

Washington Township School District  
**Pre-K – 6 Technology**  
**Scope & Sequence**

**Key:**  
 B = Beginning to explore concept/skill  
 D = In process of developing the concept/skill  
 M = Demonstrates concept/skill mastery  
**M = Mastery as indicated by the State of New Jersey**

~ 2009 Revisions ~

**I. Educational Technology**

<b>A. Technology Operations and Concepts</b>	<b>Pre-K Kindergarten</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Use the mouse to negotiate a simple menu on the screen (e.g., to print a picture)	<b>M</b>	M	M	M	M	M	M		
Use electronic devices (e.g., computer) to type name and to create stories with pictures and letters/words	<b>M</b>	M	M	M	M	M	M		
Identify the “power keys” (e.g., ENTER, spacebar) on a keyboard	<b>M</b>	M	M	M	M	M	M		
Recognize that the number keys are in a row on the top of the keyboard	<b>M</b>	M	M	M	M	M	M		
Use basic technology terms in conversations (e.g., digital camera, battery, screen, computer, Internet, mouse, keyboards, and printer)	<b>M</b>	M	M	M	M	M	M		
Turn smart toys on and off	<b>M</b>	M	M	M	M	M	M		
Identify the basic features of a computer and explain how to use them effectively	B	D	<b>M</b>	M	M	M	M		
Use technology terms in daily practice	B	D	<b>M</b>	M	M	M	M		
Discuss the common uses of computer applications and hardware and identify their advantages and disadvantages	B	D	<b>M</b>	M	M	M	M		
Create a document with text using a word processing program		B/D	<b>M</b>	M	M	M	M		
Demonstrate the ability to navigate in virtual environments that are developmentally appropriate		B/D	<b>M</b>	M	M	M	M		
Demonstrate effective input of text and data using an input device			B	D	<b>M</b>	M	M		

<b>Scope and Sequence (continued)</b>	<b>Pre-K Kindergarten</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Create a document with text formatting and graphics using a word processing program			B	D	<b>M</b>	M	M		
Create and present a multimedia presentation that includes graphics			B	D	<b>M</b>	M	M		
Create a simple spreadsheet, enter data, and interpret the information			B	D	<b>M</b>	M	M		
Determine the benefits of a wide range of digital tools by using them to solve problems			B	D	<b>M</b>	M	M		
Create professional documents (e.g., newsletter, personalized learning plan, business letter or flyer) using advanced features of a word processing program					B	D	M		<b>M</b>
Plan and create a simple database, define fields, input data, and produce a report using sort and query					B	B/D	D		<b>M</b>
Create a multimedia presentation including sound and images					B	D	M		<b>M</b>
Generate a spreadsheet to calculate, graph, and present information					B	D	M		<b>M</b>
Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems						B	B/D		<b>M</b>
<b>B. Creativity and Innovation</b>									
Use a digital camera to take a picture	<b>M</b>	M	M	M	M	M	M		
Illustrate and communicate original ideas and stories using digital tools and media-rich resources	B	D	<b>M</b>	M	M	M	M		
Produce a media-rich digital story about a significant local event or issue based on first-person interviews		B	B/D	D	<b>M</b>	M	M		
Synthesize and publish information about a local or global issue or event on a collaborative, web-based service (also known as a shared hosted service)						B	B/D		<b>M</b>

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
<b>C. Communication and Collaboration</b>									
Operate frequently used, high-quality, interactive games or activities in either screen or toy-based formats	<b>M</b>	M	M	M	M	M	M		
Access materials on a disk, cassette tape, or DVD. Insert a disk, cassette tape, CD-Rom, DVD, or other storage device and press “play” and “stop”	<b>M</b>	M	M	M	M	M	M		
Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using electronic tools	B	D	<b>M</b>	M	M	M	M		
Engage in online discussions with learners in the United States or from other countries to understand their perspectives on a global problem or issue			B	B/D	<b>M</b>	M	M		
Participate in an online learning community with learners from other countries to understand their perspectives on a global problem or issue, and propose possible solutions						B	D		<b>M</b>
<b>D. Digital Citizenship</b>									
Model legal and ethical behaviors when using both print and non-print information by citing resources	B	D	<b>M</b>	M	M	M	M		
Explain the need for each individual, as a member of the global community, to practice cyber safety, cyber security, and cyber ethics when using existing and emerging technologies	B	B	B/D	D	<b>M</b>	M	M		
Analyze the need for and use of copyrights			B	D	<b>M</b>	M	M		
Explain the purpose of an acceptable use policy and the consequences of inappropriate use of technology	B	B	B/D	D	<b>M</b>	M	M		
Model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics					B	B/D	D		<b>M</b>
Summarize the application of fair use and Creative Commons guidelines						B	D		<b>M</b>

<b>Scope and Sequence (continued)</b>	<b>Pre-K Kindergarten</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Demonstrate how information on a controversial issue may be biased						B	D		M
<b>E. Research and Information Literacy</b>									
Use the Internet to explore and investigate information with a teacher's support	M	M	M	M	M	M	M		
Use digital tools and online resources to explore a problem or issue affecting children, and discuss possible solutions.	B	D	M	M	M	M	M		
Investigate a problem or issue found in the United States and/or another country from multiple perspectives, evaluate findings, and present possible solutions, using digital tools and online resources for all steps		B	B/D	D	M	M	M		
Evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks			B	D	M	M	M		
Gather and analyze findings using data collection technology to produce a possible solution for a content-related or real-world problem						B	D		M
<b>F. Critical Thinking, Problem Solving, and Decision-Making</b>									
Navigate the basic functions of a browser, including how to open or close windows and use the "back" key	M	M	M	M	M	M	M		
Use mapping tools to plan and choose alternate routes to and from various locations	B	D	M	M	M	M	M		
Select and apply digital tools to collect, organize, and analyze data that support a scientific finding		B	B/D	D	M	M	M		
Use an electronic authoring tool in collaboration with learners from other countries to evaluate and summarize the perspectives of other cultures about a current event or contemporary figure							B		M

## II. Technology Education, Engineering, and Design

<b>A. Nature of Technology: Creativity and Innovation</b>	<b>Pre-K Kindergarten</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Describe how technology products, systems, and resources are useful at school, home, and work	<b>M</b>	M	M	M	M	M	M		
Investigate factors that influence the development and function of technology products and systems			B	D	<b>M</b>	M	M		
Using a digital format, compare and contrast how a technology product has changed over time due to economic, political, and/or cultural influences			B	D	<b>M</b>	M	M		
Explain the impact of globalization on the development of a technological system over time							B		<b>M</b>
<b>B. Design: Critical Thinking, Problem Solving, and Decision-Making</b>									
Brainstorm and devise a plan to repair a broken toy or tool using the design process	B	D	<b>M</b>	M	M	M	M		
Investigate the influence of a specific technology on the individual, family, community, and environment	B	D	<b>M</b>	M	M	M	M		
Develop a product using an online simulation that explores the design process			B	D	<b>M</b>	M	M		
Design an alternative use for an existing product			B	D	<b>M</b>	M	M		
Explain the positive and negative effect of products and systems on humans, other species, and the environment			B	D	<b>M</b>	M	M		
Compare and contrast how technology transfer happens within a technology, among technologies, and among other fields of study			B	D	<b>M</b>	M	M		
Design and create a product that addresses a real-world problem using the design process and working with specific criteria and constraints						B	B/D		<b>M</b>
Identify the design constraints and trade-offs involved in designing a prototype (i.e., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation.							B		<b>M</b>
Solve a science-based design challenge and build a prototype using science and math principles throughout the design process							B		<b>M</b>

Scope and Sequence (continued)	Pre-K Kindergarten	1	2	3	4	5	6	7	8
<b>C. Technological Citizenship, Ethics, and Society</b>									
Demonstrate how reusing a product affects the local and global environment	B	D	<b>M</b>	M	M	M	M		
Explain the impact of disposing of materials in a responsible way	B	B	B/D	D	<b>M</b>	M	M		
Explain the purpose of trademarks and the impact of trademark infringement on businesses			B	D	<b>M</b>	M	M		
Examine ethical considerations in the development and production of a product from its inception through production, marketing, use, maintenance, and eventual disposal by consumers			B	D	<b>M</b>	M	M		
Explain the need for patents and the process of registering one						B	B/D		<b>M</b>
Compare and contrast current and past incidences of ethical and unethical use of labor in the United States or another country and present results in a media-rich presentation						B	B/D		<b>M</b>
<b>D. Research and Information Fluency</b>									
Collect and post the results of a digital classroom survey about a problem or issue and use data to suggest solutions	B	B/D	<b>M</b>	M	M	M	M		
Analyze responses collected from owners/users of a particular product and suggest modifications in the design of the product based on their responses		B	B/D	D	<b>M</b>	M	M		
Evaluate the role of ethics and bias on trend analysis and prediction in the development of a product that impacts communities in the United States and/or other countries						B	B/D		<b>M</b>
<b>E. Communication and Collaboration</b>									
Communicate with students in the United States or other countries using digital tools to gather information about a specific topic and share results	B	D	<b>M</b>	M	M	M	M		

<b>Scope and Sequence (continued)</b>	<b>Pre-K Kindergarten</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
Work in collaboration with peers to produce and publish a report that explains how technology is or was successfully or unsuccessfully used to address a local or global problem		B	B/D	D	<b>M</b>	M	M		
Work in collaboration with peers and experts in the field to develop a product using the design process, data analysis, and trends, and maintain a digital log with annotated sketches to record the development cycle						B	B/D		<b>M</b>
<b>F. Resources for a Technological World</b>									
Identify the resources needed to create technological products and systems	B	D	<b>M</b>	M	M	M	M		
Describe how resources are used in a technological product or system		B	B/D	D	<b>M</b>	M	M		
Explain how resources are processed in order to produce technological products and systems			B	D	<b>M</b>	M	M		
Explain the impact of resource selection and processing in the development of a common technological product or system							B		<b>M</b>
Explain how the resources and processes used in the production of a current technological product can be modified to have a more positive impact on the environment (e.g., by using recycled metals, alternate energy sources) and the economy							B		<b>M</b>
<b>G. The Design World</b>									
Describe how the parts of a common toy or tool interact and work as part of a system	B	D	<b>M</b>	M	M	M	M		
Explain the importance of safety in the use and selection of appropriate tools and resources for a specific purpose	B	D	<b>M</b>	M	M	M	M		
Examine a malfunctioning tool and use a step-by-step process to troubleshoot and present options to repair the product			B	D	<b>M</b>	M	M		
Explain the functions of a system and subsystems			B	D	<b>M</b>	M	M		

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Evaluate the function, value, and esthetics of a technological product, system, or environment from the perspective of the user and the producer			B	D	<b>M</b>	M	M		
Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved						B	B/D		<b>M</b>
Explain the interdependence of a subsystem that operates as part of a system							B		<b>M</b>