K-12 Technology

Benchmarks by Grade Band

Technology Benchmarks

By the end of the K-2 program:

Standard 1: Nature of Technology	Standard 2: Technology and Society Interaction	Standard 3: Technology for Productivity Applications
A. Recognize the characteristics and scope of technology. B. Describe and give examples of technology's core concepts: systems, resources and processes. C. Describe the relationships among technologies, and the connections between technology and other fields of study.	A. Identify responsible citizenship relative to technology and its use. B. Recognize that technology has an interrelationship with the environment. C. Describe and demonstrate how technology has had an influence on our world. D. Collect information about products and discuss whether solutions create positive or negative results.	A. Understand basic computer and multimedia technology concepts and terminology. B. Demonstrate operation of basic computer and multimedia technology tools. C. Use productivity tools to produce creative works.

Notes:

Technology Benchmarks

By the end of the K-2 program:

Standard 4 Technology and Communication Applications	Standard 5 Technology and Information Literacy
A. Investigate the nature and operation of communication systems. B. Explore how information can be published and presented in different formats. C. Participate in group projects and learning activities using technology communications.	A. State what information is, and show where it can be found. B. Use a simple research process model which includes deciding what to use, finding resources, using information and checking work to generate a product. C. Apply basic browser and navigation skills to find information from the Internet.

Notes:

Technology Benchmarks

By the end of the K-2 program:

Standard 6: Design	Standard 7: Designed World
A. Identify problems and potential technological solutions. B. Understand that changes in design can be used to strengthen or improve an object. C. Explore how products are invented and repaired.	A. Develop an understanding of the goals in physical technologies. B. Develop an understanding of the goals of informational technologies. C. Develop an understanding of the goals of bio-related technologies.

Notes:

Technology Benchmarks

By the end of the 3-5 program:

Standard 1: Nature of Technology	Standard 2: Technology and Society Interaction	Standard 3: Technology for Productivity Applications
A. Compare and discuss the characteristics of technology in our community. B. Identify, describe and discuss the core concepts of technology. C. Compare and discuss the relationships among technologies, and the connections between technology and other fields of study.	A. Define responsible citizenship relative to technology. B. Investigate and explain the interrelationships between technology and the environment. C. Explain and demonstrate the influence of technology throughout history. D. Practice responsible use of technology, understand school district guidelines for technology use, and explore technology ownership. E. Identify development patterns and examine the influence of technology on the world.	A. Understand computer and multimedia technology concepts and communicate using the correct terminology. B. Use appropriate tools and technology resources to complete tasks and solve problems. C. Use productivity tools to produce creative works and prepare publications.

Notes:

Technology Benchmarks

By the end of the 3-5 program:

Standard 4 Technology and Communication Applications	Standard 5 Technology and Information Literacy
A. Identify the concepts and operations of communication systems. B. Develop, publish and present information in print and digital formats. C. Use technology communications to participate in online group collaborative interactive projects and activities.	A. Describe types of information: facts, opinions, primary/secondary sources; and formats of information: number, text, sound, visual, multimedia; and use information for a purpose. B. Use technology to find information by applying a research process to decide what information is needed, find sources, use information and check work. C. Use the Internet to find, use and evaluate information. D. Identify, access and use electronic resources from both free and fee-based Internet sources.

Notes:

Technology Benchmarks

By the end of the 3-5 program:

Standard 6: Design	Standard 7: Designed World
A. Describe and apply a design process to solve a problem. B. Describe how engineers and designers define a problem, creatively solve it and evaluate the solution. C. Understand the role of troubleshooting in problem-solving.	A. Develop an understanding of how physical technologies enhance our lives. B. Recognize appropriate modes of technical communication across technological systems. C. Develop an understanding of how bio-related technologies improve our lives.

Notes:

Technology Benchmarks

By the end of the 6-8 program:

Standard 1: Nature of Technology	Standard 2: Technology and Society Interaction	Standard 3: Technology for Productivity Applications
A. Analyze information relative to the characteristics of technology and apply in a practical setting. B. Apply the core concepts of technology in a practical setting. C. Analyze the relationships among technologies and explore the connections between technology and other fields of study.	A. Analyze technologically responsible citizenship. B. Describe and explain the impact of technology on the environment. C. Describe how design and invention have influenced technology throughout history. D. Articulate intellectual property issues related to technology and demonstrate appropriate, ethical and legal use of technology. E. Assess the impact of technological products and systems.	A. Demonstrate an understanding of concepts underlying hardware, software and connectivity. B. Select appropriate technology resources to solve problems and support learning. C. Use productivity tools to produce creative works, to prepare publications and to construct technology-enhanced models.

Notes:

Technology Benchmarks

By the end of the 6-8 program:

Standard 4 Technology and Communication Applications	Standard 5 Technology and Information Literacy
A. Communicate information technologically and incorporate principles of design into the creation of messages and communication products. B. Develop, publish and present information in a format that is appropriate for content and audience. C. Select appropriate technology communication tools and design collaborative interactive projects and activities to communicate with others.	A. Evaluate the accuracy, authority, objectivity, currency, coverage and relevance of information and data sources. B. Use technology to conduct research and follow a research process model which includes the following: developing essential question; identifying resources; selecting, using and analyzing information; synthesizing and generating a product; and evaluate both process and product. C. Develop search strategies, retrieve information in a variety of formats and evaluate the quality and appropriate use of Internet resources. D. Select, access and use appropriate electronic resources for a defined information need.

Notes:

Technology Benchmarks

By the end of the 6-8 program:

Standard 6: Design	Standard 7: Designed World
A. Evaluate the aesthetic and functional components of a design and identify creative influences. B. Recognize the role of engineering design and of testing in the design process. C. Understand and apply research, innovation and invention to problem-solving.	A. Develop an understanding of, and be able to, select and use physical technologies. B. Develop an understanding of, and be able to, select and use informational technologies. C. Develop an understanding of how bio-related technologies have changed over time.

Notes:

Technology Benchmarks

By the end of the 9-12 program:

Standard 1: Nature of Technology	Standard 2: Technology and Society Interaction	Standard 3: Technology for Productivity Applications
A. Synthesize information, evaluate and make decisions about technologies. B. Apply technological knowledge in decision-making. C. Examine the synergy between and among technologies and other fields of study when solving technological problems.	A. Interpret and practice responsible citizenship relative to technology. B. Demonstrate the relationship among people, technology and the environment. C. Interpret and evaluate the influence of technology throughout history, and predict its impact on the future. D. Analyze ethical and legal technology issues and formulate solutions and strategies that foster responsible technology usage. E. Forecast the impact of technological products and systems.	A. Integrate conceptual knowledge of technology systems in determining practical applications for learning and technical problem-solving. B. Identify, select and apply appropriate technology tools and resources to produce creative works and to construct technology-enhanced models.

Notes:

Technology Benchmarks

By the end of the 9-12 program:

Standard 4 Technology and Communication Applications	Standard 5 Technology and Information Literacy
A. Apply appropriate communication design principles in published and presented projects. B. Create, publish and present information, utilizing formats appropriate to the content and audience. C. Identify communication needs, select appropriate communication tools and design collaborative interactive projects and activities to communicate with others, incorporating emerging technologies.	A. Determine and apply an evaluative process to all information sources chosen for a project. B. Apply a research process model to conduct research and meet information needs. C. Formulate advanced search strategies, demonstrating an understanding of the strengths and limitations of the Internet, and evaluate the quality and appropriate use of Internet resources. D. Evaluate choices of electronic resources and determine their strengths and limitations.

Notes:

Technology Benchmarks

By the end of the 9-12 program:

Standard 6: Design	Standard 7: Designed World
A. Identify and produce a product or system using a design process, evaluate the final solution and communicate the findings. B. Recognize the role of teamwork in engineering design and of prototyping in the design process. C. Understand and apply research, development and experimentation to problem-solving.	A. Classify, demonstrate, examine, and appraise energy and power technologies. B. Classify, demonstrate, examine and appraise transportation technologies. C. Classify, demonstrate, examine and appraise manufacturing technologies. D. Classify, demonstrate, examine and appraise construction technologies. E. Classify, demonstrate, examine and appraise information and communication technologies. F. Classify, demonstrate, examine and appraise medical technologies. G. Classify, demonstrate, examine and appraise agricultural and related biotechnologies.

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ACADEMIC CONTENT STANDARDS