

Roosevelt Public School



**TECHNOLOGY EDUCATION
CURRICULUM
GUIDE**

PRE-KINDERGARTEN – GRADE 6

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MISSION STATEMENT

The mission of the Roosevelt Public School District is to educate and inspire all students to excel academically*, to become independent and creative thinkers, skillful communicators and lifelong learners. Roosevelt Public School nurtures and challenges the unique potential of each student so that our children will develop individual, social and civic responsibility as well as respect for themselves, each other, and the environment.

*to achieve or exceed N.J. CCCS at all grade levels

Roosevelt Public School
New Jersey Core Curriculum Content Standards
for
Technology

INTRODUCTION

Technology Vision

Through the teaching of computer literacy, computer lab related experiences, and classroom integration, Roosevelt Public School shall give to every pupil the opportunity to develop skills to use computer applications to manipulate and communicate information in an ethical manner. Computer and information literacy, which supports skills in information gathering, information organizing, and problem solving, is critical for every student whether college- or workplace-bound. Students will conduct research, solve problems, improve learning, achieve goals, and produce products and presentations in conjunction with standards in all content areas. They will also develop, locate, summarize, organize, synthesize, and evaluate information for life-long learning.

Technology is evolving at an amazing rate, with both frequent advancements of existing technology and the creation of new technologies. All students must understand and be comfortable with the concepts and application of technology, not only in order to function in today's complex society, but also to become informed and productive adults of tomorrow.

Technology in the 21st Century

Technology is uniquely positioned to transform learning, to foster critical thinking, creativity, and innovation, and to prepare students to thrive in the global economy. As engaged digital learners, students are able to acquire and apply content knowledge and skills through active exploration, interaction, and collaboration with others across the globe, challenging them to *design the future* as envisioned in the statements that follow:

Mission: *Technology enables students to solve real world problems, enhance life, and extend human capability as they meet the challenges of a dynamic global society.*

Vision: The systematic integration of technology across the curriculum and in the teaching and learning process fosters a population that leverages 21st century resources to:

- Apply information-literacy skills to access, manage, and communicate information using a range of emerging technological tools.
- Think critically and creatively to solve problems, synthesize and create new knowledge, and make informed decisions that affect individuals, the world community, and the environment.

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- Gain enhanced understanding of global interdependencies as well as multiple cultural perspectives, differing points of view, and diverse values.
- Employ a systemic approach to understand the design process, the designed world, and the interrelationship and impact of technologies.
- Model digital citizenship.

Intent and Spirit of the Technology Standards

All students acquire content area knowledge and skills in: (1) Visual and Performing Arts, (2) Comprehensive Health and Physical Education, (3) Language Arts Literacy, (4) Mathematics, (5) Science, (6) Social Studies, (7) World Languages, (8) Educational Technology, Technology Education, Engineering, and Design, and (9) 21st Century Life and Careers. As they do so, they are supported by the ongoing, transparent, and systematic integration of technology from preschool to grade 12 in preparation for postsecondary education and the workplace.

In **Preschool**, technology offers versatile learning tools that can support children’s development in all domains. For example, electronic storybooks can “read” stories to children in multiple languages; adventure games foster problem-solving skills; story-making programs encourage literacy and creativity; math-related games can help children count and classify; and science activities promote inquiry and an understanding of the world through the eyes of a child. When preschoolers are encouraged to work together with electronic devices and computers, social skills are tapped as children negotiate turn-taking. However, technology should not replace the concrete, real-life experiences that are critical to a young child’s learning; it must always be used in balance with other meaningful activities and routines. Technology should be embedded into children’s learning centers and should enhance their learning and development during choice time as well as in small-group experiences.

In grades **K-2**, students are formally introduced to the basic features and functions of computers and demonstrate understanding that technology enables them to communicate beyond the classroom on a variety of topics. K-2 students are also exposed to elements of the design process, design systems, and a variety of technology resources, and understand the importance of safety when using technological tools.

In grades **3-4**, students understand the purpose of, and are able to use, various computer applications. They continue to develop information-literacy skills and increasingly use technology to communicate with others in support of learning, while also recognizing the need for cyber safety and acceptable use policies. Students in grades 3-4 also investigate the impact of technology systems, understand the design process, and use it for problem solving.

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In grades **5-8**, students expand their capacity to use operations and applications, apply information-literacy skills, and select the appropriate tools and resources to accomplish a variety of tasks, as they develop digital citizenship. As students participate in online learning communities, collaborating in the design of products that address local and global issues across the curriculum, they build understanding of the perspectives of learners from other countries. Students at this level can apply the design process in the development of products; understand impact constraints, trade-offs, and resource selection; and solve a design challenge and/or build a prototype using the design process. Students can explain why human-designed systems, products, and environments need to be monitored, maintained, and improved, and they recognize the interdependence of subsystems as parts of a system.

Revised Standards

The 2009 standards provide the foundation for creating local curricula and authentic performance assessments and emulate the philosophy and goals contained in documents produced by national technology organizations, including the Partnership for the 21st Century Skills and the [New Jersey Educational Technology Plan](#). The organization of the strands in standards 8.1 and 8.2, as well as the content and skills within each strand, has been reconceptualized to address emerging technologies and technological applications that are needed for life and work in the global age.

- Standard 8.1, Educational Technology, is aligned to the [International Society for Technology in Education](#) (ISTE) standards and the [Partnership for the 21st Century Skills](#) framework.
- Standard 8.2, formerly Technology Education, is renamed Technology Education, Engineering, and Design and is aligned with the goals of the [International Technology Education Association](#) (ITEA) and the Partnership for 21st Century Skills framework.

National, International, and State Advocacy

The Partnership for 21st Century Skills, ISTE, and the [American Association of School Libraries](#) (AASL) provide leadership and service to improve teaching and learning by advancing the effective use of technology in education. The ITEA promotes technological literacy by supporting the teaching of technology. The [Consortium for School Networking](#) (CoSN) is an organization for K-12 technology leaders who use technology strategically to improve learning.

At the state level, the [New Jersey Technology Education Association](#) (NJTEA) fosters the development of technological literacy through Technology Education Programs. The [New Jersey Association for Educational Technology](#) (NJ AET) and the [New Jersey Educational Computing Cooperative](#) (NJECC), Inc., promote and support the integration of technology in education as it applies to student learning, professional development, and instructional planning.

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Resources

American Association of School Librarians. (2007). *Standards for the 21st century learner*. Online: <http://www.aasl.org>

International Society for Technology in Education. (2002). *National educational technology standards for administrators*. Online: http://www.iste.org/Content/NavigationMenu/NETS/ForAdministrators/2009Standards/NETS_for_Administrators_2009.htm

International Society for Technology in Education. (2007). *National educational technology standards for students* (2nd Ed.). Online: http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS_for_Students_2007.htm

International Society for Technology in Education. (2008). *National educational technology standards for teachers* (2nd Ed.). Online: http://www.iste.org/Content/NavigationMenu/NETS/ForTeachers/2008Standards/NETS_for_Teachers_2008.htm

International Technology Education Association. (2003). *Advancing excellence in technological literacy: Student assessment, professional development, and program standards*. Online: <http://www.iteaconnect.org/TAA/PDFs/AETL.pdf>

International Technology Education Association. (2007). *Standards for technological literacy*. Online: <http://www.iteaconnect.org/TAA/PDFs/xstnd.pdf>

Partnership for 21st Century Skills. (2005). *Framework for 21st century learning*. Online: <http://www.21stcenturyskills.org>

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Standards and Strands

There are two technology standards, each of which has a number of lettered strands. The standards and strands include:

STANDARD 8.1 Educational Technology - All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

- A. Technology Operations and Concepts
- B. Creativity and Innovation
- C. Communication and Collaboration
- D. Digital Citizenship
- E. Research and Information Literacy
- F. Critical thinking, Problem Solving and Decision Making

STANDARD 8.2 Technology Education, Engineering, and Design – All students will develop an understanding of the nature and impact of technology, engineering, technological design and the designed world, as they relate to the individual, global society, and the environment.

- A. Nature of Technology: Creativity and Innovation
- B. Design: Critical Thinking, Problem Solving, Decision Making
- C. Technological Citizenship, Ethics and Society
- D. Research and Information Fluency
- E. Communication and Collaboration
- F. Resources for a Technological World
- G. The Designed World

At the elementary level, the foundation for technology education is also found in the science standards, particularly standards 5.2 and 5.4.

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8.1 Educational Technology – All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

The Big Idea

A computer is an adaptable tool for organizing information and solving problems that facilitates lifelong learning.

Enduring Understanding:

- That technology is constantly changing and requires continuous learning of new skills.
- The selection of technology should be based on personal and/or career needs assessment.
- A tool is only as good as the person using it.
- Technology use can have positive or negative impact on both users and those affected by their use.

Essential Questions:

- In a world of constant technological change, what skills should we learn?
- How do I choose which technological tool to use and when it is appropriate to use them?
- How can I transfer what I know to new technological situations/experiences?
- What are my responsibilities for using technology?

BENCHMARKS	CONCEPTS/SKILLS	ACTIVITIES and ASSESSMENTS
<i>By the end of Kindergarten, students will be able to:</i>		
<p><u>8.1. A - Technology Operations and Concepts-</u></p> <p>Recognize that the use of technology and digital tools requires knowledge and</p>	<p>Navigate simple menus on screen with a mouse. Open/exit a program. Login/out.</p> <p>Use the mouse to navigate, point and click.</p>	<p><i>The assessments below may be utilized to assess the achievement of any/all of the benchmarks and skills.</i></p> <p><i>Teacher will create specific</i></p>

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<p>appropriate use of operations and related applications.</p>	<p>Identify the “power keys” ENTER, spacebar, delete, etc.</p> <p>Recognize the location of number and letter keys</p> <p>Print a document with teacher’s help.</p> <p>Use basic technology terms: mouse, keyboard, computer, and menu.</p> <p>Utilize software: KidPix, Thinkin’ Things, Type to Learn to expand knowledge.</p>	<p><i>assessments.</i></p> <p>Observation</p> <p>Question and Answer</p> <p>Modeling</p> <p>Rubrics</p> <p>Projects</p> <p>Presentations</p> <p>Discussion</p> <p>Demonstration</p> <p>Guided Practice</p> <p>Independent Practice</p> <p>Games</p> <p>Role Playing</p> <p>Selected Activities</p>
<p><u>8.1.B – Creativity and Innovation</u></p> <p>Understand that the use of digital tools and media rich resources enhances creativity and the construction of knowledge.</p>	<p>Understand that the digital camera and camcorder takes pictures.</p> <p>Utilize KidPix, AppleWorks and other applications and programs to enhance the curriculum and promote creativity.</p> <p>Access and use drawing and painting tools.</p>	
<p><u>8.1.C – Communication and Collaboration</u></p> <p>Explain how digital tools help children learn and foster collaboration to solve problems.</p>	<p>Operate a high quality, interactive game or activity.</p> <p>Work on a project with children in the upper grades.</p> <p>Access materials on a disk, cassette tape, or DVD.</p>	
<p><u>8.1.E – Research and Information Literacy</u></p> <p>Understand that computers help to gather</p>	<p>With teacher’s help, use the Internet for exploration.</p>	

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information.	With teacher's help, use the Internet for exploration.	<p>Final Product</p> <p>Publication of Student's Work</p> <p>Quizzes</p> <p>Tests</p>
<p><u>8.1.F – Critical Thinking, Problem Solving, and Decision Making</u></p> <p>Understand that the computer helps to make decisions.</p>	<p>Access the Internet.</p> <p>Use the "back" key.</p> <p>Open/close window.</p>	
<p>BENCHMARKS</p> <p><i>By the end of 2nd grade, students will be able to:</i></p>	<p>CONCEPTS/SKILLS</p>	<p>ACTIVITIES and ASSESSMENTS</p>
<p><u>8.1. A - Technology Operations and Concepts</u></p> <p>Recognize that the use of technology and digital tools requires knowledge and appropriate use of operations and related applications.</p>	<p>Identify basic features and parts of a computer, explain and demonstrate how to use them. Point, click, Power Keys, mouse, menu, CD, etc.</p> <p>Use appropriate terminology.</p> <p>Open/close file.</p> <p>Produce and print a document.</p> <p>Use spell check.</p> <p>Save work.</p> <p>Produce a document changing the font, size, and color of text.</p>	<p><i>The assessments below may be utilized to assess the achievement of any/all of the benchmarks and skills.</i></p> <p><i>Teacher will create specific assessments.</i></p> <p>Observation</p> <p>Question and Answer</p> <p>Modeling</p>

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	<p>Utilize basic computer and Internet vocabulary.</p> <p>Open/exit program. Minimize/maximize windows.</p> <p>Describe uses of common applications and hardware such as word processing and printers. Identify their advantages and disadvantages.</p> <p>Navigate selected websites including Internet scavenger hunts.</p>	<p>Rubrics</p> <p>Projects</p> <p>Presentations</p> <p>Discussion</p> <p>Demonstration</p> <p>Guided Practice</p> <p>Independent Practice</p> <p>Games</p> <p>Role Playing</p> <p>Selected Activities</p> <p>Final Product</p> <p>Publication of Student's Work</p> <p>Quizzes</p> <p>Tests</p>
<p><u>8.1.B – Creativity and Innovation</u></p> <p>Understand that the use of digital tools and media rich resources enhances creativity and the construction of knowledge.</p>	<p>Illustrate and communicate original ideas and stories using digital tools.</p> <p>Copy/paste/insert graphic into story.</p> <p>Incorporate a digital image into story.</p> <p>Add graphics from clip art and Internet.</p>	
<p><u>8.1.C – Communication and Collaboration</u></p> <p>Explain how digital tools help children learn and foster collaboration to solve problems.</p>	<p>Collaborate with students in other classes or schools using electronic media.</p> <p>Access the Internet using the district homepage.</p> <p>Use search tools by accessing Internet sites and searching for information.</p> <p>Work in groups.</p>	

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<p><u>8.1.D – Digital Citizenship</u></p> <p>Understand that technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors.</p>	<p>Follow and explain the AUP.</p> <p>Respect others computer and privacy.</p> <p>Access only school appropriate websites.</p> <p>Recognize that plagiarism is illegal.</p> <p>Recognize the importance of not using another person’s files or passwords.</p>	
<p><u>8.1.E – Research and Information Literacy</u></p> <p>Effectively use digital tools to assist in gathering and managing information.</p>	<p>Use the Internet and other resources to obtain information.</p> <p>Create a digital survey.</p> <p>Save documents to a folder.</p>	
<p><u>8.1.F – Critical Thinking, Problem Solving, and Decision-Making</u></p> <p>Understand that information accessed through the use of digital tools assists in generating solutions and making decisions.</p>	<p>Utilize mapping information to plan and choose routes from one location to another.</p> <p>Complete a Web Quest or scavenger hunt.</p> <p>Utilize curriculum resources to enhance learning.</p>	
<p>BENCHMARKS</p> <p><i>By the end of the 4th grade students will be able to:</i></p>	<p>CONCEPTS/SKILLS</p>	<p>ACTIVITIES and ASSESSMENTS</p>
<p><u>8.1. A - Technology Operations and</u></p>	<p>Use appropriate technology vocabulary.</p> <p>Manipulate windows: resize, move, open,</p>	<p><i>The assessments below may be utilized to assess the achievement of any/all of the benchmarks and</i></p>

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<p><u>Concepts</u></p> <p>Recognize that the use of technology and digital tools requires knowledge and appropriate use of operations and related applications.</p>	<p>close.</p> <p>Use spell and grammar checks to edit text.</p> <p>Identify the desktop items and dock items.</p> <p>Navigate the Internet using Search Engines.</p> <p>Type with 2 hands and identify Home Row Keys.</p> <p>Create a simple chart or graph and interpret.</p> <p>Cut, copy, and paste text and graphics.</p> <p>Recognize the location of the comma, period, question mark, quotations and other punctuation marks.</p> <p>Identify the basic components of email: To, From, Subject, etc.</p>	<p><i>skills.</i></p> <p><i>Teacher will create specific assessments.</i></p> <p>Observation</p> <p>Question and Answer</p> <p>Modeling</p> <p>Rubrics</p> <p>Projects</p> <p>Presentations</p>
<p><u>8.1.B – Creativity and Innovation</u></p> <p>Understand that the use of digital tools and media rich resources enhances creativity and the construction of knowledge.</p>	<p>Create a 5-7 slide multimedia presentation adding text, animation, transitions.</p> <p>Utilize the digital camera and incorporate digital images.</p> <p>Produce a digital story using digital images, interviews, research, etc.</p>	<p>Discussion</p> <p>Demonstration</p> <p>Guided Practice</p>
<p><u>8.1.C – Communication and Collaboration</u></p> <p>Explain how digital tools help children learn</p>	<p>Engage in online discussions with learners from other schools.</p> <p>Learn about the other students’</p>	<p>Independent Practice</p> <p>Games</p>

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<p>and foster collaboration to solve problems.</p>	<p>perspectives. Research a topic with a classmate.</p>	<p>Role Playing Selected Activities Final Product Publication of Student's Work Quizzes Tests</p>
<p><i>8.1.D – Digital Citizenship</i> Understand that technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors.</p>	<p>Explain why cyber safety, ethics and security are important to practice. Explain why adhering to copyright laws is important for print and nonprint items. Practice Internet etiquette. Discuss the purpose of an AUP and the consequences for inappropriate use of technology. Evaluate websites for content and credibility.</p>	
<p><i>8.1.E – Research and Information Literacy</i> Effectively use digital tools to assist in gathering and managing information.</p>	<p>Utilize the Internet and other resources to investigate a problem or issue in the United States. Articulate the accuracy of using print and non-print electronic information. Use a spreadsheet to input information. Identify simple web browsers, search engines and directories. Access a Web quest to learn about a curriculum topic. Locate specific information by searching a database.</p>	

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<p><u>8.1.F – Critical Thinking, Problem Solving, and Decision-Making</u></p> <p>Understand that information accessed through the use of digital tools assists in generating solutions and making decisions.</p>	<p>Use the Internet to collect, organize and analyze data in the area of science.</p> <p>Share the information with others locally and globally.</p> <p>Create an online survey; analyze the data, and present findings.</p>	
<p>BENCHMARKS</p> <p><i>By the end of the 6th grade students will be able to:</i></p>	<p>CONCEPTS/SKILLS</p>	<p>ACTIVITIES and ASSESSMENTS</p>
<p><u>8.1. A - Technology Operations and Concepts</u></p> <p>Recognize that the use of technology and digital tools requires knowledge and appropriate use of operations and related applications.</p>	<p>Create a professional document, newsletter, flyer, business letter, using advanced features of AppleWorks or MS Word.</p> <p>Create a multimedia presentation incorporating, sound, animation, images.</p> <p>Generate a spreadsheet to calculate, to graph, and present information.</p> <p>Utilize shortcut commands.</p> <p>Create personal bookmarks.</p> <p>Type with 2 hands.</p> <p>Use the dictionary, spell check and thesaurus tools.</p>	<p><i>The assessments below may be utilized to assess the achievement of any/all of the benchmarks and skills.</i></p> <p><i>Teacher will create specific assessments.</i></p> <p>Observation</p> <p>Question and Answer</p>

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<p><u>8.1.B – Creativity and Innovation</u></p> <p>Understand that the use of digital tools and media rich resources enhances creativity and the construction of knowledge.</p>	<p>Publish a story about a significant local event or issue.</p> <p>Incorporate text, digital images, and animation.</p>	<p>Modeling</p> <p>Rubrics</p> <p>Projects</p> <p>Multimedia Presentations</p> <p>Discussion</p> <p>Demonstration</p> <p>Guided Practice</p> <p>Independent Practice</p> <p>Games</p> <p>Role Playing</p> <p>Selected Activities</p> <p>Final Product</p> <p>Publication of Student’s Work</p> <p>Quizzes</p> <p>Tests</p>
<p><u>8.1.C – Communication and Collaboration</u></p> <p>Explain how digital tools help children learn and foster collaboration to solve problems.</p>	<p>Use the Internet to learn about students from other countries.</p> <p>Obtain an e-pal account if applicable.</p> <p>Collaborate to troubleshoot basic internet problems.</p>	
<p><u>8.1.D – Digital Citizenship</u></p> <p>Understand that technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors.</p>	<p>Model for all appropriate online behaviors related to cyber safety, bullying, security, and ethics.</p> <p>Explain the ethical implications of copyright laws and plagiarism.</p>	
<p><u>8.1.E – Research and Information Literacy</u></p> <p>Effectively use digital tools to assist in gathering and managing information.</p>	<p>Utilize the Internet to obtain and articulate information.</p> <p>Use Internet research tips such as =, -, “ and search engines such as Google, Lycos, Alta Vista.</p> <p>Research a societal issue or concern and articulate solutions.</p> <p>Create a multi page document with citations using the Internet and word processing information.</p> <p>Input and retrieve information into and</p>	

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	from a database Use shared folders and create individual folders.	
<u>8.1.F – Critical Thinking, Problem Solving, and Decision-Making</u> Understand that information accessed through the use of digital tools assists in generating solutions and making decisions.	Select and apply digital tools to collect, organize, and analyze data that support a scientific finding. Create an online survey, graph and report findings.	

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8.2 Technology Education, Engineering, and Design: All students will develop an understanding of the nature and impact of technology, engineering, technological design, and the designed world, as they relate to the individual, global society, and the environment.

The Big Idea

Technological literacy skills enable learners to adapt to a rapidly changing, man-made world by using problem solving to generate solutions from the conceptual stage to the final product.

Enduring Understandings:

- Choices we make as individuals affect self, family, community and the world.
- Technology evolves at an ever accelerating pace based on the needs/wants of society and is influenced by cultural, political and environmental values and constraints.
- Technological outcomes have the potential for anticipated and unanticipated positive and negative results.

Essential Questions:

- How do we keep up with the pace at which technology is created? And, should we?
- How does technology extend human capabilities?
- What are the positive and negative consequences of technology?
- When should we use the most sophisticated tools and when should we use the simplest?

BENCHMARKS	CONCEPTS/SKILLS	ACTIVITIES and ASSESSMENTS
<i>By the end of the 2nd grade students will be able to:</i>		
<p><u>8.2.A – Nature of Technology: Creativity and Innovation</u></p> <p>Explain how technology products impact how we live.</p>	<p>Learn about different technologies.</p> <p>Discuss how technologies are useful at school and at home.</p>	<p><i>The assessments below may be utilized to assess the achievement of any/all of the benchmarks and skills.</i></p>

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<p><u>8.2.B – Design: Critical Thinking, Problem Solving, and Decision-Making</u></p> <p>Utilize a systematic approach to solve problems.</p>	<p>Brainstorm a plan to repair a broken toy or tool.</p>	<p><i>Teacher will create specific assessments.</i></p> <p>Observation</p> <p>Question and Answer</p> <p>Modeling</p> <p>Rubrics</p> <p>Projects</p> <p>Multimedia Presentations</p> <p>Discussion</p> <p>Demonstration</p> <p>Guided Practice</p> <p>Independent Practice</p> <p>Games</p> <p>Role Playing</p>
<p><u>8.2.C – Technological Citizenship, Ethics, and Society</u></p> <p>Understand human values when creating products.</p>	<p>Respect the work of others.</p> <p>Explain how recycling or reusing a product affects the environment.</p> <p>Practice ecological printing and copying.</p>	
<p><u>8.2.D – Research and Information Fluency</u></p> <p>Understand the importance of researching information when creating something.</p>	<p>Create a survey about a problem or issue and have the teacher model it online.</p> <p>Use the information to discuss the problem.</p>	
<p><u>8.2.E – Communication and Collaboration</u></p> <p>Understand that digital tools facilitate local and global communication and collaboration.</p>	<p>Understand that one can connect to others in your town, home, state, country, etc. using the Internet.</p>	
<p><u>8.2.F – Resources for a Technological World</u></p> <p>Understand that technological products are created through technological resources.</p>	<p>Discuss, brainstorm items needed to create technologies.</p>	
<p><u>8.2.G – The Designed World</u></p>	<p>Put together a toy and demonstrate how the parts work together.</p>	

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<p>Understand that the parts of a toy or a tool or a system can be put together to create a product.</p>	<p>Explain why safety is important when using tools to make a product.</p>	<p>Selected Activities</p> <p>Final Product</p> <p>Publication of Student’s Work</p> <p>Quizzes</p> <p>Tests</p>
<p>BENCHMARKS</p> <p><i>By the end of the 4th grade students will be able to:</i></p>	<p>CONCEPTS/SKILLS</p>	<p>ACTIVITIES and ASSESSMENTS</p>
<p><u>8.2.A – Nature of Technology: Creativity and Innovation</u></p> <p>Explain how technology impacts every aspect of our lives and the world in which we live.</p>	<p>Explain how technology impacts us at home and at school.</p> <p>Compare and contrast how a technology product has changed over time (cell phones, iPods, televisions, radios, etc).</p>	<p><i>The assessments below may be utilized to assess the achievement of any/all of the benchmarks and skills.</i></p>
<p><u>8.2.B – Design: Critical Thinking, Problem Solving, and Decision-Making</u></p> <p>Understand that designing a product involves problem solving in a systematic approach.</p>	<p>Explore how technologies are designed.</p> <p>Explain the positive and/or negative effects of technology on humans and the environment.</p> <p>Describe how the design of one technology project can be used to aid in the design of other products (microchips are used in all technologies and medical</p>	<p>Observation</p> <p>Question and Answer</p> <p>Modeling</p> <p>Rubrics</p>

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<p><u>8.2.B – Design: Critical Thinking, Problem Solving, and Decision-Making</u></p> <p>Understand that designing a product involves problem solving in a systematic approach.</p>	<p>equipment).</p>	<p>Projects</p> <p>Multimedia Presentations</p> <p>Discussion</p> <p>Demonstration</p> <p>Guided Practice</p> <p>Independent Practice</p> <p>Games</p> <p>Role Playing</p> <p>Selected Activities</p> <p>Final Product</p> <p>Publication of Student’s Work</p> <p>Quizzes</p> <p>Tests</p>
<p><u>8.2.C – Technological Citizenship Ethics, and Society</u></p> <p>Understanding human culture and values are important when designing technologies.</p>	<p>Research and explain why it is important to dispose of materials in a responsible way (batteries, recycling, waste products, computer equipment).</p>	
<p><u>8.2.D – Research and Information Fluency</u></p> <p>Understand that information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology.</p>	<p>Make predictions on new technologies and how they will affect our lives.</p>	
<p><u>8.2.E – Communication and Collaboration</u></p> <p>Understand that digital tools aid in local and global communication and collaboration in designing products.</p>	<p>Explain how technology can help solve problems.</p>	
<p><u>8.2.F – Resources for a Technological World</u></p> <p>Understand that technological products and</p>	<p>Describe how resources are used to make technological products.</p>	

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<p>systems are created through the application of and appropriate use of technological resources.</p>	<p>Describe how resources are used to make technological products.</p>	
<p>8.2.G – <u>The Designed World</u></p> <p>Recognize that the design process provides a way to convert resources into products.</p>	<p>Examine a malfunctioning tool and use a step-by-step process to troubleshoot and present options to repair the product.</p> <p>Evaluate the function and value of a technological product. Explain how the product is important to oneself.</p>	
<p>BENCHMARKS</p> <p><i>By the end of the 6th grade students will be able to:</i></p>	<p>CONCEPTS/SKILLS</p>	<p>ACTIVITIES and ASSESSMENTS</p>
<p>8.2.A – <u>Nature of Technology: Creativity and Innovation</u></p> <p>Explain how technology impacts every aspect of our lives and the world in which we live.</p>	<p>Choose a technology product and explain how it impacts our life and the lives of others.</p>	<p><i>The assessments below may be utilized to assess the achievement of any/all of the benchmarks and skills.</i></p>
<p>8.2.B – <u>Design: Critical Thinking, Problem Solving, and Decision-Making</u></p> <p>Understand that designing a product involves problem solving in a systematic approach.</p>	<p>Learn how a technology is designed.</p> <p>Explain the positive and/or negative effects on humans and the environment.</p> <p>Explain how one technology promotes the design of another.</p>	<p>Observation</p> <p>Question and Answer</p> <p>Modeling</p>

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<p><u>8.2.C – Technological Citizenship, Ethics, and Society</u></p> <p>Understanding human culture and values are important when designing technologies.</p>	<p>Explain why it is important to dispose of materials in a responsible way (recycling).</p> <p>Research the importance of trademarks, patents, and copyright laws.</p>	<p>Rubrics</p> <p>Projects</p> <p>Multimedia Presentations</p> <p>Discussion</p> <p>Demonstration</p> <p>Guided Practice</p> <p>Independent Practice</p> <p>Games</p> <p>Role Playing</p> <p>Selected Activities</p> <p>Final Product</p> <p>Publication of Student’s Work</p> <p>Quizzes</p> <p>Tests</p>
<p><u>8.2.D – Research and Information Fluency</u></p> <p>Understand that information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology.</p>	<p>Explain why ethics and values are important when designing a technology product.</p>	
<p><u>8.2.E – Communication and Collaboration</u></p> <p>Understand that digital tools aid in local and global communication and collaboration in designing products.</p>	<p>Work with a partner and research whether technology was successfully or unsuccessfully used to address a problem.</p>	
<p><u>8.2.F – Resources for a Technological World</u></p> <p>Understand that technological products and systems are created through the application of and appropriate use of technological resources.</p>	<p>Explain how the use of different resources can positively or negatively affect the environment (using recycled material, alternate energy).</p>	
<p><u>8.2.G – The Designed World</u></p> <p>Recognize that the design process provides a</p>	<p>Explain how different systems work (school system, digestive system, computer system) and relate this to technology.</p>	

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way to convert resources into products.		
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Pre-K/Grade K

COURSE BENCHMARKS

Use the mouse and/or track pad by clicking and dragging
Identify the basic parts of the computer
Use the following tools: pencil, fill, typewriter, oops man, stamps, letter/number, and eraser
Use the return/enter, delete, spacebar, and shift keys
Navigate through grade-level software and Internet sites
Utilize appropriate basic computer vocabulary
Demonstrate proper care and usage of the computers
Use the Menu Bar and Drop-Down Menus

Create a simple document in KidPix or AppleWorks

Grade 1

COURSE BENCHMARKS

Demonstrate Kindergarten technology skills
Open laptop computer, turn the computer on and login using “their secret identity and code”
Use formatting skills: changing color, font, size, and color
Insert and change graphics; find and open programs using icons
Manipulate the delete and cap locks keys and form capital letters using the shift key
Use appropriate basic computer vocabulary: icon, computer, Internet, mouse
Access the Internet using the district homepage

Create a document in AppleWorks containing different size text and fonts.

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Grade 2

COURSE BENCHMARKS

Demonstrate Grade 1 technology skills

Use formatting skills: resize graphics, align and arrange text and graphics, and change font color

Print using the Apple Menu

Use appropriate computer vocabulary

Save, use a textbox, move and insert graphics

Use search tools and browsing concepts by going to sites and searching within these sites for information

Produce a simple finished document using word processing software

Cut and paste graphics and text

Spell check a simple finished document

Describe a simple object and explain how the parts work together

Create and print a story in a word processing program and incorporate digital tools.

Describe how technologies influence the student and community.

Create a digital survey.

Grade 3

COURSE BENCHMARKS

Demonstrate Grade Two technology skills

Create and present a simple electronic presentation

Create a simple chart and graph

Use appropriate basic computer vocabulary: slide layout, design template, reboot, and restart.

Paraphrase information from Internet research

Open and close windows, use the application menu (task switcher), and use the resize window option

Create a 5 slide multimedia presentation incorporating text, transitions and graphics.

Create and print a document with digital images and formatted text.

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Grade 4

COURSE BENCHMARKS

Demonstrate Grade Three technology skills

Create and print a document using word processing software

Produce and interpret a simple graph or chart by entering and editing data on a prepared spreadsheet template

Create and present an electronic presentation using appropriate software

Rephrase information obtained on the Internet

Recognize and practice social and ethical behaviors when using technology and information, and understand the consequences of inappropriate use. *Internet access *Software copyrights *Print and non-print copyrights *Library resources *Personal security and safety issues

Recognize the ethical implications of plagiarism of print, non-print and software copyrights

Describe common uses of computer applications and identify their advantages and disadvantages

Recognize the need for accessing, analyzing, and using information

Navigate web browsers, search engines, and directories to obtain information to solve real world problems

Recognize accuracy and/or bias of information

Solve problems individually and/or collaboratively using computer applications.

Create a flyer and/or multimedia presentation about topic taught/learned in a content area. Include text, graphics, transitions and animation.

Create and print a document about technological advances.

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Grade 5

COURSE BENCHMARKS

Demonstrate Grade Four technology skills

Create a multi-page document with citations using word processing software

Construct a simple spreadsheet, enter data, create graphs and interpret information

Use the thesaurus and dictionary tool

Choose appropriate tools and information resources to support research including on-line resources and databases

Solve problems individually and/or collaboratively using information technology

Create a multimedia project incorporating text, graphics, digital images, transitions, and animation

Create a flyer, newsletter, and multimedia project about advances in technology and how technology has changed one's life as well as the community and world

Grade 6

COURSE BENCHMARKS

Demonstrate Grade Five technology skills

Maintain and organize files and create folders and subfolders

Complete a multi-page document with citations using word processing software in conjunction with other tools that demonstrate the ability to format, edit, print, and perform back-up procedures

Evaluate web sites for accuracy, relevance, and appropriateness.

Use shortcut commands using the command key in combinations with other keys rather than using the drop down menus

Create charts using the Chart Wizard and use the function and formula options

Import another document, i.e. spreadsheet into a slideshow presentation

Create a multimedia presentation about how technology affects the community, society and/or the development of other technologies.

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<http://dltk-kids.com/>
<http://www.dogpile.com/>
<http://www.first-school.ws/>
<http://helpforkidspeech.org/>
<http://abchomepreschool.com/>
<http://everythingpreschool.com/>
<http://www.randomhouse.com/golden/>
<http://tlsbooks.com/preschoolworksheets.htm>
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<http://www.thewiggles.com.au/games/newgames/html/veges.htm>
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