MENDHAM TOWNSHIP ELEMENTARY SCHOOL

Technology Curriculum K-4

2014
Revised 2018

Introduction

Technology has transformed learning. For the students at Mendham Township Elementary School, this is a year to learn, explore and customize newly developed and purchased products and services. The MTES Technology Curriculum is designed not only to foster critical thinking communication and collaboration, but also will act as an avenue for our students to express creativity and innovation. New Jersey's newly adopted Technology Content Standards are designed to provide students the opportunity to acquire and apply content knowledge and skills through active exploration, interaction, and collaboration.

The goal of new technology standards is to integrate the use of technology across the curriculum. MTES shares this vision. Computer classes will no longer be a standalone special. The goal is to integrate core subject matter and projects into student's weekly computer classes. Grade level teams will work closely with the technology teacher to design and align technology activities and projects with core subject matter and standards.

Basic computer skills will be introduced in Kindergarten and Pre K. As students progress through their time at MTES those skills will continually be developed and individualized. These skills will be used to meet and exceed state and national academic standards, solve real world problems and synthesize and create new knowledge to help make informed decisions. In addition collaboration and communication with others, both local and global will challenge our students to experience different technologies, cultures and thinking.

Mendham Township Elementary School Technology Curriculum

Kindergarten Unit 1:

Content Area	**Technology**
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.
Strand	**A. Technology Operations and Concepts**

Essential Questions	Skills	NJSLS	Assessment	Resources
What Knowledge of operations and related applications is a student required to have in order to begin the appropriate use of digital tools.	Use basic Computer vocabulary in daily practice. Identifying the major Parts of a computer. Use input and output devices appropriately. begin using the home row Keyboarding skills. Accessing Different programs and features using a mouse and keyboard. Turning Computers on and off. Accessing Printers to print documents. Use Graphic organizing software to plan a story. Introduce Microsoft Word	8.1.P.A.1 8.1.P.A.2 8.1.P.A.3 8.1.P.A.4 8.1.P.A.5 8.1.P.A.6 8.1.P.A.7	Anecdotal records, teacher observation Daily objective checklist Labeling Worksheets Teacher Observation Informal Q &A Typing progress reports Student Portfolios to track yearly progress from grade to grade.	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. Free interactive websites. Paid online subscriptions Google Accounts Type to Learn 4

Kindergarten Unit 2:

Content Area	**Technology**
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. **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.
Strand	**8.1.B. Technology Operations and Concepts** **8.1.C. Communication and Collaboration** **8.2.A. Nature of Technology: Creativity and Innovation** **8.2.B. Design: Critical Thinking, Problem Solving, and Decision-Making**

Essential Questions	**Skills**	**NJSLS**	**Assessment**	**Resources**
How does the use of digital tools and media-rich resources enhance creativity and the construction of knowledge? In what ways do Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems? In what ways do technology products and systems impact every aspect of the world in which we live?	Use a digital camera to take a picture. Illustrate and communicate original ideas and stories using digital tools and media-rich resources. Use a graphic organizer to plan a story. Use appropriate software to create an original story. Use Microsoft Word to type a short original story. Using age appropriate software and hardware to integrate technology into students daily learning experiences. -Operate frequently used, high-quality, interactive games or activities in either screen or toy-based formats.	8.1.P.B.1 8.1.P.C.1 8.1.P.C.2 8.2.2.A.1 8.2.2.B.1 8.2.2.B.2	Anecdotal records, teacher observation. Daily objective checklist Completed graphic organizers Completed and printed Word documents Core subject area subject integration assignments Scoring rubrics	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. free interactive websites. paid online subscriptions Google Accounts Type to Learn 4

Content Area	**Technology**
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. **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.
Strand	**8.1.D. Design: Critical Thinking, Problem Solving, and Decision-Making** **8.1.E. Research and Information Literacy** **8.1.F. Critical Thinking, Problem Solving, and Decision Making**

Essential Questions	**Skills**	**NJSLS**	**Assessment**	**Resources**
In what ways do Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors? How can a student use digital tools to assists in gathering and managing information? How can using digital tools assist in generating solutions and making decisions?	Model legal and ethical behaviors when using both print and non-print information by citing resources. Use the Internet to explore and investigate information with a teacher's support. Navigate the basic functions of a browser, including how to open or close windows and use the "back" key.	8.1.2.D.1 8.1.P.E.1 8.1.P.F.1	Anecdotal records, teacher observation. Daily objective checklist Age appropriate web quests	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. Free interactive websites. Online subscriptions Google Accounts Type to Learn 4

Mendham Township Elementary School Technology Curriculum
First Grade Unit 1

Content Area	**Technology**
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.
Strand	**8.1. A. Technology Operations and Concepts** **B. Creativity and Innovation**

Essential Questions	**Skills**	**NJSLS**	**Assessment**	**Resources**
What Knowledge of operations and related applications is a student required to have in order to begin the appropriate use of digital tools. How does the use of digital tools and media-rich resources enhance creativity and the construction of knowledge?	Use technology terms in daily practice. Create a document with text, pictures and other age appropriate formatting options using a word processing program Demonstrate the ability to navigate in virtual environments that are developmentally appropriate. Illustrate and communicate original ideas and stories using digital tools and media-rich resources. Practice Touch Typing	8.1.2.A.2 8.1.2.A.3 8.1.2.A.4 8.1.2.A.5 8.1.2.B.1	Anecdotal records, teacher observation. Daily objective checklist completed graphic organizers completed and printed Word documents core subject area assignments integrated into computer classes scoring rubrics	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. free interactive websites. paid online subscriptions Type To Learn 4 Google Accounts Google Apps for education

Content Area	**Technology**
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.
Strand	**8.1.C. Communication and Collaboration** **8.1.D. Digital Citizenship** **8.1.E. Research and Information**

Essential Questions	**Skills**	**NJSLS**	**Assessment**	**Resources**
In what ways do Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems? In what ways do Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors? What are effective uses of digital tools that will assist in gathering and managing information? In what ways do technology products and systems impact every aspect of the world in which we live?	Use technology Terms in Daily practice. Access materials on external and internal storage devises. ie. CD's, flash Drive, hard drives. Create a document with text, pictures and other age appropriate formatting options using a word processing program. Saving information in appropriate areas. Engage in a variety of developmentally appropriate learning activities with students In other classes, schools, or countries using electronic tools. Model legal and ethical behaviors when using both print and non-print information by citing resources. Use Digital tools and online resources to explore a problem or issue affecting children, and discuss possible solutions.	8.1.P.C.2 8.1.2.C.1 8.1.2.D.1 8.1.2.E.1	Anecdotal records, teacher observation. Daily objective checklist core subject area assignments integrated into computer classes Internet etiquette checklist.	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. free interactive websites. paid online subscriptions Google Accounts Type to Learn 4 Age appropriate video Conferences with other children or professionals.

First Grade Unit 3

Content Area	**Technology**
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. **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.
Strand	**8.1.F. Critical Thinking, Problem Solving, and Decision Making** **8.2.A. Nature of Technology: Creativity and Innovation** **8.2.B. Design: Critical Thinking, Problem Solving, and Decision Making**

Essential Questions	**Skills**	**NJSLS**	**Assessment**	**Resources**
How can students access information using digital tools to assist in generating solutions and making decisions? How do the use of Technology products and systems impact every aspect of the world in which we live? How does the design process help students solve problems.	Navigate the basic features of a browser independently Be able to type 4 words per minute. Begin to be able to describe how technology products, systems, and resources are useful at school. Brainstorm and devise a plan to repair a broken toy or tool using the design process.	8.1.P.F.1 8.2.2.A.1 8.2.2.B.1	Anecdotal records, teacher observation. Daily objective checklist core subject area assignments integrated into computer classes Internet etiquette checklist. Teacher generated problem solving web quest.	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. free interactive websites. paid online subscriptions Age appropriate video Conferences with other children or professionals. Google Accounts Google Apps for education Type to learn 4

Mendham Township Elementary School Technology Curriculum
Second Grade Unit 1:

Content Area	**Technology**
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. **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.
Strand	**8.1.A. Technology Operations and Concepts** **8.1.B. Creativity and Innovation** **8.1.D. Digital Citizenship** **8.2.A. Nature of Technology: Creativity and Innovation** **8.2.B. Design: Critical Thinking, Problem Solving, and Decision-Making** **8.2.C. Technological Citizenship, Ethics, and Society**

Essential Questions	**Skills**	**NJSLS**	**Assessment**	**Resources**

What Knowledge of operations and related applications is a student required to have in order to begin the appropriate use of digital tools? How can using digital tools and media-rich resources enhance creativity and the construction of knowledge? What societal concerns regarding the practice of safe, legal and ethical behaviors to technological advancements create? How can using digital tools effectively assist a student in gathering and managing information? How do technology products and systems impact every aspect of the world in which we live? What is the design process and how can it be used to systematically solve a problem? When designing technology systems	Use basic Computer vocabulary in daily practice. Be able to type 4 words per minute. Demonstrate the ability to navigate in virtual environments that are developmentally appropriate. Create a document with text formatting and graphics using a word processing program. Determine the benefits of a wide range of digital tools by using them to solve problems. Illustrate and communicate original ideas and stories using digital tools and media- rich resources. Explain the need for each individual, as a member of the global community, to practice cyber safety, cyber security, and cyber ethics using existing and emerging technologies. Use digital tools and online resources to explore a problem or issue affecting children, and possible solutions. Describe how technology products, systems, and resources are useful at school, home and work	8.1.P.F.1 8.2.2.A.1 8.2.2.B.1	Anecdotal records, teacher observation. Daily objective checklist core subject area assignments integrated into computer classes Internet etiquette checklist. Teacher generated problem solving web quest.	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. free interactive websites. paid online subscriptions Age appropriate video Conferences with other children or professionals. Google Accounts Type to Learn 4

Second Grade Unit 2

Content Area	**Technology**
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. **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.
Strand	**8.1.A. Technology Operations and Concepts** **8.1.D. Digital Citizenship** **8.1.E. Research and Information Literacy** **8.1.F. Critical Thinking, Problem Solving, and Decision Making** **8.2.B. Design: Critical Thinking, Problem Solving, and Decision Making** **8.2.D. Research and Information Fluency** **8.2.E. Communication and Collaboration**

Essential Questions	**Skills**	**NJSLS**	**Assessment**	**Resources**
What Knowledge of operations and related applications is a student required to have in order to begin the appropriate use of digital tools? What societal concerns regarding the practice of safe, legal and ethical behaviors to technological advancements create? How can a student access information through the use of digital tools that will assist them in generating solutions and making decisions? How does information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology systems? In what ways do digital tools facilitate local and global communication and collaboration in designing products and systems?	Be able to type 6-8 words per minute. Create and present a simple spreadsheet, enter data, and interpret the information. Analyze the need for and use of copyrights Use mapping tools to plan and choose alternate routes to and from various locations. Collect ant post the results of a digital classroom survey about a problem or issue and use data to suggest solutions. Communicate with students in the United States or other countries using digital tools to gather information about a specific topic and share results.	8.1.P.F.1 8.2.2.A.1 8.2.2.B.1 8.1.2.E.1 8.1.2.F.1 8.2.4.C.1 8.2.2.D.1 8.2.2.E.1	Anecdotal records, teacher observation. Daily objective checklist core subject area assignments integrated into computer classes Internet etiquette checklist. Teacher generated problem solving web quest.	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. free interactive websites. paid online subscriptions Chromebooks Google Accounts Google Apps for Education Type to Learn 4 Age appropriate video Conferences with other children or professionals.

Mendham Township Elementary School Technology Curriculum
Third Grade Unit 1

Content Area	**Technology**
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. **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.
Strand	**8.1.A. Technology Operations and Concepts** **8.1.B. Creativity and Innovation** **8.1.C. Communication and Collaboration** **8.1.D. Digital Citizenship** **8.1.E. Research and Information** **8.2.A. Nature of Technology: Creativity and Innovation** **8.2.B. Design: Critical Thinking, Problem Solving, and Decision-Making** **8.2.C. Technological Citizenship, Ethics, and Society** **8.2.D. Research and Information Fluency** **8.2.E. Communication and Collaboration** **8.2.F. Resources for a Technological World** **8.2.G.The Designed World**

Essential Questions	**Skills**	**NJSLS**	**Assessment**	**Resources**
What Knowledge of operations and related applications is a student required to have in order to begin the appropriate use of digital tools? What societal concerns regarding the practice of safe, legal and ethical behaviors to technological advancements create? How can a student access information through the use of digital tools that will assist them in generating solutions and making decisions? In what ways do digital tools facilitate local and global communication and collaboration in designing products and systems?	Be able to type 6-8 words per minute. Create and present a simple spreadsheet, enter data, and interpret the information. Analyze the need for and use of copyrights Use mapping tools to plan and choose alternate routes to and from various locations.	8.1.P.F.1 8.2.2.A.1 8.2.2.B.1 8.1.2.E.1 8.1.2.F.1 8.2.4.C.1 8.2.2.D.1 8.2.2.E.1	Anecdotal records, teacher observation. Daily objective checklist core subject area assignments integrated into computer classes Internet etiquette checklist. Teacher generated problem solving web quest.	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. free interactive websites. paid online subscription Chromebooks Type to Learn 4 Google Accounts Google Apps For education Age appropriate video Conferences with other children or professionals.

Content Area	**Technology**
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. **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.
Strand	**8.1.A. Technology Operations and Concepts** **8.1.E. Research and Information** **8.1.F. Critical Thinking, Problem Solving, and Decision-Making** **8.2.A. Nature of Technology: Creativity and Innovation** **8.2.B. Design: Critical Thinking, Problem Solving, and Decision-Making** **8.2.D. Research and Information Fluency**

Essential Questions	**Skills**	**NJSLS**	**Assessment**	**Resources**

operations and related applications is a student required to have in order to begin the appropriate use of digital tools? How can using digital tools and media-rich resources enhance creativity and the construction of knowledge? What societal concerns regarding the practice of safe, legal and ethical behaviors to technological advancements create? How can using digital tools effectively assist a student in gathering and managing information? How do technology products and systems impact every aspect of the world in which we live.	vocabulary in daily practice. Be able to type 8-10 words per minute. Create a document with text formatting and graphics using a word processing program to be used to construct a multimedia presentation. Illustrate and communicate original ideas and stories using digital tools and media- rich resources. Explain the need for each individual, as a member of the global community, to practice cyber safety, cyber security, and cyber ethics using existing and emerging technologies. Explain the purpose of an acceptable use policy and the consequences of inappropriate use of technology. Model Appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics.	8.1.P.F.1 8.2.2.A.1 8.2.2.B.1 8.1.2.E.1 8.1.2.F.1 8.2.4.C.1 8.2.2.D.1 8.2.2.E.1	records, teacher observation. Daily objective checklist core subject area assignments integrated into computer classes Internet etiquette checklist. Teacher generated problem solving web quest.	connections. Teacher Made Worksheets Various age appropriate software. free interactive websites. paid online subscription Chromebooks Type to Learn 4 Google Accounts Google Apps For education Age appropriate video Conferences with other children or professionals.

Content Area	**Technology**
Standard	**8.3 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. **8.4 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.
Strand	**8.1.A. Technology Operations and Concepts** **8.1.G. Research and Information** **8.1.H. Critical Thinking, Problem Solving, and Decision-Making** **8.2.C. Nature of Technology: Creativity and Innovation** **8.2.D. Design: Critical Thinking, Problem Solving, and Decision-Making** **8.2.D. Research and Information Fluency**

Essential Questions	Skills	NJSLS	Assessment	Resources
What Knowledge of operations and related applications is a student required to have in order to begin the appropriate use of digital tools? How can using digital tools effectively assist a student in gathering and managing information? How can information accessed through the use of digital tools assist students in generating solutions and making decisions? In what ways does technology products and systems impact every aspect of the world in which we live? How can a students use the design process to systematically solve a problem? In what ways does information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology systems?	Use basic Computer vocabulary in daily practice. Be able to type 10-14 words per minute. Determine the benefits of a wide range of digital tools by using them to solve problems. Evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks. Select and apply digital tools to collect , organize, and analyze data that support a scientific finding. Investigate factors that influence the development and function of technology products and systems. Design an alternative use for an existing product. Explain the positive and negative effects of products and systems on humans, other species, and the environment. Analyze responses collected from owners/users of a particular product and suggest modifications in the design of the product based on their responses.	8.1.4.A.5 8.1.4.E.1 8.1.4.F.1 8.2.4.A.2 8.2.4.B.2 8.2.4.B.3 8.2.4.D.1	Anecdotal records, teacher observation Daily objective checklist Teacher Observation Informal Q &A Typing progress reports Student Portfolios to track yearly progress from grade to grade.	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. Free interactive websites. Paid online Subscriptions Google Acocunts Apps for education Type to Learn 4

Mendham Township Elementary School Technology Curriculum
Fourth Grade Unit 1

Essential Questions	Skills	NJSLS	Assessment	Resources
What Knowledge of technology and digital tools is required in order to appropriately and effectively use operations and related applications in order to solve problems?	Be able to type 14-20 words per minute using the correct keyboarding skills. Determine the benefits of a wide range of digital tools by using them to solve problems.	8.1.4.A.5 8.1.4.B.1 8.1.4.C.1 8.1.8.D.2 8.1.4.E.2 8.2.4.A.2 8.2.4.B.4	Anecdotal records, teacher observation. Daily objective checklist Scoring Rubrics Typing Tests	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. Free interactive websites. Online subscriptions Google Accounts Google Apps for education Chromebooks
How can using digital tools and media-rich resources enhance creativity and the construction of knowledge?	Produce a media-rich digital story about significant local events issues or history based on first person interviews.			
How can students use digital tools to assist them in gathering and managing information?	Evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.			
What societal concerns regarding the practice of safe, legal, and ethical behaviors do technological advancements create?	Model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics.			
How can using digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.	Engage in online discussions with learners in the United States or from other countries to understand their perspectives on global problems or issues.			

Fourth Grade Unit 2

Content Area	**Technology**
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. **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.
Strand	**8.1.A.Technology Operations and Concepts** **8.1.B. Creativity and Innovation** **8.1.C. Communication and Collaboration** **8.1.D. Design: Critical Thinking, Problem Solving, and Decision-Making** **8.1.E. Research and Information Literacy** **8.2.A. Nature of Technology: Creativity and Innovation**

Essential Question	**Skills**	**NJSLS**	**Assessment**	**Resources**
In what ways can digital tools facilitate local and global communication and collaboration when designing products and systems? How can students use the design process to provide a means to convert resources into products and systems? In what ways can digital tools facilitate local and global communication and collaboration when designing products and systems? How can students use the design process to provide a means to convert resources into products and systems?	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. Explain the functions of system and subsystems. Evaluate the function, value, and esthetics of a technological product, system, or environment from the perspective of the user and the producer. 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. Explain the functions of system and subsystems. Evaluate the function, value, and esthetics of a technological product, system, or environment from the perspective of the user and the producer.	8.1.4.A.5 8.1.4.B.1 8.1.4.C.1 8.1.8.D.2 8.1.4.E.2 8.2.4.A.2 8.2.4.B.4	Anecdotal records, teacher observation. Daily objective checklist Scoring Rubrics Typing Tests	Computers with internet connections. Teacher Made Worksheets Various age appropriate software. Free interactive websites. Online subscriptions Google Accounts Google Apps for education Chromebooks Type to Learn 4 Robotic kits Virtual construction