

# Instructional Technology

## Fourth Grade

### Essential Curriculum

#### **Standard 1. Creativity and Innovation**

Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

- a. Apply existing knowledge to generate new ideas, products, or processes using the Engineering Design Process (EDP).
- b. Create original works as a means of personal or group expression using various software applications.
- c. Use digital models and simulations to explore.
- d. Identify trends and forecast possibilities.

#### **Standard 2. Communication and Collaboration**

Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.

- a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media.
  - i. Collaborate in pairs or groups to develop technology-based presentations or products for content-related topics using digital audio, photos, images, video, or charts (e.g., interact via videoconferencing or blogging with young adult authors, musicians, artists, or scientists to collaborate on a multimedia product with teacher oversight).
- b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats.
  - i. Create and edit products in a variety of media environments (e.g., presentations, newsletter, video, annotated calendar, wiki) to effectively communicate individual and group curriculum activities, ideas, or results to multiple audiences.
- c. Develop cultural understanding and global awareness by engaging with learners of other cultures.
  - i. Use technology communications tools (e.g., online forums, blogs, email, text messaging, chat, voice over IP (VoIP), videoconferencing) to interact with students or experts from other cultures, communities, or countries on a collaborative, content-specific activity or project.
- d. Contribute to project teams to produce original works or solve problems.
  - i. Working in pairs or small groups with assigned roles, use digital tools to explore specific subject-related concepts or content and present problem solutions or create original works using appropriate tools (e.g., animation and drawing software, visual data tools, graphic organizers, simulation development tools, programming languages, video camera, editing software, music software).

#### **Standard 3. Research and Information Fluency**

Students apply digital tools to gather, evaluate, and use information.

- a. Plan strategies to guide inquiry.
  - i. Use and evaluate information resources available through technology, independently or with assistance.
  - ii. Use technology tools independently to support note-taking.
- b. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
  - i. Identify, obtain, and use information from electronic data sources from the Internet.
  - ii. Select and read to gain information from electronic personal interest materials, such as brochures, books, magazines, cookbooks, and web sites.
  - iii. Understand library catalog search strategies.
  - iv. Understand search strategies for age-appropriate Web search engines/directories.
- c. Evaluate and select information sources and digital tools based on the appropriateness to specific tasks.
  - i. Select relevant information from appropriate technology resources
- d. Process data and report results.
  - i. Use and evaluate technology tools to organize information.
  - ii. Use technology tools independently to support data collection.
  - iii. Describe how technology tools are used to organize information.

#### **Standard 4. Critical Thinking, Problem Solving, and Decision Making**

Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.

- a. Identify and define authentic problems and significant questions for investigation.
  - i. Use technology to help formulate a research question about a problem/situation that require further study.
- b. Plan and manage activities to develop a solution or complete a project.
  - i. Use technology to develop a plan for how to answer questions about a problem/situation that requires further study.
- c. Collect and analyze data to identify solutions and/or make informed decisions.
  - i. Identify technology resources to gather information about a problem/situation that requires further study.
  - ii. Use communication tools identified by the teacher to help gather information.
  - iii. Collect data and information using technology tools.
  - iv. Input and analyze information in a predefined spreadsheet or database.
  - v. Analyze information using technology tools.
  - vi. Describe how technology tools are used to organize information.
- d. Use multiple processes and diverse perspectives to explore alternative solutions.
  - i. Describe how technology tools are used to collect information.
  - ii. Apply evaluation strategies when using electronic resources.
  - iii. Display data and information using technology tools.
  - iv. Use communication tools identified by the teacher to communicate conclusions.
  - v. Present information and conclusions in formats that are appropriate to a specific audience.

- vi. Assess the use of the selected technology for individual learning of the specific task.

### **Standard 5. Digital Citizenship**

Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.

- a. Advocate and practice safe, legal, and responsible use of information and technology.
  - i. Use technology resources to convey to other students and the public at large the relevance of protecting and sharing work.
- b. Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity.
- c. Demonstrate personal responsibility for lifelong learning.

### **Standard 6. Technology Operations and Concepts**

Students demonstrate a sound understanding of technology concepts, systems, and operations.\*

- a. Understand and use technology systems.
- b. Select and use applications effectively and productively.
- c. Troubleshoot systems and applications.
- d. Transfer current knowledge to learning of new technologies.
- e. Apply appropriate keyboarding practices.

\* Refer to [Technology Literacy Checklist](#) for Grade 4.