Computer Technology
Standards of Learning
for Virginia's Public Schools
Grades 6-8

February 2013

Board of Education
Commonwealth of Virginia

Computer Technology Standards of Learning

_____

Introduction

> *As the new century has unfolded, various studies have postulated about the likely competencies that will be needed in the workplace of tomorrow; one consistent conclusion is that technology will be integrated into every facet of business and life.*
>
> *The* Educational Technology Plan for Virginia: 2010-15 *focuses primarily on one specific component of 21st century skills—information and communications technology (ICT) literacy. The most recognized definition for this topic was formulated in 2002 by the International ICT Literacy Panel: "ICT literacy is using digital technology, communications tools, and/or networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society."*
>
> *Educational Technology Plan for Virginia: 2010-15*

The Computer Technology Standards of Learning define the essential knowledge and skills necessary for students to access, manage, evaluate, use, and create information responsibly using technology and digital resources. They provide a framework for digital literacy and include the progressive development of technical knowledge and skills, intellectual skills for thinking about and using information, and skills needed for working responsibly and productively both individually and within groups. Digital literacy is not an end in itself but lays the foundation for deep and continuous learning. It focuses on using technology to learn rather than learning about technology.

To become technologically proficient, students must develop these skills through integrated activities across all K-12 content areas. These skills should be introduced and refined collaboratively by all K-12 teachers as an integral part of the learning process. Teachers can use these standards as guidelines for planning technology-based activities in which students achieve success in learning and communication—preparing them to meet the challenges of today's knowledge-based society.

_____

Grades 6-8

Basic Operations and Concepts

C/T 6-8.1   Demonstrate an operational knowledge of various technologies.
    A. Use various types of technology devices to perform learning tasks.
        • Demonstrate the ability to perform specific tasks using technology, including organizing, analyzing, and presenting data; formatting and presenting text and graphic information; and capturing and manipulating images.
    B. Communicate about technology with appropriate terminology.
        • Use technology vocabulary in daily practice.

C/T 6-8.2   Identify and use available technologies to complete specific tasks.
    A. Identify the specific uses for various types of technology and digital resources.
        • Select and use local, network, and Internet resources and tools.
        • Capture and edit video.
        • Explain how various careers incorporate technology.
    B. Use content-specific tools, software, and simulations to complete projects.
        • Use tools in various content areas, such as graphing calculators, science simulations, story diagramming applications, image processing applications, and history timeline applications.

Social and Ethical Issues

C/T 6-8.3   Make responsible decisions—grounded in knowledge of digital safety and security best practices—that pertain to various digital communication tools and methods.
    A. Demonstrate knowledge of basic practices related to online safety.
        • Use best practices for online safety as defined by the division's online safety program.
        • Apply the division's acceptable use policy to everyday situations.
        • Model appropriate, legal, and ethical behavior in all technology use and technology-supported environments.
    B. Discuss and model responsible behaviors when using information and technology.
        • Identify reasons for taking security precautions when using any technology, especially those related to the Internet.
        • Demonstrate responsible behavior, such as using strong passwords and avoiding high-risk activities.
        • Identify examples of inappropriate or bullying online behavior and demonstrate an understanding of the reasons why such behavior is inappropriate in a civil society.

- Identify differences between healthy and unhealthy virtual relationships such as bullying and practice positive responses to problems.
- Demonstrate personal responsibility for online behavior, especially in social media settings.
- Demonstrate awareness of the potential social, economic, and legal consequences of inappropriate online behavior.

C/T 6-8.4   Exhibit personal responsibility for appropriate, legal, and ethical conduct.
A.   Demonstrate an understanding of "fair use."
- Apply knowledge of copyright and "fair use" when developing presentations, products, and papers.
B.   Demonstrate an understanding of current copyright laws.
- Identify copyright laws that impact student work.

C/T 6-8.5   Demonstrate digital citizenship by actively participating in positive activities for personal and community well-being.
A.   Communicate respect for people when participating in group online learning activities.
- Demonstrate online etiquette when communicating with others.
- Demonstrate an understanding of cyberbullying and strategies for stopping a cyberbully.
B.   Explore the potential of the Internet as a means of personal learning and the respectful exchange of ideas and products.
- Participate in the creation of digital projects that involve others working together toward a common goal.
- Demonstrate the ability to identify diverse perspectives on issues.

C/T 6-8.6   Understand the nature of information in a global society and how the characteristics of various media may influence others.
A.   Identify the various uses of media based on intent and audience.
- Investigate media messages in various contexts.
B.   Be able to construct and deconstruct media messages.
- Connect media messages to various writing techniques, logic models, and outcomes.
- Develop communication projects using various types of media.

Technology Research Tools
C/T 6-8.7   Plan and apply strategies for gathering information, using a variety of tools and sources, and reflect on alternate strategies that might lead to greater successes in future projects.
A.   Use various technology and digital resources to collect information.
- Conduct research using various types of text- and media-based information.

_____

- Use various types of content-specific technology to gather data and information.
  B. Use search strategies to retrieve information.
    - Apply effective search strategies that will yield targeted information.
    - Identify indicators that a digital source is likely to be reliable.

C/T 6-8.8   Draw conclusions from research and relate these findings to real-world situations—investigating further, if necessary.
  A. Use digital research to support written and oral presentations.
    - Apply research derived from digital resources to original work, as appropriate.
  B. Apply knowledge when conducting research to develop accurate and balanced reports.
    - Determine when further research is needed based on original search results and first drafts.
    - Demonstrate how to cite digital resources when developing nonfiction reports and presentations.
    - Apply strategies that help avoid plagiarism when clipping and storing digital notes.
  C. Interpret digital primary sources within historical and contemporary contexts.
    - Follow procedures to interpret various primary sources for a variety of content areas.

C/T 6-8.9   Analyze, synthesize, and evaluate information based on source validity and the appropriateness to specific tasks.
  A. Evaluate the accuracy, relevance, and appropriateness of electronic information sources.
    - Use a variety of strategies to evaluate the accuracy of digital resources.
    - Use various digital tools, such as graphic organizers, to analyze and synthesize data for learning tasks.
  B. Use various digital tools to organize, analyze, and synthesize data for learning tasks.
    - Use digital tools, such as graphic organizers, spreadsheets, and databases.

Thinking Skills, Problem Solving, and Decision Making
C/T 6-8.10   Practice reasoning skills when gathering and evaluating data.
  A. Employ technology in developing strategies for solving problems.
    - Identify and use technology resources and tools that can help with problem solving.
    - Use a variety of technologies to identify and provide possible solutions to real-world problems.
  B. Select resources that extend one's own capability to solve problems and make informed decisions.

- Understand how certain technologies can extend human capabilities to understand complex situations.

C/T 6-8.11　Demonstrate organization and persistence when completing personal and group assignments, activities, and projects.
    A. Use digital resources to assist with project planning.
- Use various productivity tools that help with planning and time management.
    B. Use digital resources to assist with project management.
- Use productivity tools to assist in tracking and meeting goals.

C/T 6-8.12　Use models and simulations to understand complex systems and processes.
    A. Use simulations to understand complex concepts.
- Enhance understanding of concepts and skills by using simulations.
    B. Use various digital resources to produce graphical representations of data.
- Complete assignments involving data by using data graphing or imaging tools.

Technology Communication Tools
C/T 6-8.13　Communicate effectively with others (e.g., peers, teachers, experts) in collaborative learning situations.
    A. Use technology tools for individual and collaborative writing, communication, and publishing activities.
- Use various technology resources to develop written and media-based reports and projects, integrating technologies as appropriate.
- Collaborate with others using digital communication tools.
    B. Participate in communications among different cultures.
- Understand the need to place communication in the context of culture.
    C. Assume different roles (e.g., leader/follower, orator/listener) on teams in various situations.
- Use technology to complete a wide variety of tasks when working in teams, depending on the individual's group role.

C/T 6-8.14　Apply knowledge and skills to generate innovative ideas, products, processes, and solutions.
    A. Organize and display knowledge and understanding in ways that others can view, use, and assess.
- Choose the appropriate tool, format, and style to communicate information for specific purposes.
- Independently use technology tools to create and communicate for individual and/or collaborative projects.
    B. Add meaning to individual and group ideas and products through creative work.

- Use digital resources and technology to enhance original oral and written presentations.
C. Produce resources in a variety of formats.
  - Demonstrate the ability to determine proper formats for delivering products digitally so others may use them.