Paulsboro Schools

Curriculum

Technology - 2nd Grade

2013-2014

*For adoption by all regular education programs as specified and for adoption or adaptation by all Special Education Programs in accordance with Board of Education Policy.

Board Approved: _____

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Paulsboro Public Schools Mission Statement

The mission of the Paulsboro School District is to provide each student educational opportunities to assist in attaining their full potential in a democratic society.

Our instructional programs will take place in a responsive, community based school system that fosters respect among all people.

Our expectation is that all students will achieve the New Jersey Core Curriculum Content Standards (NJCCCS) at every grade level.

Introduction/Philosophy

The Paulsboro School District Technology Curriculum is designed to promote technological and information literacy as well as critical thinking, problem-solving, and decision-making skills that is necessary for students to compete in and connect with our constant-changing global community. The curriculum motivates, empowers and enhances students' conceptual understanding, procedural knowledge, and problem-solving skills in technology including its nature, impact, and social, ethical, and human aspects. Students learn how to use many technological tools to gather, interpret and share information and to choose appropriate technologies to complete their work.

Understanding that technology is multi-disciplinary by nature and has applications in any environment, our technology curriculum is designed to promote academic success by incorporating technological tools and applications into the teaching and learning process. A real-world approach to teaching technology allows for enhancement of the learning process, enrichment of academic experience, and bestows students with the skills necessary to succeed throughout life. The curriculum allows all students including those who are English Language Learners and those who have special needs to develop technological skills while simultaneously strengthening understanding of academic knowledge and skills. Students become active participants in the learning process and learn to efficiently access, explore, apply, and synthesize information in our digital world.

Educational Goals (taken from NJCCCS)

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.

Big Ideas for Standard 8.1

In strand A, students will gain knowledge and understanding of the appropriate use of technological operations, concepts and related applications through the use of digital tools. ***In strand B,*** students use digital tools and media-rich resources to enhance creativity and the construction of knowledge. ***In strand C,*** students use digital tools to gain knowledge of environments that support the learning process and foster communication and collaboration in solving local or global issues and problems. ***In strand D,*** students will understand digital citizenship through by learning how technological advancements create societal concerns regarding the practice of safe, legal and ethical behaviors. ***In strand E,*** students use digital tools effectively for information literacy and to assist in gathering and managing information for research. ***In strand F,*** students use digital tools to promote critical thinking and assist in generating solutions and making decisions.

Quarter 1

Big Idea 1 **Strand 8.1.2.A.1-5:** Students will gain knowledge and understanding of the appropriate use of technological operations, concepts and related applications through the use of digital tools.	**Big Idea 2** **Strand 8.1.2.B.1:** Students use digital tools and media-rich resources to enhance creativity and the construction of knowledge.

Quarter 2

Big Idea 3 **Strand 8.1.2.C.1:** Students use digital tools to gain knowledge of environments that support the learning process and foster communication and collaboration in solving local or global issues and problems.	**Big Idea 4** **Strand 8.1.2.D.1:** Students will understand digital citizenship through by learning how technological advancements create societal concerns regarding the practice of safe, legal and ethical behaviors.
Big Idea 5 **Strand 8.1.2.E.1:** Students will focus on communication and collaboration by using digital tools to facilitate local and global communication and collaboration in designing products and systems.	**Big Idea 6** **Strand 8.1.2.F.1:** Students will learn that technological products and systems are created through the application and appropriate use of technological resources.

Big Ideas for Standard 8.2

In strand A, students will learn about technological products and how systems impact every aspect of the world in which we live. Students focus on creativity and innovation to 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. ***In strand B,*** students practice critical thinking and decision-making skills to develop a systematic approach to solving problems. ***In strand C,*** students will develop an understanding that human, cultural, and societal values are fundamental when designing technological systems and products in the global society. ***In strand D,*** students will focus on research and information fluency by developing information-literacy skills, research skills, data analysis skills and prediction which provide the basis for the effective design of technological systems. ***In strand E,*** students will focus on communication and collaboration by using digital tools to facilitate local and global communication and collaboration in designing products and systems. ***In strand F,*** students will learn that technological products and systems are created through the application and appropriate use of technological resources. ***In strand G,*** students will demonstrate and understanding that the designed world is the product of a design process that provides the means to convert resources into products and systems.

Quarter 3

Big Idea 7 **Strand 8.2.2.A.1:** Students will learn about technological products and understand how systems impact every aspect of the world in which we live. Students focus on creativity and innovation to 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.	**Big Idea 8** **Strand 8.2.2.B.1-2:** Students practice critical thinking and decision-making skills to develop a systematic approach to solving problems.
Big Idea 9 **Strand 8.2.2.C.1:** Students will develop an understanding that human, cultural, and societal values are fundamental when designing technological systems and products in the global society.	**Big Idea 10** **Strand 8.2.2.D.1:** Students will focus on research and information fluency by developing information-literacy skills, research skills, data analysis skills and prediction which provide the basis for the effective design of technological systems.

Quarter 4

Big Idea 11 **Strand 8.2.2.E.1:** Students will focus on communication and collaboration by using digital tools to facilitate local and global communication and collaboration in designing products and systems.	**Big Idea 12** **Strand 8.2.2.F.1:** Students will learn that technological products and systems are created through the application and appropriate use of technological resources.
Big Idea 13 **Strand 8.2.2.G.1-2:** Students will demonstrate and understanding that the designed world is the product of a design process that provides the means to convert resources into products and systems.	

<table>
<tr><td>Subject/Grade Level
2nd Grade</td><td colspan="2"></td></tr>
<tr><td rowspan="5">Objective/Cluster/Concept/Cumulative Progress Indicators Taken from CPI's in NJCCCS standards
http://www.nj.gov/education/aps/cccs

The student will be able to:

8.1.2.A.1: Identify the basic features of a computer and explain how to use them effectively.

8.1.2.A.2: Use technology terms in daily practice.

8.1.2.A.3: Discuss the common uses of computer applications and hardware and identify their advantages and disadvantages.

8.1.2.A.4: Create a document with text using a word processing program.

8.1.2.A.5: Demonstrate the ability to navigate in virtual environments that are developmentally appropriate.</td><td colspan="2">Big Idea 1
8.1.2.A.1-5: Technological Operations and Concepts: Students will gain knowledge and understanding of the appropriate use of technological operations, concepts and related applications through the use of digital tools.</td></tr>
<tr><td colspan="2">Topic: Technology: Technological Operations and Concepts</td></tr>
<tr><td colspan="2">Overarching Goals: Help students develop an awareness of computer components, fundamental hardware issues, and basic computer operations.</td></tr>
<tr><td colspan="2">Goal 1: Technological Operations and Concepts: Students will gain knowledge and understanding of the appropriate use of technological operations, concepts and related applications through the use of digital tools.</td></tr>
<tr><td>Essential Questions:
1. In a world of constant change, what skills should we learn?
2. How do I choose which technological tools to use and when it is appropriate to use them?
3. How can I transfer what I know to new technological situations/experiences?

Enduring Understandings (Students will understand that…)
1. Technology is constantly changing and requires continuous learning of new skills.
2. Selection of technology should be based on personal and/or career needs assessment.
3. A tool is only as good as the person using it.

Conceptual Understanding:

1. The use of technology and digital tools requires knowledge and appropriate use of operations and related applications.</td><td>Classroom Applications: Learning Activities:
• Enhance writing pieces by using different font styles, sizes and colors.
• Open files, software programs and save files
• Become familiar with the location of keys
• Utilize special function keys (i.e. shift, backspace, delete, space bar, enter, tab, control, alt)
• Use Home Row Keys and appropriate keyboarding techniques to increase key stroking speed and accuracy
• Use features such as bold, underline, and italics
• Create a document using MS Word, Google Docs

Assessment Evidence:
• As a class, create an "All About the Students in Mrs. DeMarco's Class"Book. Write 2-3 sentences about the things that you like to do. Revise, edit and type the final version in paragraph form. Print the story.
• The All About Your Class can be shared with other classes, parents and new students upon arrival to their school.

Resources:
http://www.noogenesis.com/inventing/pencil/pencil_page.html
http://www.pbs.org/wgbh/amex/telephone/gallery/index.html
www.edheads.org
http://www.knowitall.org/nasa/simulations/invention_process/timeline.html
http://kids.aol.com/homework-help/junior/science/inventions</td></tr>
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The student will be able to:

8.1.2.B.1: Illustrate and communicate original ideas and stories using digital tools and media-rich resources.</td><td colspan="2">Big Idea 2
8.1.2.B.1: Creativity and Innovation: The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.</td></tr>
<tr><td colspan="2">Topic: Technology: Creativity and Innovation</td></tr>
<tr><td colspan="2">Overarching Goals: Digital tools allow you to communicate your ideas.</td></tr>
<tr><td colspan="2">Goal 1: Creativity and Innovation: Use digital tools and media-rich resources to enhance creativity and the construction of knowledge.</td></tr>
<tr><td>Essential Questions:
1. How can digital tools be used for creating original and innovative works, ideas, and solutions?

Enduring Understandings (Students will understand that…)
1. Digital tools provide enhanced opportunities to design innovative solutions, and express ideas creatively.

Conceptual Understanding:

1. The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.</td><td>Classroom Applications: Learning Activities:
•Create a digital scrapbook about family members. Include information about how each family member contributes to the family unit and talk about anything that makes the person special. Images can be hand drawn and scanned or digital pictures may be used.
•Create a short video about a favorite activity.
•See Science Classroom Applications Documents for 5.4.G.2.
-If digital photographs are not available, teacher may want to create an image bank (using public domain images) for students to select images from.
• Use a teacher created template to publish a picture book or similar project on different topics from across the curriculum.

Assessment Evidence:
• Completed picture books
Resources:
1. Pics4Learning provides copyright-friendly images for student teacher use.
2. www.go.groliers.com
3. http://astronomywebguide.com/links_kids.html</td></tr>
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The student will be able to:

8.1.2.C.1: Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using electronic tools.</td><td colspan="2">Big Idea 3
8.1.2.C.1: Communication and Collaboration: Students use digital tools to gain knowledge of environments that support the learning process and foster communication and collaboration in solving local or global issues and problems.</td></tr>
<tr><td colspan="2">Topic: Technology: Communication and Collaboration</td></tr>
<tr><td colspan="2">Overarching Goals: Use digital tools to solve problems.</td></tr>
<tr><td colspan="2">Goal 1: Communication and Collaboration: Students use digital tools to gain knowledge of environments that support the learning process and foster communication and collaboration in solving local or global issues and problems.</td></tr>
<tr><td>Essential Questions:
1. How has the use of digital tools improved opportunities for communication and collaboration?

Enduring Understanding (Students will understand that…):
1. Digital tools allow for communication and collaboration anytime/anyplace worldwide.

Conceptual Understanding (Students will know that…):

1. Digital tools and environments can be used to support the learning process and foster collaboration in solving local or global issues and problems.</td><td>Classroom Applications: Learning Activities:
•Compare information about plants, animals and non-living objects found in the schoolyard with other students from around the country and the world. Information about the Square of Life project can be found at http://www.k12science.org/curriculum/squareproj/index.htm.
•Participate in a project that combines artwork with the development of reading and writing skills. Information about Create A Monster project can be found at: http://www.monsterexchange.org/.
•Create and interpret graphs, use descriptive text, develop mapping skills and collaborate internationally using the Internet while tallying lost teeth. Information about The Tooth Tally Project can be found at: http://toothtally.com/default.htm.
•See Visual and Performing Arts Classroom Applications Documents for 1.1.2.C.3.

Resources:
•Students and teachers can create free websites, participate in global projects or communicate with students from around the world using Thinkquest.
•The Center for Innovation in Engineering and Science Education (CIESE) has designed interdisciplinary projects that utilize real time data for teachers and students worldwide.
•Here Birdy, Birdy Project is an example of a collaborative project in which students from five North American schools gathered data about birds over time and analyzed trends.
•Global SchoolNet is the Internet's oldest (1995) and largest clearing- house for teacher-conducted global learning projects.
•A list of teachers who teach at International Schools.</td></tr>
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The student will be able to:

8.1.2.D.1: Model legal and ethical behaviors when using both print and non-print information by citing resources.</td><td colspan="2">Big Idea 4
8.1.2.D.1: Digital Citizenship: Students will understand digital citizenship through by learning how technological advancements create societal concerns regarding the practice of safe, legal and ethical behaviors.</td></tr>
<tr><td colspan="2">Topic: Technology: Digital Citizenship</td></tr>
<tr><td colspan="2">Overarching Goals: Individuals have an ethical responsibility when using information obtained from technological resources.</td></tr>
<tr><td colspan="2">Goal 1: Digital Citizenship: Students will understand digital citizenship through by learning how technological advancements create societal concerns regarding the practice of safe, legal and ethical behaviors.</td></tr>
<tr><td>Essential Questions:
1. What are an individual's responsibilities for using technology? What constitutes misuse and how can it best be prevented.

Enduring Understanding (Students will understand that…):
1. Technology use can have positive or negative impact on both users and those affected by their use.

Conceptual Understanding (Students will know that…):

1. Technology is ever changing and advancing. This creates change in our society including the practice of safe, legal and ethical behaviors.</td><td>Classroom Applications: Learning Activities:
• Recognize ownership of work by identifying the title, author or source of a book, article, song or poem provided by their teacher. This does not require the use of APA or MLA styles.
• Continue PenPal activities and check for punctuation and capitalization.
• Students do a series of projects on different topics. (i.e.- work in groups and gather information about ancient Egypt. Find pictures to tie in with writing. Cite all resources)

Assessment Evidence:
• Cite the specific website beneath a picture that is used for a project.
• Printed e-mail messages and responses.
• Research Report/Worksheet with cited information and pictures.

Resources:
www.edutopia.org
www.digitalcitizenship.net
www.cyberwise.org
www.theguardian.com
www.educatorstechnology.com
www.livebinders.com
www.brainpop.com
www.commonsensemedia.org</td></tr>
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The student will be able to:

8.1.2.E.1: Use digital tools and online resources to explore a problem or issue affecting children, and discuss possible solutions.</td><td colspan="2">Big Idea 5
8.1.2.E.1: Research and Information Literacy: Students use digital tools effectively for information literacy and to assist in gathering and managing information for research.</td></tr>
<tr><td colspan="2">Topic: Technology: Research and Information Literacy</td></tr>
<tr><td colspan="2">Overarching Goals: Evaluate/select information sources/digital tools based on appropriateness to specific tasks.</td></tr>
<tr><td colspan="2">Goal 1: Research and Information Literacy: Students use digital tools effectively for information literacy and to assist in gathering and managing information for research.</td></tr>
<tr><td>Essential Questions:
1. Why is the evaluation and appropriate use of accurate information more important than ever in the technological age?

Enduring Understanding (Students will understand that…):
1. Information is spread worldwide within seconds due to technological advancements and has an immediate impact.

Conceptual Understanding (Students will know that…):

1. Effective use of digital tools assists in gathering and managing information.</td><td>Classroom Applications: Learning Activities:
• Use websites that provide age appropriate current events articles such as www.timeforkids.com and find 2-3 important facts about an issue that relates to children.
• Students do a series of projects on different topics. (i.e.- work in groups and gather information about ancient Egypt. Find pictures to tie in with writing. Cite all resources)

Assessment Evidence:
• Use a class blog to inform other students about a problem that affects children. Provide at least 2-3 important facts and one possible solution. Ask other students to provide comments and offer other possible solutions.
• Cite the specific website beneath a picture that is used for a project.
• Research Report/Worksheet with cited information and pictures.

Resources:
•Time For Kids
•Weekly Reader
www.ala.org
www.noodletools.com
www.big6.com
www.ilile.org/resources/informationLiteracy.html</td></tr>
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The student will be able to:

8.1.2.F.1: Use mapping tools to plan and choose alternate routes to and from various locations.</td><td colspan="2">Big Idea 6
8.1.2.F.1: Critical Thinking, Problem Solving, and Decision-Making: Students will learn that technological products and systems are created through the application and appropriate use of technological resources.</td></tr>
<tr><td colspan="2">Topic: Technology: Critical Thinking, Problem Solving, and Decision-Making</td></tr>
<tr><td colspan="2">Overarching Goals: Awareness of computer components and basic computer operations; awareness of the Internet as a source for information and communication.</td></tr>
<tr><td colspan="2">Goal 1: Critical Thinking, Problem Solving, and Decision-Making: Students will learn that technological products and systems are created through the application and appropriate use of technological resources.</td></tr>
<tr><td>Essential Questions:
1. How do I choose which technological tools to use and when is it appropriate to use them?
2. How can I transfer what I know to new technological situations/experiences?

Enduring Understanding (Students will understand that…):
1. Selection of technology should be based on personal and/or needs assessment.
2. A tool is only as good as the person using it.

Conceptual Understanding (Students will know that…):
1. Information accessed through the use of digital tools assists in generating solutions and making decisions.</td><td>Classroom Applications: Learning Activities:
• Make a list of addresses of the local police station, fire house, hospital, and library. Use Google's mapping tools to identify where each of these buildings is located in relation to the school.
• Decide which building is closest to the school using the distance measurement tool from the school to each building. (When using Google maps, select My Maps and select "Browse from the Directory' and search for the Distance Measurement tool.)
• Students use Google Earth to produce a map of their neighborhood in relationship to New Jersey, the United States and the world.

Assessment Evidence:
• Current road construction has caused a major street in your community to be closed. Plan an alternate route from school to your home avoiding that street.
• Completed Google Earth project with rubric.

Resources:
•Google Maps
www.nea.org
education.usgs.gov/primary.html
www.discoveryeducation.com/teachers/
www.gpsvisualizer.com/
www.maps-gps-info.com/free-online-gps-tools.html</td></tr>
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The student will be able to:

8.2.2.A.1: Describe how technological products, systems, and resources are useful at school, home, and work.</td><td colspan="2">Big Idea 7
8.2.2.A.1: Nature of Technology: Creativity and Innovation: Students will learn about technological products and understand how systems impact every aspect of the world in which we live. Students focus on creativity and innovation to 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.</td></tr>
<tr><td colspan="2">Topic: Technology: Nature of Technology: Creativity and Innovation</td></tr>
<tr><td colspan="2">Overarching Goals: Technological systems impact every aspect of the world in which we live.</td></tr>
<tr><td colspan="2">Goal 1: Nature of Technology: Creativity and Innovation: Students will learn about technological products and understand how systems impact every aspect of the world in which we live. Students focus on creativity and innovation to 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.</td></tr>
<tr><td>Essential Questions:
1. Can we control the pace at which technology is created? Should we, even if we can?

Enduring Understanding (Students will understand that…):
1. 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.

Conceptual Understanding (Students will know that…):

1. Effective use of digital tools assists in gathering and managing information.</td><td>Classroom Applications: Learning Activities:
•Engage in classroom discussion regarding technological products like planes or computers that make life easier on a daily basis. Discuss how they are used and how they would improve them. Draw a picture of the improvements and post for classmates.

Assessment Evidence:
•Identify a favorite technological advancement and create a photo gallery to explain its impact and how daily life would be different without it.

Resources:
http://www.noogenesis.com/inventing/pencil/pencil_page.html
http://www.pbs.org/wgbh/amex/telephone/gallery/index.html
www.edheads.org
http://www.knowitall.org/nasa/simulations/invention_process/timeline.html
http://kids.aol.com/homework-help/junior/science/inventions
www.digitalkidscon.com</td></tr>
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The student will be able to:

8.2.2.B.1: Brainstorm and devise a plan to repair a broken toy or tool using the design process.

8.2.2.B.2: Investigate the influence of a specific technology on the individual, family, community, and environment.</td><td colspan="2">Big Idea 8
8.2.2.B.1-2: Design: Critical Thinking, Problem Solving, and Decision-Making: Students practice critical thinking and decision-making skills to develop a systematic approach to solving problems.</td></tr>
<tr><td colspan="2">Topic: Technology: Design: Critical Thinking, Problem Solving, and Decision-Making</td></tr>
<tr><td colspan="2">Overarching Goals: All technological activities use resources that include tools/machines, materials, information, energy, capital, time and people.</td></tr>
<tr><td colspan="2">Goal 1: Design: Critical Thinking, Problem Solving, and Decision-Making: Students practice critical thinking and decision-making skills to develop a systematic approach to solving problems.</td></tr>
<tr><td>Essential Questions:
1. How does technology extend human capabilities? What are the positive and negative consequences of technology? Should technologies that produce negative impact continue to be used?
2. When are sophisticated tools required, and when are the simplest tools the best to use?
3. Can a system continue to operate with a missing or malfunctioning component?
4. Is it always beneficial to use the most economical material/materials for production of a technological product?

Enduring Understanding (Students will understand that…):
1. Technological outcomes have the potential for anticipated and unanticipated positive and negative results.
2. The design process is fundamental to technology and engineering.
3. A system has interrelated components designed to collectively achieve a desired goal.
4. All technological activities use resources that include tools/machines, materials, information, energy, capital, time and people.

Conceptual Understanding (Students will know that…):
1. Information accessed through the use of digital tools assists in generating solutions and making decisions.</td><td>Classroom Applications: Learning Activities:
• Examine a broken toy(s). Identify the parts of their interactions with each other. Discuss how the toy(s) could be fixed or improved.
• Brainstorm with classmates to develop a list of technologies intended to make life easier (i.e. human assistive devices, such as crutches, wheelchairs, prosthetics).
• Identify the steps of the design process: define the problem, brainstorm, design, build, test/evaluate & redesign, and share solutions.

Assessment Evidence:
• Working in groups, create a set of instructions to reassemble a toy(s) they have examined.
• Create a graphic organizer that illustrates the technologies discussed, their impact on individuals, family, community and the environment and the trade-offs for these devices.
• Compare findings with other grade level classes and post results in the class electronic newsletter.

Resources:
http://www.kids.gov/6_8/6_8_science_scientists.shtml
http://www.graphic.org/
http://www.inspiration.com/kidspiration
www.buzzle.com
www.teenink.com
www.importanceofmoderntechnology.com</td></tr>
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The student will be able to:

8.2.2.C.1: Demonstrate how reusing a product affects the local and global environment.</td><td colspan="2">Big Idea 9
8.2.2.C.1: Technological Citizenship, Ethics, and Society: Students will develop an understanding that human, cultural, and societal values are fundamental when designing technological systems and products in the global society.</td></tr>
<tr><td colspan="2">Topic: Technology: Technological Citizenship, Ethics, and Society</td></tr>
<tr><td colspan="2">Overarching Goals: The design process is fundamental to technological advancements.</td></tr>
<tr><td colspan="2">Goal 1: Technological Citizenship, Ethics, and Society: Students will develop an understanding that human, cultural, and societal values are fundamental when designing technological systems and products in the global society.</td></tr>
<tr><td>Essential Questions:
1. How does technology extend human capabilities? What are the positive and negative consequences of technology? Should technologies that produce negative impact continue to be used?
2. When are sophisticated tools required, and when are the simplest tools best?

Enduring Understanding (Students will understand that…):
1. Technological outcomes have the potential for anticipated and unanticipated positive and negative results.
2. The design process is fundamental to technology and engineering.

Conceptual Understanding (Students will know that…):
1. Technological advancements can have both a positive and negative effects in our society.</td><td>Classroom Applications: Learning Activities:
•Choose a product within the classroom or at home that can be continually reused (i.e. – plastic bags, pencil, sharpeners, and bicycle) identify the steps necessary to maintain it.

Assessment Evidence:
•Create a poster, tri-fold or flyer explaining the effect of reusing paper on the environment and have your teacher share this in an effort to raise awareness among the general community.

Resources:
http://www.epa.gov/ow/kids.html
http://www.kidsrecycle.org/reduction.php
http://www.kidsrecycle.org/recycling.php
http://www.epa.gov/epawaste/education/pdfs/k-3.pdf
www.thetechnologicalcitizen.com
www.digitalcitizenship.net</td></tr>
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<tr><td rowspan="5">Objective/Cluster/Concept/Cumulative Progress Indicators Taken from CPI's in NJCCCS standards
http://www.nj.gov/education/aps/cccs

The student will be able to:

8.2.2.D.1: Collect and post the results of a digital classroom survey about a problem or issue and use data to suggest solutions.</td><td colspan="2">Big Idea 10
8.2.2.D.1: Research and Information Fluency: Students will focus on research and information fluency by developing information-literacy skills, research skills, data analysis skills and prediction which provide the basis for the effective design of technological systems.</td></tr>
<tr><td colspan="2">Topic: Technology: Research and Information Fluency</td></tr>
<tr><td colspan="2">Overarching Goals: Technological outcomes have the potential for anticipated and unanticipated positive and negative results.</td></tr>
<tr><td colspan="2">Goal 1: Research and Information Fluency: Students will focus on research and information fluency by developing information-literacy skills, research skills, data analysis skills and prediction which provide the basis for the effective design of technological systems.</td></tr>
<tr><td>Essential Questions:
1. How does technology extend human capabilities? What are the positive and negative consequences of technology? Should technologies that produce negative impact continue to be used?
2. When are sophisticated tools required, and when are the simplest tools best?
3. Can a system continue to operate with a missing or malfunctioning component?
4. Is it always beneficial to use the most economical material/materials for production of a technological product?

Enduring Understanding (Students will understand that…):
1. Technological outcomes have the potential for anticipated and unanticipated positive and negative results.
2. The design process is fundamental to technology and engineering.
3. A system has interrelated components designed to collectively achieve a desired goal.
4. All technological activities use resources that include tools/machines, materials, information, energy, capital, time and people.

Conceptual Understanding (Students will know that…):
1. Information accessed through the use of digital tools assists in generating solutions and making decisions.
2. Effective use of digital tools assists in gathering and managing information.</td><td>Applications: Learning Activities:
• Complete a survey regarding a product that evaluates the product based on comfort, function, aesthetics, etc. Compare and chart results of the class.
• Create a spreadsheet using MS Excel, Google Docs Spreadsheet or another online resource.
• Use Kidspiration to make a graphic organizer.

Assessment Evidence:
• Evaluate your desk for shape, function, height and use and complete a teacher facilitated online survey about this. Draw conclusions on what types of modifications could be made to the desk to improve it. Provide the results to the school principal for comment.

Resources:
http://www.ergonomics4schools.com/lzone/evaluation.htm
www.surveymonkey.com
www.doodle.com
www.freeonlinesurveys.com
www.slideshare.net</td></tr>
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http://www.nj.gov/education/aps/cccs

The student will be able to:

8.2.2.E.1: Communicate with students in the United States or other countries using digital tools to gather information about a specific topic and share results.</td><td colspan="2">Big Idea 11
8.2.2.E.1: Communication and Collaboration: Students will focus on communication and collaboration by using digital tools to facilitate local and global communication and collaboration in designing products and systems.</td></tr>
<tr><td colspan="2">Topic: Technology: Communication and Collaboration</td></tr>
<tr><td colspan="2">Overarching Goals: Communicating with digital tools is another way to practice effective communication, gather information, form ideas, opinions and conclusions about research findings.</td></tr>
<tr><td colspan="2">Goal 1: Communication and Collaboration: Students will focus on communication and collaboration by using digital tools to facilitate local and global communication and collaboration in designing products and systems.</td></tr>
<tr><td>Essential Questions:
1. How does technology extend human capabilities? What are the positive and negative consequences of technology? Should technologies that produce negative impact continue to be used?

Enduring Understanding (Students will understand that…):
1. Technological outcomes have the potential for anticipated and unanticipated positive and negative results.

Conceptual Understanding (Students will know that…):

1. Information accessed through the use of digital tools assists in generating solutions and making decisions.

2. Communicating with digital tools is another way to practice effective communication and collaboration, gather information, form ideas, opinions and conclusions about research findings.</td><td>Applications: Learning Activities:
• E-mail or skype with another school in the district, state, or country to communicate ideas for solutions to a similar problem.
• Participate in an online chat or discussion using Skype, iChat, or Google Docs Chat.
• With teacher-created bookmarks or Word documents with hyperlinks, direct students to specific topic related Web sites to gather information. (i.e.-send students to astronomy sites to find the distance each planet is from the sun using Astronomy Web Guide for K-6 students. Use PenPal, Skype, Google Docs Chat to gather additional information.)

Assessment Evidence:
• Electronically contact students in another school or country to discuss what books they like to read. If there are books you like in common, decide who your favorite characters are in the book and why. Share what you learn with your family.
• Science worksheet on Astronomy.

Resources:
http://www.ciese.org/sage/
www.epals.com
www.skype.com
www.go.groliers.com
http://astronomywebguide.com/links_kids.html</td></tr>
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Curriculum Management System – Big Idea 12

Subject/Grade Level **2nd Grade**		
Objective/Cluster/Concept/Cumulative Progress Indicators Taken from CPI's in NJCCCS standards **http://www.nj.gov/education/aps/cccs** **The student will be able to:** **8.2.2.F.1:** Identify the resources needed to create technological products and systems.	**Big Idea 12** **8.2.2.F.1: Resources for a Technological World:** Students will learn that technological products and systems are created through the application and appropriate use of technological resources.	
	Topic: Technology: Resources for a Technological World	
	Overarching Goals: All technological products and systems use resources that include tools/machines, materials, information, energy, capital, time and people.	
	Goal 1: Resources for a Technological World: Students will learn that technological products and systems are created through the application and appropriate use of technological resources.	
	Essential Questions: 1. How does technology extend human capabilities? What are the positive and negative consequences of technology? Should technologies that produce negative impact continue to be used? 2. When are sophisticated tools required, and when are the simplest tools best? 3. Can a system continue to operate with a missing or malfunctioning component? 4. Is it always beneficial to use the most economical material/materials for production of a technological product? **Enduring Understanding (Students will understand that…):** 1. Technological outcomes have the potential for anticipated and unanticipated positive and negative results. 2. The design process is fundamental to technology and engineering. 3. A system has interrelated components designed to collectively achieve a desired goal. 4. All technological activities use resources that include tools/machines, materials, information, energy, capital, time and people. **Conceptual Understanding (Students will know that…):** 1. Technological products are created through the application and appropriate use of technological resources.	**Classroom Applications: Learning Activities:** • Discuss the seven resources of technology: Time, people, energy, money, tools, materials, knowledge. • Describe the resources needed to create technological products and systems using classroom discussions and teacher generated materials. **Assessment Evidence:** • Identify the parts of a chair in your classroom and where those parts can be found. As an inventor of a new chair, sketch a picture of a chair you would like and post it on the bulletin board. After looking at all the chairs, choose the chair you would be most comfortable in and tell its inventor why you like it. **Resources:** http://images.google.com locationindependent.com/an-introductory-guide-to-creating-selling-digit... www.designsponge.com/.../biz-ladies-how-to-create-digital-products.htm www.toysrus.com www.pinterest.com/whoknewtips/make-your-own-kids-toys www.buzzfeed.com/twopoodles/toys-you-can-make-yourself

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The student will be able to:

8.2.2.G.1: Describe how the parts of a common toy or tool interact and work as part of a system.

8.2.2.G.2: Explain the importance of safety in the use and selection of appropriate tools and resources for a specific purpose.</td><td colspan="2">Big Idea 13
8.2.2.G.1-2: The Designed World: Students will demonstrate and understanding that the designed world is the product of a design process that provides the means to convert resources into products and systems.</td></tr>
<tr><td colspan="2">Topic: Technology: The Designed World</td></tr>
<tr><td colspan="2">Overarching Goals: The design process is fundamental to technology and engineering.</td></tr>
<tr><td colspan="2">Goal 1: The Designed World: Students will demonstrate and understanding that the designed world is the product of a design process that provides the means to convert resources into products and systems.</td></tr>
<tr><td>Essential Questions:
1. How does technology extend human capabilities? What are the positive and negative consequences of technology? Should technologies that produce negative impact continue to be used?
2. When are sophisticated tools required, and when are the simplest tools best?
3. Can a system continue to operate with a missing or malfunctioning component?
4. Is it always beneficial to use the most economical material/materials for production of a technological product?

Enduring Understanding (Students will understand that…):
1. Technological outcomes have the potential for anticipated and unanticipated positive and negative results.
2. The design process is fundamental to technology and engineering.
3. A system has interrelated components designed to collectively achieve a desired goal.
4. All technological activities use resources that include tools/machines, materials, information, energy, capital, time and people.

Conceptual Understanding (Students will know that…):
1. You can convert resources into products and systems by using a design process.</td><td>Classroom Applications: Learning Activities:
•General laboratory safety rules will be reviewed by the instructor with the class, safe practices for the use of tools and equipment (emphasize: scissors, stapler, tape dispenser, computer, cords, electrical plugs and outlets).

Assessment Evidence:
•Use recycled paper to construct a freestanding tower and its component parts using recycled paper provided by the teacher. Create a tower designed to stand as tall as possible while demonstrating the safe use of scissors, stapler and tape dispenser. Hint: a wider base will allow for a taller tower.

Resources:
http://www.crayola.com/crafts/detail/family-safety-rules-poster-craft
www.kidshealth.org
www.nmbtc.com/applications
toys.about.com › Parenting › Toys › Health and Safety
www.nyc.gov/html/doh/downloads/pdf/.../lead-toy-safety-fact-sheet.pdf
www.creativityinstitute.com</td></tr>
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