 2.0
Students will understand the importance of social, ethical, and human issues associated with technology.

Learning Expectations

2.1 Students will understand the ethical, cultural, and societal issues related to technology.

2.2 Students will practice responsible use of technology systems, information, and software.

2.3 Students will develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

Accomplishments

4.2.1. Students will understand the ethical, cultural, and societal issues related to technology.
   a. Describe the role of machines in assisting man
   b. Identify the various people involved in technological developments.
   c. Identify the historical developments of technology
   d. Discuss the impact of the historical developments of technology on society..
   e. Distinguish between human capabilities and computer capabilities
   f. Discuss copyright laws.
   g. Discuss the advantages and disadvantages of the use of technology.
   h. Identify the influence and affects of technology in our daily lives and learning.

4.2.2. Students will practice responsible use of technology systems, information, and software.
   a. Adhere to software licensing agreements and respect the electronic work of other individuals.
   b. Obey the copyright laws.
   c. Follow Acceptable Use Guidelines as set by local school district.
   d. Discuss the advantages and disadvantages of the use of technology related to
   e. Recognize and discuss the importance of citing sources of copyrighted materials in documents.
   f. List ways of obtaining permission for using copyrighted material.
   g. Follow commercial licensing agreements for software packages.

4.2.3. Students will develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
   a. List ways technology makes life easier for us today.
   b. Compare and contrasts the advantages and disadvantages of the use of technology.
   c. Practice safe use of electronic equipment.
   d. Discuss the purpose of virus protection software.
   e. Explore technology related careers.

Performance Indicators:
By the end of the fifth grade the student is able to:

- Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide.
- Discuss basic issues related to responsible use of technology and describe personal consequences of inappropriate use.

Sample Performance Tasks
- Classroom discussion of Acceptable Use Policy.
- Using a word processor briefly describe the advantages and disadvantages technology has brought to our lives. Essays scored to a rubric.

Standard 3.0
Students will use technology productivity tools.

Learning Expectations

3.1   Students will use technology tools to enhance learning, increase productivity, and promote creativity.

3.2   Students will use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

Accomplishments

4.3.1. Students will use technology tools to enhance learning, increase productivity, and promote creativity.
   a. Discuss the reasons computers are best suited for task requiring speed, accuracy, and repeated operations.
   b. Use the computer and technology resources as a learning tool.
   c. Create presentations for various subject related assignments.
   d. Use simulation software to assist with learning.
   e. Use on-line help and documentation (help buttons/menus/guides, readme files, Ask an Expert web sites, electronic tech support).

4.3.2. Students will use productivity tools to collaborate in constructing technology enhanced models, prepare publications, and produce other creative works.
   a. Use the computer and technology resources to practice learning skills in relation to other subject areas such as math, science, English, etc.
   b. Use text, paint, and/or drawing tools to assist with learning tasks.
   c. Recognize that different software programs are design for specific purposes.
   d. Recognize the characteristics of multimedia (text, audio, images, video, etc.).
   e. Identify and discuss multimedia terms/concepts (slide/card, link/button, text box, navigate, transition) as a class/group.
   f. Explore the navigation of software utilized in the classroom.

g. Correctly perform the following basic skills in word processing and spreadsheet programs: highlight, cut and paste, delete, exit, search and replace, enter data, open two programs simultaneously and move between them.

Performance Indicators:
By the end of the fifth grade the student is able to:
- Use general purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum.
- Use technology tools (e.g., multimedia authoring, presentation, Web tools, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom.

Sample Performance Task
- Students will create independent and collaborative multimedia products using a variety of presentation tools to be scored by classroom created rubric.

Standard 4.0
Students will use technology communications tools.

Learning Expectations
4.1 Students will use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
4.2 Students will use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Accomplishments
4.4.1. Students will use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
a. Use communication tools to participate in projects.
b. Explore effective ways to demonstrate ideas (font, color, background/white space, graphics, and sound to ensure that products are appropriate for the communication media including multimedia screen displays, Internet documents, and printed materials).
c. Publish information in a variety of media including, but not limited to, printed copy, monitor display, Internet documents, and video.
d. Use presentation software to create a product geared to specific audiences.
e. Participate in the creation of technology assessment tools such as checklists, timelines, or rubrics.
f. Use outlining tools to create simple presentation templates.

g. Where applicable, log-on to an e-mail server with user name and password, send, retrieve, and read e-mail messages.
h. Where applicable, participate in electronic communications as learners, initiators, contributors, and mentors in online projects guided by the teacher.

4.4.2. Students will use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
a. Explore principles of design (proportion, balance, contrast, rhythm, emphasis, unity, etc., in creating a presentation/document.
b. Use appropriate applications, including, but not limited to spreadsheets and databases to develop charts and graphs by using data from various sources.
c. Publish information in a variety of media including, but not limited to, printed copy, monitor display, Internet documents, and video.
d. Use presentation software to communicate with specific audiences.
e. Integrate various media (video tape, CD-ROM, laserdisc, digital sources, internet, etc. in a multimedia presentation.
f. Select representative student products to be collected and stored in an electronic evaluation tool.
g. Evaluate student products for relevance to the assignment or task.
h. Be aware that file size is important, plan, organize and save multimedia files with attention to file size and media storage.

Performance Indicators:
By the end of the fourth grade the student is able to:
- Apply all the touch-keying techniques for the keyboard, expect the numeric keypad.

By the end of the fifth grade the student is able to:
- Use technology tools (e.g., multimedia authoring, presentation, Web tools, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom.
- Use telecommunications efficiently to access remote information, communicate with others in support of direct and independent learning, and pursue personal interests.
- Use telecommunications and online resources (e.g., e-mail, online discussions, Web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products for audiences inside and outside the classroom.

Sample Performance Task

- Given a topic the student will choose the appropriate software and hardware to effectively communicate to a given audience.

Standard 5.0
Students will select and use appropriate technology research tools.

Learning Expectations
    5.1   Students will use technology to locate, evaluate, and collect information from a variety of sources.
    5.2   Students will use technology tools to process data and report results.
    5.3   Students will evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

Accomplishments
    4.5.1. Students will use technology to locate, evaluate, and collect information from a variety of sources.
        a. Select appropriate strategies to navigate and access information on local area networks (printer, local servers, CD-ROM towers…) and wide area networks (Internet, WWW, telecommunications…) for research and resource sharing.
        b. Perform simple searches to acquire information
        c. Skim and scan for main ideas and keywords to identify relevant information.
        d. Use electronic reference materials including encyclopedias, thesauruses, dictionaries, maps and atlases, etc.
        e. Use an electronic library to search for information related to a project (TEL).

    4.5.2. Students will use technology tools to process data and report results.
        a. Use electronic reference tools as a resource.
        b. Identify the need for data to be organized.
        c. Develop a small basic data base.
        d. Identify advantages and disadvantages of a data base.
        e. Demonstrate the process through which computers search, sort, delete, update and summarize data..
        f. Use age appropriate software programs to generate tables, charts, and graphs to display data in various curricular areas.

    4.5.3. Students will evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks
        a. Have experiences with a variety of software and specify their uses such as, reference material, browsers, drawing, publishing, and word processing programs, etc.
        b. Choose an application based on its appropriateness for specific tasks.

    c. Evaluate acquired information for usefulness.
    d. Explore the gathering of information using a variety of electronic resources, including but not limited to the Internet.
    e. Perform an Internet search under the direction and supervision of a teacher.
    f. Use interactive technology environments, such as simulations, electronic science or mathematics laboratories, virtual museum field trips, or on-line interactive lessons to extend learning.

Performance Indicators:
By the end of the fifth grade the student is able to:
- Use a variety of technology resources for problem solving, self-directed learning, and extended learning activities.
- Determine which technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems.

Sample Performance Task:
- Use technology resources to research then create a product on a given topic.

Standard 6.0
Students will utilize technology problem-solving and decision-making tools.

Learning Expectations
    6.1 Students will use technology resources for solving problems and making informed decisions.
    6.2 Students will employ technology in the development of strategies for solving problems in the real world.

Accomplishments
    4.6.1. Students will use technology resources for solving problems and making informed decisions.
        a. Recognize that computers were created to assist in solving problems. (Computer History)
        b. Recognize that the computer relies on sequential steps in order to perform tasks.
        c. Use a step-by-step process for solving a problem.
            1. Order specific steps in the solution of a problem.
            2. Choose the proper steps in the solution of a problem.
            3. Choose and order the steps in the solution of a problem
        d. Use teacher selected websites to acquire information related to a given problem.

1. Analyze the information gathered
2. Collaborate with the teacher/student to reach a decision based on the information gathered.

4.6.2. Students will employ technology in the development of strategies for solving problems in the real world.
   a. Use the computer and technology resources to gather information on different ways to solve a specific problem.
   b. Determine the usefulness and appropriateness of electronic information and apply critical analysis to resolve conflicts (discrepancies between sources) and validate information.
   c. Use developmentally appropriate software to follow sequential directions and proper steps to solve a problem for a given simple task.
   d. Use multimedia software to express ideas, strategies use, and solution for a given problem and/or task.
   e. Use some method of storyboarding to create a presentation on the steps used to solve the problem.
   f. OPTIONAL – If available, use a computer program, such as LOGO to demonstrate how computers use instruction.

Performance Indicators:
By the end of the fifth grade the student is able to:
- Use technology resources for problem solving, self-directed learning, and extended learning activities.
- Determine which technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems.
- Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources.

Sample Performance Task:
   a. Share student performance based products using a variety of tools and electronic devices.
   b. Given teacher selected sites the student will evaluate the validity and bias of the information on a given topic.