

SHORE REGIONAL HIGH SCHOOL DISTRICT

A Regional Collaborative of the Communities Served by the Monmouth Beach, Oceanport, Shore Regional, and West Long Branch School Districts

Aligned to Common Core State Standards/New Jersey Core Curriculum Content Standards as Applicable

Course Title: Grade 1 Technology

Content Area: Technology

Grade Level(s): First

Course Description: Technology enables students to solve real world problems, enhance life, and extend human capability as they meet the challenges of a dynamic global society in the 21st century.

Curriculum Writer(s): Kara Sheridan

Date Created: July 2015

Date Approved by Board of Education: October of 2015

Pacing Guide

Unit 1: Introduction/Orientation to Technology

Unit 2: Application of Digital Tools and the Internet

Unit 3: Communication and Collaboration and the Design Process

Unit 4: Technology Systems and Design

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Unit 1: Introduction/Orientation to Technology

Unit Summary: Students will get an overview of technology equipment and terminology. They will review the basics of how to use a computer, and they will be introduced to digital citizenship.

Interdisciplinary Connections/Content Area Integrations Including Technology: Utilizing interdisciplinary activities that emphasize the use of technology skills to become lifelong learners.

- English Language Arts
- Mathematics
- Communications Skills
- 21st Century Life and Career Skills
- Problem Solving and Critical Thinking
- Science
- Social Studies

CCSS/NJCCCS Number	CCSS/NJCCCS Content
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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 collaborate and to create and communicate knowledge.	
A. Technology Operations and Concepts: <i>Students demonstrate a sound understanding of technology concepts, systems, and operations.</i>	
8.1.2.A.1	Identify the basic features of a digital device and explain its purpose.
8.1.2.A.2	Create a document using a word processing application.
8.1.2.A.3	Compare the common uses of at least two different digital applications and identify the advantages and disadvantages of using each.
8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e. games, museums).
8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.	
D. Digital Citizenship: <i>Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</i>	
8.1.2.D.1	Develop an understanding of ownership of print and non-print information.

Summative Assessments:

- Teacher observations
- Student practice/activities
- Presentations
- Projects



Formative Assessments:

- Exit Ticket

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- **Thumbs Up/dDown**
- **Class Discussion**
- **Graphic Organizers**
- **Teacher Observation**
- **Self-Assessment**
- **Active Listening (Think-Pair-Share, Choral Response)**



Enduring Understandings:

- **Technology is constantly changing and requires continuous learning of new skills.**
- **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 a positive or negative impact on both users and those affected by their use.**



Essential Questions:

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

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- **What constitutes misuse, and how can it best be prevented?**



Instructional Outcomes:

- **Students will be able to understand and use technology systems.**
- **Students will know the location of keys on the keyboard and utilize special function keys.**
- **Students will know how to open, save, and print files.**
- **Students will be able to create a document using a word processing program.**
- **Students will be able to select and use applications effectively and productively.**
- **Students will be able to advocate and practice safe, legal, and responsible use of information and technology.**



Suggested Learning Activities: May include but are not limited to the following activities:

- Demonstrate and practice how to turn on the computer or device, log on, turn off, highlight, drag/drop, and use of mouse and/or touch pad.
- Give students the opportunity to explore the computer by opening and closing various programs. Have them type a few words or sentences in a program.
- Provide a list of vocabulary words to the students. Allow them to choose 3-5 words and create an electronic mini-dictionary, including words and/or pictures.
- Introduce different applications such as Google Docs, Word, Excel, Power Point, a web browser, etc. Have a class discussion about the different uses of the programs. Talk about advantages and disadvantages of each. Play four corners with the students by reading or posting a task and asking them to move to a different part of the room depending on which program they would use.

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- Have students create a Word document (or use similar software if necessary). Show them how to use the keyboard to input characters. Have them type a sentence about school. Demonstrate how to insert clip art as well. Have them insert a picture of a school and one other picture that reminds them of school.
- Have students open a web browser. Show them how to type in a web address and how to navigate back and forward. Have them visit www.abcya.com and choose one number game and one letter game to play. If time allows, the teacher can show them how to search for sites using Google.
- Have students type a sentence about their favorite TV show. Require that they include a quote from a friend. They can easily cite the quote by including the person's name in their writing.
- Review the Acceptable Use Policy and discuss appropriate behavior when using technology.

Other useful resources:

- Keyboarding: http://www.growing.course.com/level_1
- Any age appropriate keyboarding program; i.e. Kid Keys, 2.0.
- Any age appropriate word processing program; MS Word, Max Write, Google Docs.
- <http://kids.nationalgeographic.com/kids/animals/>
- National Geographic Animal Images <http://animals.nationalgeographic.com/animals/>
- Animal Websites for Elementary Research
- <http://www.brainpopjr.com/artsandtechnology/technology/internetsafety/>



Suggested Differentiation:

Provide differentiated instruction through any and all of the following strategies:

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- Visual and verbal instructions
- Choice activities
- Chunking information
- Video and written tutorials



Curriculum Development Resources:

- New Jersey Standards: <http://www.state.nj.us/education/cccs/2014/tech/>
- Roselle Schools Technology Curriculum Grades K-2
- Marlboro Township Schools Technology Curriculum Grade 1
- Garfield Technology Curriculum Grade K-12



Notes/Comments:

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Unit 2 Application of Digital Tools and the Internet

Unit Summary: In this unit, students will learn about different digital tools and use them to create original work pieces. They will also get an introduction to coding.

Interdisciplinary Connections/Content Area Integrations Including Technology:

- Problem Solving and Critical Thinking
- Communication
- Writing
- 21st Century Life and Career Skills
- Mathematics

CCSS/NJCCCS Number	CCSS/NJCCCS Content
	8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. B. Creativity and Innovation: <i>Students demonstrate creative thinking, construct knowledge, and develop innovative products and process using technology.</i>
8.1.2.B.1	Illustrate and communicate original ideas and stories using multiple digital tools and resources.

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E: Research and Information Fluency: <i>Students apply digital tools to gather, evaluate, and use information.</i>	
8.1.2.E.1	Use digital tools and online resources to explore a problem or issue.
8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking, and the designed world as they relate to the individual, global society, and the environment. E. Computational Thinking: Programming: <i>Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.</i>	
8.2.2.E.2	Demonstrate an understanding of how a computer takes input through a series of written commands and then interprets and displays information as output.
8.2.2.E.3	Create algorithms (a set of instructions) using a pre-defined set of commands (e.g., to move a student or character through a maze).

Summative Assessments:

- Teacher observations
- Student practice/activities
- Presentations
- Projects



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Formative Assessments:

- Exit Ticket
- Thumbs Up/Down
- Class Discussion
- Graphic Organizers
- Teacher Observation
- Self-Assessment
- Active Listening (Think-Pair-Share, Choral Response)



Enduring Understandings:

- Digital tools provide enhanced opportunities to design innovative solutions and express ideas creatively.
- Information is spread worldwide within seconds due to technological advancements and has an immediate impact.
- Computers use coding to take the information given and display the result.
- The goal of coding is to solve problems.



Essential Questions:

- How can digital tools be used for creating original and innovative works, ideas, and solutions?
- Why is the evaluation and appropriate use of accurate information more important than ever in the technological age?

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- How does a computer process the information you give it?
- What is the goal of coding?



Instructional Outcomes:

- Students will apply existing knowledge to generate new ideas, products, or processes.
- Students will create original works as a means of personal or group expression.
- Students will illustrate and communicate original ideas and stories using digital tools and media-rich sources.
- **Students will use digital tools and online resources to explore a problem or issue affecting children and discuss possible solutions.**
- **Students will plan strategies to guide inquiry.**
- **Students will locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.**
- **Students will evaluate and select information sources and digital tools based on the appropriateness for specific tasks.**
- **Students will be able to understand computational thinking and computer programming as tools used in design and engineering.**



Suggested Learning Activities: May include but are not limited to the following activities:

- Create a story using storybook creator: <http://www.carnegielibrary.org/kids/storymaker/embed.cfm>, MaxShow, KidPix, or Pixie
- Take a popular 1st grade story such as “If You Take a Mouse to School” and have the students work in groups to extend the story, create a new ending for the story, or create another story with the same characters. Have them create a presentation that includes recording of their

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voices, picture, and print. Prior to starting this activity, the teacher will need to show the students the different software available to help them create their presentations.

- Use a drawing/story app such as “Paper” to create and produce stories on ipads.
- Use websites such as <http://kids.nationalgeographic.com/kids/stories/>, Time for Kids <http://www.timeforkids.com/>, Scholastic News, for Grade 1 <http://sni.scholastic.com/SN1> to research or explore a problem that affects children and discuss possible solutions.
- View the website <http://www.crunchzilla.com/code-monster> whole class to introduce coding and get kids excited.
- Explore different coding websites, such as www.code.org or <http://codecombat.com/play>.

Other useful resources:

- <http://codeforkids.ca/>
- <http://ww2.kqed.org/mindshift/2011/05/16/5-tools-to-introduce-programming-to-kids/>
- <https://www.tynker.com/hour-of-code/>
- <https://www.khanacademy.org/hourofcode>



Suggested Differentiation: Provide differentiated instruction through any and all of the following strategies:

- Visual and verbal instructions
- Choice activities
- Chunking information
- Video and written tutorials



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Curriculum Development Resources:

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- <https://thimble.webmaker.org/p/lg7b/>
- Roselle Schools Technology Curriculum Grades K-2
- Marlboro Township Schools Technology Curriculum Grade 1
- Garfield Technology Curriculum Grade K-12



Notes/Comments:

Unit 3 Communication and Collaboration and the Design Process

Unit Summary: In this unit, the students will further investigate digital media and how it can be used to communicate all around the world. They will follow a series of steps to come up with a solution to a problem.

Interdisciplinary Connections/Content Area Integrations Including Technology:

- Science
- Social Studies
- Maps

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- Mathematics
- Communication
- Critical Thinking
- Problem Solving
- 21st Century Life and Career Skills
- Writing

CCSS/NJCCCS Number	CCSS/NJCCCS Content
<p>8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.</p> <p>C. Communication and Collaboration: <i>Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.</i></p>	
8.1.2.C.1	Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.
<p>F: Critical thinking, problem solving, and decision making: <i>Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</i></p>	
8.1.2.F.1	Use geographic mapping tools to plan and solve problems.
<p>8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming:</p>	

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All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking, and the designed world as they relate to the individual, global society, and the environment.

A. The Nature of Technology: Creativity and Innovation *Technology systems impact every aspect of the world in which we live.*

8.2.2.A.2	Describe how designed products and systems are useful at school, home, and work.
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C. Design: The design process is a systematic approach to solving problems.

8.2.2.C.1	Brainstorm ideas on how to solve a problem or build a product.
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8.2.2.C.2	Create a drawing of a product or device that communicates its function to peers and discuss.
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8.2.2.C.3	Explain why we need to make new products.
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8.2.2.C.4	Identify designed products and brainstorm how to improve one used in the classroom.
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Summative Assessments:

- Teacher observations
- Student practice/activities
- Presentations
- Projects



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Formative Assessments:

- Exit Ticket
- Thumbs Up/Down
- Class Discussion
- Graphic Organizers
- Teacher Observation
- Self-Assessment
- Active Listening (Think-Pair-Share, Choral Response)



Enduring Understandings:

- Digital tools allow for communication and collaboration anytime/anyplace worldwide.
- Selection of technology should be based on personal and/or career needs assessment.
- Technology is only as good as the person using it.
- By using technology effectively, we can live, learn, and work more effectively.



Essential Questions:

- How has the use of digital tools improved opportunities for communication and collaboration?
- How do I choose which technological tools to use and when it is appropriate to use them?
- How can I transfer what I know to new technological situations/experiences?

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- How can I use technology to solve problems?
- How can I use technology to be productive?



Instructional Outcomes:

- Students will identify the digital tools available to communicate with others.
- Students will engage in learning activities with students in other classes within their school and within other schools in the United States using electronic tools.
- Students will develop cultural understanding and global awareness by engaging with learners of other cultures.
- Students will contribute to project teams to produce original works or solve problems.
- Students will identify and define authentic problems and significant questions for investigation.
- Students will plan and manage activities to develop a solution or complete a project.
- Students will be able to understand the characteristics and scope of technology.



Suggested Learning Activities: May include but are not limited to the following activities:

- Introduce students to online communication tools and assign or have students find an e-mail buddy. Have the students research ways that the school is saving energy. Have them ask their e-mail buddy the different ways their school is saving energy and create a Venn diagram to show the similarities and differences between the two schools.
- Have students use a blog, wiki, Facetime, or Skype to share activities or pictures with others.

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- Create and interpret graphs, use descriptive text, develop mapping skills, and collaborate internationally using the Internet while tallying lost teeth. Information about collaborative, global site, “The Tooth Tally Project”, can be found at: <http://toothtally.com/>.
- Students will take a virtual tour of a zoo and/or an aquarium. Students will navigate the site using drop down menus and the back button including visiting live webcams. Students will complete a teacher prepared scavenger hunt.
- Use an online map to plot the location of a favorite restaurant and the distance to the student’s home school. Use an online mapping tool to calculate the distance and determine if alternate routes are available. They can choose the best route.
- While working in pairs or small groups, students will identify technology devices around us-computer, bells, fire alarm, pencil sharpener. Describe basically how or what makes them work. Students will produce a short video clip demonstrating how something works using <https://animoto.com/>.
- Have students working in small groups to choose an engineering project. Project ideas can be generated whole class based on a problem, i.e. catch a gingerbread man, leprechaun, design a vehicle with a special purpose, etc. Students can use Kid Pix or other drawing programs to draw their invention. Discuss ways to improve on the design and make those changes.
- Students can experiment and play engineering games, such as “How We See” and “Forces in Action” at <http://www.sciencekids.co.nz/gamesactivities.html>. They can discuss what they needed to do to be successful.

Other useful resources:

- Video Conferencing <http://mashable.com/2010/04/21/classroom-video-conferencing/>
- Zoo Scavenger Hunt Ideas http://www.educationworld.com/a_lesson/lesson068.shtml
- Mapping Tools <http://www.nationalgeographic.com/kids-world-atlas/maps.html>, Google maps app
- Engineering projects and games <http://pbskids.org/zoom/printables/activities/> , http://www.abcya.com/create_and_build_car.htm



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Suggested Differentiation: Provide differentiated instruction through any and all of the following strategies:

- Visual and verbal instructions
- Choice activities
- Chunking information
- Video and written tutorials



Curriculum Development Resources:

- New Jersey Standards: <http://www.state.nj.us/education/cccs/2014/tech/>
- Roselle Schools Technology Curriculum Grades K-2
- Marlboro Township Schools Technology Curriculum Grade 1
- Garfield Technology Curriculum Grade K-12



Notes/Comments:

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Unit 4 Technology Systems and Design

Unit Summary: In this unit, students will explore how technology impacts life and the environments we live in. They will also investigate how a product is designed to meet a certain goal.

Interdisciplinary Connections/Content Area Integrations Including Technology:

- Science
- Social Studies
- Problem Solving
- Critical Thinking
- Writing
- 21st Century Life and Career Skills

CCSS/NJCCCS Number	CCSS/NJCCCS Content
	8.2 Technology Education, Engineering, Design, and Computational Thinking - Programming: All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking, and the designed world as they relate to the individual, global society, and the environment. B. Technology and Society: <i>Knowledge and understanding of human, cultural, and society values are fundamental when designing technology systems and products in the global society.</i>
8.2.2.B.1	Identify how technology impacts or improves life.

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8.2.2.B.2	Demonstrate how reusing a product affects the local and global environment.
D. Abilities for a Technological World: <i>The designed world is the product of a design process that provides the means to convert resources into products and systems.</i>	
8.2.2.D.1	Collaborate and apply a design process to solve a simple problem from everyday experiences.
8.2.2.D.2	Discover how a product works by taking it apart, sketching how parts fit, and putting it back together.

Summative Assessments:

- Teacher observations
- Student practice/activities
- Presentations
- Projects



Formative Assessments:

- Exit Ticket
- Thumbs Up/Down
- Class Discussion
- Graphic Organizers
- Teacher Observation

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- **Self-Assessment**
- **Active Listening (Think-Pair-Share, Choral Response)**



Enduring Understandings:

- **I need to be a responsible user.**
- **Being literate with regard to media literacy gives me useful skills in digital citizenship, critical thinking, and decision making.**
- **Tools have many purposes because they have so much to offer.**
- **A system has related pieces that work together to achieve a goal.**



Essential Questions:

- **How can I be a responsible (ethical) user of various forms of media?**
- **Why is digital citizenship a crucial element of media literacy?**
- **How do I choose which technological tools, and when is it appropriate to use them?**
- **Can a system continue to operate with a missing or malfunctioning component?**



Instructional Outcomes:

- **Students will understand the cultural, social, economic, and political effects of technology.**
- **Students will understand the effects of technology on the environment.**

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- Students will apply the design process.
- Students will use and maintain technological products and systems.



Suggested Learning Activities: May include but are not limited to the following activities:

- The class will brainstorm products that are recycled in their homes (water bottles, shopping bags, etc.). Teacher will discuss the process of recycling and how new products are made or view “Reading Rainbow: How Trash is Recycled”
<https://www.youtube.com/watch?v=w1l8HXa3HLk>. Play online recycling games and visit sites about recycling including
<http://kids.nationalgeographic.com/kids/games/actiongames/recycle-roundup/>, <http://www.recycleguys.org/games.html>,
<http://climatekids.nasa.gov/recycle-this/>
- Students will brainstorm different items they recycle (such as newspapers, plastics, aluminum, and glass). Students will be asked how these items can be reused. Students can draw a chart of the items they recycle in Kid Pix or other drawing program. They can draw pictures comparing how the environment looks with and without recycling.
- Students will complete a project: Guess the Tool. Students will draw pictures of computer or household tools or build tools with digital Legos
<https://www.buildwithchrome.com/> and type a clue about the tool. Students can read the clues and guess what the tool is. Then students can delete a part or parts of the tool and discuss how that would affect use of the tool.
- To learn more about the design process, students can view videos on the Design Squad Nation website. Here is one example:
<http://pbskids.org/designsquad/video/light-baby-jumper/>
- The Design Process video: <https://www.youtube.com/watch?v=pSmz1r3l3tE>
- Use the “Build a Ship With Kate and Harry” app to have students build and experiment with ships on ipads.
<https://itunes.apple.com/us/app/build-ship-kate-harry/id563467366?mt=8>

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- Use the “Blocks App” to create their designs on ipads. <https://itunes.apple.com/us/app/blocks!/id390088835?mt=8>
- Use the “Go Car Go” App to create vehicles and test them on ipads. <https://itunes.apple.com/us/app/go-car-go/id417281582?mt=8>

Other useful resources:

- BrainPop video <https://jr.brainpop.com/science/conservation/reducereuserecycle/preview.weml>
- 60 Apps for Teaching STEAM <http://www.weareteachers.com/blogs/post/2014/08/09/60-apps-for-teaching-steam>



Suggested Differentiation: Provide differentiated instruction through any and all of the following strategies:

- Visual and verbal instructions
- Choice activities
- Chunking information
- Video and written tutorials



Curriculum Development Resources:

- Technology curriculum resources: <http://web.ccsd.k12.wy.us/techcurr/index.html>
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