Kentucky Technology

Grades 9, 10, 11, 12

Adopted 2010

Information, Communication and Productivity

Enduring Knowledge - Understandings

- proficient use of emerging technology is needed for competitive entry into the workforce.
- technology allows the exchange of information and ideas to enable participation in the global society.
- collaborative online projects impact life-long learning and global interactions.
- productivity tools are used effectively and efficiently to enhance lifelong learning.

Skills and Concepts - Information

- apply, consolidate and extend the skills, knowledge and experiences acquired earlier to exhibit competence in the use of technology
- use appropriate technology terminology
- apply basic care and maintenance when using technology
- explore and analyze the impact of current and emerging technology

Skills and Concepts - Communication

- use technology to communicate in a variety of modes (e.g., audio, speech to text, print, media)
- participate in electronic communities (e.g., virtual learning) as learners, initiators, contributors and mentors
- use online collaboration and interactive projects (e.g., email, videoconferencing) to communicate with others (e.g., experts, mentors)
- select and use appropriate technology to collect, analyze present information

Skills and Concepts - Productivity

- use and apply a repertoire of technology skills regularly in the preparation of content assignments and authentic projects
- use a variety of formats (web publishing, oral presentations, journals and multimedia presentations) to summarize and communicate the results
- create professional electronic products (e.g., resumes, letters of applications, portfolios) for employment and post-secondary education

Safety and Ethical/Social Issues

Enduring Knowledge - Understandings

- interactive technology projects and online courses enhance learning to ensure global awareness.
- acceptable social technology practices is essential to post-secondary career choices.
- ethical use of technology is necessary to ensure safety, privacy and legal issues.
- new technology development and deployment creates social, cultural, political and economic issues that requires citizens to make informed decisions.
- positive attitudes and practices towards technology support lifelong learning.
- assistive technology supports learning to ensure equitable access to a productive life.

Skills and Concepts - Safety

- explain the importance of safe Internet use (e.g., iSafe skills)
- apply safe behavior when using technology

Skills and Concepts - Ethical Issues

- describe intellectual property issues related to technology
- practice responsible, ethical and safe behavior (e.g., security, privacy, passwords, personal information virus protection and iSafe skills) while using technology and adhering to the Acceptable Use Policy (AUP) as well as other state and federal laws
- investigate basic issues related to responsible use of technology and describe personal consequences of inappropriate use
- use legal and ethical practices when completing digital projects/schoolwork and credit all participants for their contribution to the work
- investigate software piracy, its impact on the technology industry and possible repercussions to individuals and/or the school district

Skills and Concepts - Social Issues

- forecast the impact of technological products and systems in a global society
- use appropriate etiquette when interacting with global environments (e.g., video conferencing, IM)
- analyze economic, political and cultural issues influenced by the development and use of technology
- investigate how technology supports their interests and career opportunities
- engage with technology to support lifelong learning (e.g., online courses, online assessments, interactive video conferencing)
- describe/explain how assistive technology supports learning to ensure equitable access to a productive life
- explain how emerging technology is exponential and shapes economic factors and cultural influences

Research, Inquiry/Problem-Solving and Innovation

Enduring Knowledge - Understandings

- technology supports critical thinking skills used in inquiry/problem solving to make informed decisions for independent learning.
- technology can assist in researching, analyzing and evaluating information obtained from a variety of sources to answer an essential question across all content areas.
- technology supports research and development to solve problems and produce results in authentic situations.
- ideas, solutions and designs (e.g., intellectual property) created through technology are used in a knowledge-based economy.

Skills and Concepts - Research

- apply a research process model (e.g., Big6, Research Cycle) to conduct online research
- select and evaluate appropriateness of information (authenticity) from a variety of resources, including online research databases, online catalogs/virtual library and web sites to answer the essential questions
- evaluate the accuracy and appropriateness of electronic information and correctly note the appropriate citations (e.g., APA, MLA)
- organize information that is collected using a variety of tools (e.g., spreadsheet, database, saved files)
- manipulate data using charting tools and graphic organizers (e.g., concept mapping, flow charting and outlining software) to connect ideas and organize information
- express and synthesize digital information collected in research effectively and accurately to produce original work (e.g., desktop-published or word-processed report, multimedia presentation, engineering design)

Skills and Concepts - Inquiry/Problem-solving

- select and apply technology in content learning to solve authentic problems and make informed decisions
- apply teamwork and critical thinking strategies to solve technology problems
- explain how technology can be used for problem solving and creativity (e.g., simulation software, environmental probes, computer-aided design, geographic information systems, dynamic geometric software, graphing calculators, art and music composition software)
- analyze and troubleshoot software and hardware problems
- investigate and apply expert systems and simulations in real-world situations
- identify open-ended, unresolved problems and select and use appropriate technology to develop solutions
- explore how inquiry/problem-solving impact science, technology, engineering and mathematics (STEM) (e.g., design, programming, robotics)

Skills and Concepts - Innovation

- use technology to express creativity in all content areas
- design, develop, publish and present original innovative products (e.g., Web pages, video, robotics, online content)
- produce an innovative product or system using an engineering design process
- collaborate with peers, experts and others to develop solutions and innovative products (e.g., design/CAD, troubleshooting, helpdesk, models, systems)
- recognize that innovative ideas, products and skills lead to intellectual property and copyrights
- describe how technological innovation leads to entrepreneurial opportunities