Garfield School District
Technology Curriculum Grades K-5

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Board Resolution Date: 8-26-13   *Res. # 08-126-13*

Technology Curriculum Pacing Chart
Trimesters 1-3

Topic/Standard	Description/Objective	Duration
Technology Operations and Concepts (8.1.2.A)	The students will use digital tools that apply to word processing such as creating, maintaining and saving files within various software programs.	1-2 Weeks
Creativity and Innovation (8.1.2.B)	The students will demonstrate innovative ideas and narratives using digital tools and media-rich resources.	3 Weeks
Communication and Collaboration (8.1.2.C)	The students will engage in an assortment of developmentally appropriate media-rich activities to connect with other students whether in the school or countries utilizing electronic tools.	3 Weeks
Digital Citizenship (8.1.2.D)	The students will understand and implement the proper legal and ethical performances by learning how to cite resources whether in print or non-print.	1 Week
Research and Information Literacy (8.1.2.E)	The students will explore problems or issues affecting children and converse various solutions using online resources.	2 Weeks
Critical Thinking, Problem Solving, and Decision-Making (8.1.2.F)	The students will use an assortment of digital tools to learn alternate mapping skills.	2 Weeks
Technology Operations and Concepts (8.1.4.A)	The students will use digital tools that apply to word processing such as creating, maintaining and saving files within various software programs.	2 Weeks
Creativity and Innovation (8.1.4.B)	The students will demonstrate innovative ideas and narratives using digital tools and media-rich resources.	2 Weeks
Communication and Collaboration (8.1.4.C)	The students will engage in an assortment of developmentally appropriate media-rich activities to connect with other students whether in the school or countries utilizing electronic tools	2 Weeks
Digital Citizenship (8.1.4.D)	The students will understand and implement the proper legal and ethical performances by learning how to cite resources whether in print or non-print, cyber safety, security and ethics.	2 Weeks
Research and Information Literacy (8.1.4.E)	The students will explore problems or issues affecting the United State and/or another country and provide the various solutions using online resources while managing information.	2 Weeks
Critical Thinking, Problem Solving, and Decision-Making (8.1.4.F)	The students will understand and comprehend data collection, organization and analyzing with the application of digital tools.	2 Weeks

Technology Curriculum Pacing Chart
Trimesters 1-3

Topic/Standard	Description/Objective	Duration
Nature of Technology - Creativity and Innovation (8.2.2.A)	The students will use digital tools that apply to word processing such as creating, maintaining and saving files within various software programs.	2-3 Weeks
Design - Critical Thinking, Problem Solving, and Decision-Making (8.2.2.B)	The students will investigate, brainstorm and design a plan to solve real-world problems.	2 Weeks
Design - Technological Citizenship, Ethics, and Society (8.2.2.C)	The students will engage in an assortment of developmentally appropriate media-rich activities to connect with other students whether in the school or countries utilizing electronic tools.	1 Week
Research and Information Fluency (8.2.2.D)	The students will recognize appropriate applications to design technological products.	2 Weeks
Communication and Collaboration (8.2.2.E)	The students will correspond with students from other countries or the United States using digital tools.	2 Weeks
Resources for a Technological World (8.2.2.F)	The students will recognize appropriate applications to design technological products.	2 Weeks
The Designed World (8.2.2.G)	The students will investigate, brainstorm and design a common tool that works with part of a system and importance of safety issues.	2 Weeks
Nature of Technology: Creativity and Innovation (8.2.4.A)	The students will express how technology tools and resources are practical for everyday life.	2-3 Weeks
Design - Critical Thinking, Problem Solving, and Decision-Making (8.2.4.B)	The students will investigate, brainstorm and design a plan to solve real-world problems.	2 Weeks
Design-Technological Citizenship, Ethics, and Society (8.2.4.C)	The students will have an understanding and give specific details of the purpose of trademarks and products in the global society with consideration of the proper ethics.	2 Weeks
Research and Information Fluency (8.2.4.D)	The students will analyze problems and utilize data to assist with possible solutions using technology tools.	2 Weeks
Communication and Collaboration (8.2.2.E)	The students will correspond with peers to produce and publish reports about how successful technology is when utilized in address for local/global problems.	3-4 Weeks
Resources for a Technological World (8.2.4.F)	Analyze the impact of technology on our daily lives.	3 Weeks
The Designed World 8.2.4.G	The students will recognize appropriate applications to design technological products and examine a malfunctioning tool and present options to repair the product.	3-4 Weeks

Unit Overview
Content Area: Educational Technology
Unit Title: Technology Operations and Concepts (8.1.2.A)
Target Course/Grade Level: Grades K-2
Duration: 1-2 Weeks
Description: The students will use digital tools that apply to word processing such as creating, maintaining and saving files within various software programs.

Concepts & Understandings	
Concepts • Identify the basic features of a computer and explain how to use them effectively. • Use technology terms in daily practice. • Discuss the common uses of computer applications and hardware and identify their advantages and disadvantages. • Create a document with text using a word processing program. • Demonstrate the ability to navigate in virtual environments that are developmentally appropriate.	**Understandings** • The use of technology and digital tools requires knowledge and appropriate use of operations and related applications.

Learning Targets
8.1.2.A.1 , 8.1.2.A.2, 8.1.2.A.3, 8.1.2.A.4 , 8.1.2.A.5   **RL.1.2; RL.1.3; RL.1.4 RL.1.5; RL.1.10**   **1.MD.4;**   **9.1.4.A.1; 9.1.8.A.4; 9.1.4.B.2; 9.1.4.B.3 CRP 1-12**

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills

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?   • How can I transfer what I know to new technological situations/experiences?   • What are my responsibilities for using technology? What constitutes misuse and how can it best be prevented?

Unit Results/Assessments
Students will ...   • be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.   ***Assessments:***   • Projects   • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk   Differentiated Instruction   ELL, Special Ed., At Risk   • ELL- Sight Words, Content Related Vocabulary Words. Save & Print   • 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. (story starter)

Enrichment

- The All About Your Class book can be shared with other classes, parents and new students upon arrival to their school.
- Write a short essay on what they learned.
- Create a Venn diagram comparing how technology has helped and improved our lives.

On-Level

- Develop knowledge of terms in daily conversations and teachings. (word wall, hard drive, computer, monitor, printer, digital camera, keyboard, mouse, internet)
- Create a web in Inspiration labeling parts of a computer.
- Poems
- Use educational websites to learn to navigate (i.e. study island/gizmos)
- Watch video on Parts of the computer and what it does on Discovery Education.
- Enhance writing pieces by using different font styles, sizes and colors. Students should be able to: Open files, software programs and save files, become familiar with the location of keys Utilize special function keys (e.g., shift, backspace, delete, etc.)
- Word Spacing, Saving, Edit Document, Cut, Delete, etc.

Materials

- Microsoft Office or Online Resources
- Computer
- IPAD
- Printer
- Smartboard

Unit Overview	

Content Area: Educational Technology

Unit Title: Creativity and Innovation (8.1.2.B)

Target Course/Grade Level: Grades K-2

Duration: 3 Weeks

Description: The students will demonstrate innovative ideas and narratives using digital tools and media-rich resources.

Concepts & Understandings	
Concepts • Illustrate and communicate original ideas and stories using digital tools and media-rich resources.	**Understandings** • The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.

Learning Targets

8.1.2.B.1;
RL.1.4; RL.1.3. 3; RL.1.4; RL.1.5; RL.1.6; RL.1.9; 5.3.4.A.2; RL 4.2;
9.1.4.A.1; 9.1.8.A.4; 9.1.4.B.2; 9.1.4.B.3 CRP 1-12

21st Century Themes and Skills

• creativity, critical thinking, collaboration, problem-solving skills

Essential Questions

• How can I use digital tools to enhance creativity and knowledge?

Unit Results/Assessments

Students will …
be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

Assessments:
• Projects
• Student writing

Suggested Activities/Materials

Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk

Differentiated Instruction ELL, Special Ed., At Risk
• KidPix (Slideshow, Illustration/Narration)
• Mini Newspaper provide template

On-Level
• KidPix
• Toontastic App for iPad
• Mini Newspaper one sided

Enrichment
• Mini Newspaper two sided or Magazine
• PowerPoint presentation

Materials
• Microsoft Office or Online Resources
• Computer
• IPAD
• Printer
• Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Communication and Collaboration (8.1.2.C)
Target Course/Grade Level: Grade K-2
Duration: 3 Weeks
Description: The students will engage in an assortment of developmentally appropriate media-rich activities to connect with other students whether in the school or countries utilizing electronic tools.

Concepts & Understandings	
Concepts	**Understandings**
• Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using electronic tools.	• Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.

Learning Targets
8.1.2.C.1
5.3.6.A.1- 5.3.6.A.2
RI.5.3; RI.5.7
3.MD.B.3 .4.MD.B.4; 5.MD.B.2
9.1.4.A.1; 9.1.8.A.4; 9.1.4.B.2; 9.1.4.B.3   CRP 1-12

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How can I collaborate and use electronic tools to solve problems?
• 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 my responsibilities for using technology? What constitutes misuse and how can it best be prevented?

Unit Results/Assessments
Students will ...
• be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.
Assessments:
• Projects
• Student writing
• Blog

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
Differentiated Instruction ELL, Special Ed., At Risk
• Internet Resources (website link provided)
• School to School Blog Communication (peer collaboration)
• Create graphs using data such as holidays, animals, colors, etc. (use online templates: http://nces.ed.gov/nceskids/createagraph/ & SMART Notebook)
On-Level
• Internet Resources (website link provided)
• School to School Blog Communication (peer collaboration)
• Create graphs using data such as holidays, animals, colors, etc.
• Video Conference or Chat with Scientist; Public Figure; students from another country; etc.

- Gizmos Virtual Labs (Experiment; trial and error; solve problems)
- Discovery Education Multimedia
  Enrichment
- Internet Resources (utilize search engines to navigate)
- School to School Blog Communication (develop own topic)
- Create graphs using data such as holidays, animals, colors, etc. (use Microsoft Word)

Materials
- Microsoft Office or Online Resources
- Computer
- IPAD
- Printer

Unit Overview
Content Area: Educational Technology
Unit Title: Digital Citizenship (8.1.2.D)
Target Course/Grade Level: Grades K-2
Duration: 1 Week
Description: The students will understand and implement the proper legal and ethical performances by learning how to cite resources whether in print or non-print.

Concepts & Understandings	
Concepts	**Understandings**
• Model legal and ethical behaviors when using both print and non-print information by citing resources.	• Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors.

Learning Targets
8.1.2.D.1
9.1.4.A.1; 9.1.8.A.4; 9.1.4.B.2; 9.1.4.B.3; CRP 1-12
6.1.4.A.1-6.1.4.A.8; 6.1.4.A.9- 6.1.4.A.10

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• Should we cite resources to practice safe, legal and ethical behaviors? Explain.
• How can I collaborate and use electronic tools to solve problems?
• 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 my responsibilities for using technology? What constitutes misuse and how can it best be prevented?

Unit Results/Assessments
Students will ...
• be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.
Assessments:
• Projects
• Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
Differentiated Instruction
ELL, Special Ed., At Risk
• Give students websites to visit for non copyrighted material
• Site Resources using http://www.easybib.com/or www.bibme.org . Print out from website.
On-Level
• Projects-cite sources (websites/URL-copy and paste under image)
• Insert non-copyright images in document (clipart)
• The teacher models –Cite the specific website beneath a picture that is used for a project/lesson. Community Helpers- teacher copies and pastes a graphic to introduce a helper and copies and cites the URL where the graphic came from. Giving credit where credit is due. Print graphic with citation for class.
• Visit Graphic websites take note of copyright protected graphics
• Site Resources using http://www.easybib.com/or www.bibme.org . Print out from website.
Enrichment

- Create a presentation (cite resources)
- Site Resources using http://www.easybib.com/or www.bibme.org copy and paste into Word document.

Materials

- Microsoft Office or Online Resources
- Computer
- IPAD
- Printer
- Smartboard

Unit Overview

Content Area: Educational Technology
Unit Title: Research and Information Literacy (8.1.2.E)
Target Course/Grade Level: Grades K-2
Duration: 2 Weeks
Description: The students will explore problems or issues affecting children and converse various solutions using online resources.

Concepts & Understandings	
Concepts • Use digital tools and online resources to explore a problem or issue affecting children, and discuss possible solutions.	**Understandings** • Effective use of digital tools assists in gathering and managing information

Learning Targets
8.1.2.E.1 **2.1.4.B.1; 2.1.4.B.2; 2.1.4.B.4;** **2.MD.10** **5.3.6.A.1- 5.3.6.A.2** **RI.2.3** **9.1.4.A.1; 9.1.8.A.4; 9.1.4.B.2; 9.1.4.B.3; CRP 1-12**

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• What steps can I take to use digital tools to access, evaluate, and synthesis information in order to solve a problem that affects me?

Unit Results/Assessments
Students will ... • be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge. **Assessments:** • Projects • Student writing

Suggested Activities/Materials

Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
*All activities are based upon their individual ability level.

Differentiated Instruction
   ELL, Special Ed, At Risk
• Graphic Organizer Software, such as Kidspiration; Inspiration; or Word
• Food Pyramid-Kidspiration/websites
• Cyber-Bullying –netsmartz.org
• Internet-Safety-ProfessorGarfield.org
• Online Educational Videos, such as BrainPop Jr.
On-Level
• Form simple questions and begin to explore ways to answer them.
• Explore various types of tool and their intended use, which can be harmful or helpful. (discussion in digital citizenship)

- Create a brochure (Publisher or Word)

Enrichment

- Flyer, video commercial *(IPADS IMOVIE APP OR POWERPOINT),* create food plate with proper food groups

Materials

- Microsoft Office or Online Resources
- Computer
- IPAD
- Printer
- Smartboard

Unit Overview

Content Area: Educational Technology

Unit Title: Critical Thinking, Problem Solving, and Decision-Making (8.1.2.F)

Target Course/Grade Level: Grades K-2

Duration: 2 Weeks

Description: The students will use an assortment of digital tools to learn alternate mapping skills.

Concepts & Understandings

Concepts	**Understandings**
• Use mapping tools to plan and choose alternate routes to and from various locations.	• Information accessed through the use of digital tools assists in generating solutions and making decisions.

Learning Targets

8.1.2.F.1
RI.3.2, RL.3.3, RI.3.8, RL4.5, RL 4.6, RL.5.2,
5.1.4.A.2, 6.1.4.B.1, 6.1.4. B.3
9.1.8.B.1, 9.1.8.B.2, CRP 1-12

21st Century Themes and Skills

• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions

• How are digital mapping tools used to plan alternative routes?

Unit Results/Assessments

Students will ...
• be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

Assessments:
• Projects
• Student writing

Suggested Activities/Materials

Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
Differentiated Instruction
   ELL, Special Ed., At Risk
• Navigate Google Earth using a premade web quest
• Google mapmaker- create map online
   On-Level
• Discovery Education: Atlas Interactive Map
• Google Earth
• Mapquest
Enrichment
• Compare the digital tools we use today to what we used in the past for mapping routes?
• Create a Map to school from home Word; Publisher;
Materials
• Microsoft Office or Online Resources
• Computer, IPAD
• Printer
• Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Technology Operations and Concepts (8.1.4.A)
Target Course/Grade Level: Grades 3-4
Duration: **2 Weeks**
Description: The students will use digital tools that apply to word processing such as creating, maintaining and saving files within various software programs.

Concepts & Understandings	
Concepts • Demonstrate effective input of text and data using an input device • Create a document with text formatting and graphics using a word processing program. • Create and present a multimedia presentation that includes graphics. • Create a simple spreadsheet, enter data, and interpret the information. • Determine the benefits of a wide range of digital tools by using them to solve problems.	**Understandings** • The use of technology and digital tools requires knowledge and appropriate use of operations and related applications.

Learning Targets
8.1.4.A.1, 8.1.4.A.2, 8.1.4.A.3, 8.1.4.A.4, 8.1.4.A.5   *RI.3.2, RL.3.3, RI.3.8, RL4.5, RL 4.6, RL.5.2,*   *5.1.4.A.2 , 5.MD.5c,*   *9.1.8.B.1, 9.1.8.B.2,* **CRP 1-12**

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• What ways can we demonstrate our knowledge of content material? How do graphics impact our presentation

Unit Results/Assessments
Students will ...   • be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.   **Assessments:**   • Projects   • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk   Differentiated Instruction   ELL, Special Ed., At Risk   • Create a Table in Word-What are the parts of a computer?   • Mastering Basic Terms: mouse, keyboard, font, label input and output devices (Insert Labels using textboxes)   On Level

- Mastering Basic Terms: mouse, keyboard, font, label input and output devices
- Determine the benefits of a wide range of digital tools by using them to solve problems.
- Create a Graphic Organizer-What are the parts of a computer?
- What are the parts of a computer?
- Use Word to create any document, format for font and insert a graphic from the Internet.
- Create a Poem, Graphic organizer

Enrichment
- Determine the benefits of a wide range of digital tools by using them to solve problems.
- Create and present a multimedia presentation that includes graphics.
- Create a simple Excel spreadsheet, enter data, insert formulas, calculate sum, and interpret the information.
- Survey class and tally votes and graph them in Excel, i.e. favorite sport; ice cream flavor; pet
- Math Gizmo virtual tools

Materials
- Microsoft Office, Inspiration or Online Resources
- Computer, IPAD, Printer
- Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Creativity and Innovation (8.1.4.B)
Target Course/Grade Level: Grades 3-4
Duration: 2 Weeks
Description: The students will demonstrate innovative ideas and narratives using digital tools and media-rich resources.

Concepts & Understandings	
Concepts	**Understandings**
• Produce a media-rich digital story about a significant local event or issue based on first-person interviews.	• The use of digital tools and media-rich resources enhances creativity and the construction of knowledge.

Learning Targets
8.1.4.B.1   *RI.3.2, RL.3.3, RI.3.8, RL4.5, RL 4.6, RL.5.2,*   *9.1.8.B.1, 9.1.8.B.2,* CRP 1-12

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How do media rich digital stories impact the reader?   • How do graphics impact your presentation or story?

Unit Results/Assessments
Students will ...   • be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.   **Assessments:**   • Projects   • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk   Differentiated Instruction   ELL, Special Ed, At Risk   • Produce a media-rich digital story about a significant local event or issue based on first-person interviews.   • Kidpix   • www.Readwritethink.org   On-Level   • Create a digital story in PowerPoint   • Type interview questions in Word and then create a PowerPoint presentation   • Research a major event and report about it in Word.   Enrichment   • IPAD IMovie App or other digital story app create a digital story   Materials   • Microsoft Office or Online Resources   • Computer; IPAD; Printer   • Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Communication and Collaboration (8.1.4.C)
Target Course/Grade Level: Grades 3-4
Duration: 2 Weeks
Description: The students will engage in an assortment of developmentally appropriate media-rich activities to connect with other students whether in the school or countries utilizing electronic tools.

Concepts & Understandings	
Concepts • Engage in online discussions with learners in the United States or from other countries to understand their perspectives on a global problem or issue.	**Understandings** • Digital tools and environments support the learning process and foster collaboration in solving local or global issues and problems.

Learning Targets
8.1.4.C.1   *6.3.4.C.1*   *9.1.8.B.1, 9.1.8.B.2,* CRP 1-12

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How has social media affect our society?   • What digital tools can we use to communicate with experts around the world?   • How can we collaborate with experts to solve a problem?   • How can we learn about other cultures through technology?

Unit Results/Assessments
Students will ...   • be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.   *Assessments:*   • Projects   • Student writing   • Blog

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk   Differentiated Instruction   ELL, Special Ed, At Risk   • Venn Diagram in a Word Template-compare and contrast an issue US and another country   • Display Venn Diagram on Smartboard   On-Level   • Engage in online discussions with learners in the United States or from other countries to understand their perspectives on a global problem/issue.   • Skype/Blog with a classroom from another country to learn about each other's culture.   • Skype/Blog with a Scientist   Enrichment   • Design a comparison chart in Word, Publisher or PP

Unit Overview
Content Area: Educational Technology
Unit Title: Digital Citizenship (8.1.4.D)
Target Course/Grade Level: Grades 3-4
Duration: 2 Weeks
Description: The students will understand and implement the proper legal and ethical performances by learning how to cite resources whether in print or non-print, cyber safety, security and ethics.

Concepts & Understandings	
Concepts • Explain the need for each individual, as a member of the global community, to practice cyber safety, cyber security, and cyber ethics when using existing and emerging technologies. • Analyze the need for and use of copyrights. • Explain the purpose of an acceptable use policy and the consequences of inappropriate use of technology.	**Understandings** • Technological advancements create societal concerns regarding the practice of safe, legal, and ethical behaviors

Learning Targets
8.1.4.D.1   8.1.4.D.2   8.1.4.D.3   *9.1.8.B.1, 9.1.8.B.2,* **CRP 1-12**   *RI. 4.1, RI. 4.7*

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• What makes a good digital citizen?   • How can we practice safety on the Internet and on social network websites?   • What are the legal issues and cyber ethics when using social network websites?   • What is a cyber bully? What are the new cyber laws that protect against cyber bullying? Discuss digital copyright laws?   • What is acceptable user policy?

Unit Results/Assessments
Students will ...   • be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.   **Assessments:**   • Projects   • Student writing

Suggested Activities/Materials

Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
 Differentiated Instruction
    ELL, Special Ed, At Risk
 • Display Internet Safety Rules on Smartboard have students type them in Word
 • Watch Internet Safety Video-have students
    On-Level
 • Discuss the importance of cyber safety, cyber security, and cyber ethics as individuals and members of the

global community when using existing and emerging technologies.

- Create classroom Internet Safety Rules Evaluate the accuracy, relevance, and appropriateness of print and non-print electronic information sources.
- Review school district acceptable user policy
- Have students come up with their own policy

Enrichment

- Create a cyber safety pamphlet.

Materials

- Microsoft Office or Online Resources
- Computer, IPAD, Printer
- Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Research and Information Literacy (8.1.4.E)
Target Course/Grade Level: Grades 3-4
Duration: 2 Weeks
Description: The students will explore problems or issues affecting the United State and/or another country and provide the various solutions using online resources while managing information.

Concepts & Understandings	
Concepts • Investigate a problem or issue found in the United States and/or another country from multiple perspectives, evaluate findings, and present possible solutions, using digital tools and online resources for all steps. • Evaluate the accuracy of, relevance to, and appropriateness of using print and non-print electronic information sources to complete a variety of tasks.	**Understandings** • Effective use of digital tools assists in gathering and managing information.

Learning Targets
8.1.4.E.1   8.1.4.E.2 , *9.1.8.B.1, 9.1.8.B.2,* CRP 1-12

21st Century Themes and Skills
creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How can we investigate a national or global issue? How can you determine if a website has accurate information? • What are wikis? Are wikis reliable? • What are reliable resources on the Internet? • Compare printed to non printed resources?

Unit Results/Assessments
Students will ... • be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge. *Assessments:* • Projects • Student writing

Suggested Activities/Materials

Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
Differentiated Instruction
   ELL, Special Ed, At Risk
   •
   On-Level
• Investigate a problem/ issues found in the United States and/ or another country from multiple perspectives using digital tools and resources and evaluate findings to present possible solutions.
• Compare print to non printed resources
• Research a topic using non printed and printed resources

Enrichment
- Create a newspaper using a variety of resources using Word or Publisher

Materials
- Microsoft Office or Online Resources
- Computer, IPAD, Printer
- Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Critical Thinking, Problem Solving, and Decision-Making (8.1.4.F)
Target Course/Grade Level: Grades 3-4
Duration: 2 Weeks
Description: The students will understand and comprehend data collection, organization and analyzing with the application of digital tools.

Concepts & Understandings	
Concepts	**Understandings**
• Select and apply digital tools to collect, organize, and analyze data that support a scientific finding.	• Information accessed through the use of digital tools assists in generating solutions and making decisions.

Learning Targets
8.1.4.F.1
2.MD.10
9.1.8.B.1, 9.1.8.B.2, **CRP 1-12**
5.OA.1; 5.OA.2; 5.OA.3; 5.1.4.D.1

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• Which digital tools or technology can you use to collect, organize, and analyze scientific data?
• How has technology impacted Science?

Unit Results/Assessments
Students will ...
• be able to use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.
Assessments:
• Projects
• Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk

Differentiated Instruction
ELL, Special Ed, At Risk
• List facts in Word on Mammals; life cycles; hurricanes; etc.

On-Level
• Collect data using the Internet; organize findings in Inspiration or graphic organizer;
• Create an Excel spreadsheet based on your findings. (Number of Hurricanes; Life Cycles; Types of mammals; etc.)

Enrichment
• Design a life cycle chart using Word; Inspiration; or other graphic organizer
• Excel Graph- choose any type of graph to show results (bar, double bar, pie, line, etc.)

Materials
• Microsoft Office or Online Resources
• Computer; IPAD; Printer
• Smartboard

Unit Overview

Content Area: Educational Technology
Unit Title: Nature of Technology - Creativity and Innovation (8.2.2.A)
Target Course/Grade Level: K-2
Duration: 2-3 Weeks
Description: The students will express how technology tools and resources are practical for everyday life.

Concepts & Understandings

Concepts	Understandings
• Describe how technology products, systems, and resources are useful at school, home, and work.	• Technology products and systems impact every aspect of the world in which we live.

Learning Targets

8.2.2.A.1
2.MD.10
9.1.8.B.1, 9.1.8.B.2, CRP 1-12
5.OA.1; 5.OA.2; 5.OA.3; 5.1.4.D.1

21st Century Themes and Skills

- Creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions

- How do technology products enhance our everyday life?
- Can we control the pace at which technology is created? Should we, even if we can?
- 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?
- When are the most sophisticated tools required and when are the simplest tools best?

Unit Results/Assessments

Students will ...
- be able 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.

Assessments:
- Projects
- Student writing
- Writing prompts

Suggested Activities/Materials

Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
Differentiated Instruction
  ELL, Special Ed, At Risk
- List how technology has made everyday life easier
- Give Excel Template for shopping or budget spreadsheet (list formulas in document)
On-Level
- Excel Budget/ spreadsheet (i.e. shopping list, budget)
- PP on how technology has made everyday life easier
- Graphic Organizer
- Word (i.e. letter writing, reports)
- Discovery Education-STEM; virtual labs; virtual field trips; Assessment Builder

<u>Enrichment</u>
- Discovery Education-STEM; virtual labs; virtual field trips; Assessment Builder
- Publisher (i.e. brochure, flyer)

<u>Materials</u>
- Microsoft Office or Online Resources
- Computer, IPAD, Printer, Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Design - Critical Thinking, Problem Solving, and Decision-Making (8.2.2.B)
Target Course/Grade Level: Grades K-2
Duration: 2 Weeks
Description: The students will investigate, brainstorm and design a plan to solve real-world problems.

Concepts & Understandings	
Concepts • Brainstorm and devise a plan to repair a broken toy or tool using the design process. • Investigate the influence of a specific technology on the individual, family, community, and environment.	**Understandings** • The design process is a systematic approach to solving problems.

Learning Targets
8.2.2.B.1; 8.2.2.B.2 9.1.8.A.2-A.4; CRP 1-12

21st Century Themes and Skills
• Creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• What steps can we take to understand technological design, global society and the environment? • How do technology products enhance our everyday life? • Can we control the pace at which technology is created? Should we, even if we can? • 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? • When the most sophisticated tools are required and when are the simplest tools best?

Unit Results/Assessments
Students will ... • be able 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. **Assessments:** • Projects • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk Differentiated Instruction   ELL, Special Ed, At Risk • Provide a family tree template On-Level • Use Kidspiration and create a web. Place the specific technology in the center and write the ideas around the web. • MS Word outline • Family Scrapbook • Family Tree Enrichment • Create a brochure comparing technology today to the past. Materials

- Microsoft Office or Online Resources
- Computer; IPAD; Printer; Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Design - Technological Citizenship, Ethics, and Society (8.2.2.C)
Target Course/Grade Level: Grades K-2
Duration: 1 Week
Description: The students will comprehend and exhibit how to recycling affects the environment in a whole through digital system.

Concepts & Understandings	
Concepts • Demonstrate how reusing a product affects the local and global environment.	**Understandings** • Knowledge and understanding of human, cultural, and societal values are fundamental when designing technology systems and products in the global society.

Learning Targets
8.2.2.C.1   **9.1.8.A.2-A.4; CRP 1-12**

21st Century Themes and Skills
• Creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How can we better understand technological design, global society and the environment?   • Can we control the pace at which technology is created? Should we, even if we can?   • 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?   • When are the most sophisticated tools required and when are the simplest tools best?

Unit Results/Assessments
Students will ...   • be able 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.   **Assessments:**   • Projects   • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk   Differentiated Instruction   • ELL, Special Ed, At Risk   • Students type a recycling sentence and draw a picture   On-Level   • Create a table showing reduce, recycle, reusable items.   Enrichment   • Create a brochure showing reduce, recycle, reusable items.   • Word-Write how reusing can affect the environment in a positive way.   Materials   • Microsoft Office or Online Resources   • Computer; Printer   • Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Research and Information Fluency (8.2.2.D)
Target Course/Grade Level: Grades K-2
Duration: 2 Weeks
Description: The students will gather and post digital assessments about problems and utilize data to assist with possible solutions.

Concepts & Understandings	
Concepts • Collect and post the results of a digital classroom survey about a problem or issue and use data to suggest solutions.	**Understandings** • Information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology systems.

Learning Targets
8.2.2.D.1 *9.1.8.B.1, 9.1.8.B.2,* CRP 1-12 *5.OA.1; 5.OA.2; 5.OA.3; 5.1.4.D.1*

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How can we use research and data analysis to provide for effective design of technology systems? • Can we control the pace at which technology is created? Should we, even if we can? • 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? • When are the most sophisticated tools required and when are the simplest tools best?

Unit Results/Assessments
Students will ... • be able 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. **Assessments:** • Projects • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk Differentiated Instruction ELL, Special Ed, At Risk • Online Graph: www.nces.ed.gov • **View Read, write, think http://www.readwritethink.org/files/resources/interactives/compcontrast** On-Level • Excel/Word- charts & graphs i.e. use chart to collect data, tallies, spreadsheet, table • Venn Diagram compare and contrast technology positive and negatives Enrichment • Create a survey (Survey Monkey; other survey program) on how technology has made life easier or harder Materials • Microsoft Office or Online Resources

- Computer; Printer
- Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Communication and Collaboration (8.2.2.E)
Target Course/Grade Level: K-2
Duration: 2 Weeks
Description: The students will correspond with students from other countries or the United States using digital tools.

Concepts & Understandings	
Concepts	**Understandings**
• Communicate with students in the United States or other countries using digital tools to gather information about a specific topic and share results.	• Digital tools facilitate local and global communication and collaboration in designing products and systems.

Learning Targets
8.2.2.E.1
9.1.8.B.1, 9.1.8.B.2; CRP 1-12

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How are digital tools used to facilitate communication?
• Can we control the pace at which technology is created? Should we, even if we can?
• 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?
• When are the most sophisticated tools required and when are the simplest tools best?

Unit Results/Assessments
Students will ...
• be able 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.

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk

Differentiated Instruction
  ELL, Special Ed, At Risk
• Write to a Pen Pal
  On-Level
• Skype with another country or other type of video chat
• Blogging with other classes from another country sharing information about cultures
  Enrichment
• Digital photos
• Design your own product
  Materials
• Microsoft Office or Online Resources
• Computer; IPAD; Printer
• Smartboard

Unit Overview

Content Area: Educational Technology

Unit Title: Resources for a Technological World (8.2.2.F)

Target Course/Grade Level: K-2

Duration: 2 Weeks

Description: The students will recognize appropriate applications to design technological products.

Concepts & Understandings

Concepts	Understandings
• Identify the resources needed to create technological products and systems.	• Technological products and systems are created through the application and appropriate use of technological resources.

Learning Targets

8.2.2.F.1
5.3.4.A.2
9.1.8.B.1, 9.1.8.B.2; CRP 1-12

21ˢᵗ Century Themes and Skills

• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions

• How can we identify technological products through the application of technological resources?
• Can we control the pace at which technology is created? Should we, even if we can?
• 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?
• When are the most sophisticated tools required and when are the simplest tools best?

Unit Results/Assessments

Students will ...
• be able 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.

Assessments:
• Projects
• Student writing

Suggested Activities/Materials

Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
Differentiated Instruction
ELL, Special Ed, At Risk
• Use Kid Pix or graphic organizer to draw slides or showing what plants need to grow.
On-Level
• MS Word - Describe how resources are used to make things.
• PowerPoint presentation
• Inspiration graphic organizer
Enrichment
• MS Publisher - Create a brochure
Materials
• Microsoft Office or Online Resources
• Computer; IPAD; Printer

- Smartboard

Unit Overview

Content Area: Educational Technology

Unit Title: The Designed World (8.2.2.G)

Target Course/Grade Level: Grades K-2

Duration: 2 Weeks

Description: The students will investigate, brainstorm and design a common tool that works with part of a system and importance of safety issues.

Concepts & Understandings	
Concepts	**Understandings**
• Describe how the parts of a common toy or tool interact and work as part of a system. • Explain the importance of safety in the use and selection of appropriate tools and resources for a specific purpose.	• The designed world is the product of a design process that provides the means to convert resources into products and systems.

Learning Targets

8.2.2.G.1; 8.2.2.G.2
6.3
9.1.8.B.1, 9.1.8.B.2; **CRP 1-12**

21st Century Themes and Skills

- creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions

- How can we use technology tools for a specific purpose in a system?
- How can we identify technological products through the application of technological resources?
- Can we control the pace at which technology is created? Should we, even if we can?
- 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?
- When are the most sophisticated tools required and when are the simplest tools best?

Unit Results/Assessments

Students will ...

- be able 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.

Assessments:

- Projects
- Student writing

Suggested Activities/Materials

Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
Differentiated Instruction
  ELL, Special Ed, At Risk

- Interactive Smart board Lesson: Teacher shows students some unfamiliar tools. Students guess what the tools do and explain how they work.

On-Level

- Create a safety brochure for a toy or house hold product (Word; PowerPoint; Publisher)

- Internet Safety Tips Pamphlet

Enrichment

- IPAD IMovie

Materials

- Microsoft Office or Online Resources
- Computer; IPAD; Printer
- Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Nature of Technology: Creativity and Innovation (8.2.4.A)
Target Course/Grade Level: Grades 3-4
Duration: 2-3 Weeks
Description: The students will investigate the elements that influence technology products and services have developed over time by economic, political and/or cultural influences.

Concepts & Understandings	
Concepts	**Understandings**
- Investigate factors that influence the development and function of technology products and systems. - Using a digital format, compare and contrast how a technology product has changed over time due to economic, political, and/or cultural influences.	- Technology products and systems impact every aspect of the world in which we live. - Technology products and systems impact every aspect of the world in which we live.

Learning Targets
8.2.4.A.1; 8.2.4.A.2 *9.1.8.B.1, 9.1.8.B.2;* CPR 1-12

21st Century Themes and Skills
creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
- How has technology improved the production of products and systems?   - How has technology impacted aspects of our lives?   - What digital resources help to advertise products?

Unit Results/Assessments
Students will ...   - be able 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.   Assessments: - Projects   - Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk Differentiated Instruction   ELL, Special Ed, At Risk Create a chart comparing and contrasting how a product has changed over time due to economic, political and/ or cultural influences using a digital format.

On-Level
- Design your own product and describe how it was made and how it works.
- Use Publisher to create a flyer to advertise product
- MS Word - List products of today compared to the past.

Enrichment
- Videotape a commercial (IMovie App)
- Create a Podcast

Materials
- Microsoft Office or Online Resources
- Computer; IPAD; Printer
- Smartboard

Unit Overview
Content Area: Educational Technology
Unit Title: Design - Critical Thinking, Problem Solving, and Decision-Making (8.2.4.B)
Target Course/Grade Level: Grades 3-4
Duration: 2 Weeks
Description: The students will investigate, brainstorm and design a plan to solve real-world problems.

Concepts & Understandings	
Concepts	**Understandings**
- Develop a product using an online simulation that explores the design process. - Design an alternative use for an existing product. - Explain the positive and negative effect of products and systems on humans, other species, and the environment. - Compare and contrast how technology transfer happens within a technology, among technologies, and among other fields of study.	The design process is a systematic approach to solving problems.

Learning Targets
8.2.4.B.1; 8.2.4.B.2; 8.2.4.B.3; 8.2.4.B.4 *9.1.8.B.1, 9.1.8.B.2;* CPR 1-12

21st Century Themes and Skills
creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
- What are the causes, consequences and possible technology solutions to problems in a persistent, contemporary and emerging world (e.g., health, security, resource allocation, economic development or environmental quality)?   - What are the advantages and disadvantages of widespread use and reliance on technology in the workplace and in society as a whole?

Unit Results/Assessments
Students will ...   - be able 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.   **Assessments:**   - Projects   - Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk Differentiated Instruction ELL, Special Ed, At Risk   - Create a Flyer for a new product on a Word or Publisher template   On-Level   - Create a new product and advertise it.   - MS Power Point - Choose a product. How can technology make it better?   - MS Power Point presentation or MS Word report - Describe how technology can have a positive and negative effect on humans. Example: Technology can cause people to be less physical, think less, etc.

<u>Enrichment</u>
- Create a simulation
- MS Power Point presentation or MS Word report - Cite examples showing how the failure of system components contributes to the instability of a technological system (e.g., if the fuel pumps in an automobile malfunctions, the entire system will not work properly; or if a computer hard drive fails, the computer system will not work.

<u>Materials</u>
- Microsoft Office or Online Resources
- Computer; IPAD; Printer
- Smartboard

Unit Overview
Content Area: Technology Education, Engineering, and Design
Unit Title: Design-Technological Citizenship, Ethics, and Society (8.2.4.C)
Target Course/Grade Level: Grades 3-4
Duration: 3-4 Weeks
Description: The students will have an understanding and give specific details of the purpose of trademarks and products in the global society with consideration of the proper ethics.

Concepts & Understandings	
Concepts	**Understandings**
• Explain the impact of disposing of materials in a responsible way. • Explain the purpose of trademarks and the impact of trademark infringement on businesses. • Examine ethical considerations in the development and production of a product from its inception through production, marketing, use, maintenance, and eventual disposal by consumers.	• Knowledge and understanding of human, cultural, and societal values are fundamental when designing technology systems and products in the global society.

Learning Targets
8.2.4.C.1, 8.2.4.C.2, 8.2.4.C.3   *9.1.8.B.1, 9.1.8.B.2;* CPR 1-12

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How can a trademark protect a business?   • What ways can we help the environment by using renewable energy?   • How can we dispose or recycle products properly?   • How can we meet the needs of consumers?

Unit Results/Assessments
Students will ...   • 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.   <u>*Assessments:*</u>   • Projects   • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk   Differentiated Instruction   ELL, Special Ed, At Risk   • List renewable resources   • Flyer or one page pamphlet   On-Level   • Create a brochure showing recycle, renew, reuse   • Discuss how computers are disposed of properly and other products   • Write how disposing materials properly impacts the environment   • Survey consumers on products   • Bar graph showing results of survey

Enrichment
- Design your own trademark for your company
- Develop a business: brochure; trademark; budget;
- Create a marketing plan
- Develop a product based on consumer wants and needs (t-shirt; ice cream flavor; etc.) with survey

Materials
- Microsoft Office or Online Resources
- Computer; IPAD; Printer
- Smartboard

Unit Overview
Content Area: Technology Education, Engineering, and Design
Unit Title: Research and Information Fluency (8.2.4.D)
Target Course/Grade Level: Grades 3-4
Duration: **2 Weeks**
Description: The students will analyze problems and utilize data to assist with possible solutions using technology tools.

Concepts & Understandings	
Concepts • Analyze responses collected from owners/users of a particular product and suggest modifications in the design of the product based on their responses.	**Understandings** • Information-literacy skills, research, data analysis, and prediction provide the basis for the effective design of technology systems.

Learning Targets
8.2.4.D.1   *9.1.8.B.1, 9.1.8.B.2;* **CPR 1-12**

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• Create a survey and administer   • Collect and analyze results from survey.   • Based on results of survey how can you make modifications in to design

Unit Results/Assessments
Students will ...   • 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.   ==**Assessments:**==   • Projects   • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk   ==Differentiated Instruction==   ==ELL, Special Ed, At Risk==   • Bar graph   ==On-Level==   • Create a survey and administer   • Collect and analyze results from survey   ==Enrichment==   • Based on results of survey how can you make modifications in to design   • Survey/results   ==Materials==   • Microsoft Office or Online Resources   • Computer; IPAD; Printer   • Smartboard

Unit Overview
Content Area: Technology Education, Engineering, and Design
Unit Title: Communication and Collaboration (8.2.4.E)
Target Course/Grade Level: Grades 3-4
Duration: 3-4 Weeks
Description: The students will correspond with peers to produce and publish reports about how successful technology is when utilized in address for local/global problems.

Concepts & Understandings	
Concepts • 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.	**Understandings** • Digital tools facilitate local and global communication and collaboration in designing products and systems.

Learning Targets
8.2.4.E.1   *9.1.8.B.1, 9.1.8.B.2;* CPR 1-12

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How has technology successfully addressed global or local problems?

Unit Results/Assessments
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.   **Assessments:**   • Projects   • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk   Differentiated Instruction   ELL, Special Ed, At Risk   • List in a Word table template renewable resources   • List how the school recycles   On-Level   • How will this address global problem?   • Research how NJ is developing renewable energy sources   • Skype with an expert   • How can our school conserve energy or recycle   • Finished design   • Presentation   Enrichment   • Design your own energy source (windmill; solar panels; etc.)   • Report your findings based on a questionnaire?   Materials   • Microsoft Office or Online Resources   • Computer; IPAD; Printer

- Smartboard

Unit Overview
Content Area: Technology Education, Engineering, and Design
Unit Title: Resources for a Technological World (8.2.4.F)
Target Course/Grade Level: Grades 3-4
Duration: 3 Weeks
Description: Analyze the impact of technology on our daily lives.

Concepts & Understandings	
Concepts	**Understandings**
• Technological products and systems are created through the application and appropriate use of technological resources • Explain how resources are processed in order to produce technological products and systems.	• Technological products and systems are created through the application and appropriate use of technological resources

Learning Targets
8.2.4.F.1, 8.2.4.F.2 *9.1.8.B.1, 9.1.8.B.2;* CPR 1-12

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• How does a product design that meets customer needs, although challenging, can have a large impact on a company's success? • How do producers meet the needs of the future? For example: developing safer cars that recognize street signs. • How does product design effect costs? • Discuss the importance of a product is to achieve customer satisfaction; it must have the combined characteristics of good design, competitive pricing, and the ability to fill a market need? • 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? • When are the most sophisticated tools required? When are the simplest tools best? Can a system continue to operate with a missing or malfunctioning component?

Unit Results/Assessments
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. *Assessments:* • Projects • Student writing

Suggested Activities/Materials
Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk Differentiated Instruction ELL, Special Ed, At Risk • Completed questions low level activity from Gizmo On-Level • Brochure, report, or essay • Watch a video on Discovery Education

- Use a Gizmo on Explore Learning

<mark>Enrichment</mark>

- Describe how technology can help produce products and systems. For example: designing a pizza to satisfy different tastes of the consumer.
- Develop a product, such as a car that would be safer. What features would you put in this Smart car?

<mark>Materials</mark>

- Microsoft Office or Online Resources
- Computer; IPAD; Printer
- Smartboard

Unit Overview
Content Area: Technology Education, Engineering, and Design
Unit Title: The Designed World 8.2.4.G
Target Course/Grade Level: Grades 3-4
Duration: 3 Weeks
Description: The students will recognize appropriate applications to design technological products and examine a malfunctioning tool and present options to repair the product.

Concepts & Understandings	
Concepts • Examine a malfunctioning tool and use a step-by-step process to troubleshoot and present options to repair the product. • Explain the functions of a system and subsystems. • Evaluate the function, value, and aesthetics of a technological product, system, or environment from the perspective of the user and the producer.	**Understandings** • The designed world is the product of a design process that provides the means to convert resources into products and systems.

Learning Targets
8.2.4.G.1, 8.2.4.G.2, 8.2.4.G.3 *9.1.8.B.1, 9.1.8.B.2;* **CPR 1-12**

21st Century Themes and Skills
• creativity, critical thinking, collaboration, problem-solving skills, communication skills

Essential Questions
• Can we control the pace at which technology is created? Should we, even if we can? • 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? • When are the most sophisticated tools required and when are the simplest tools best?

Unit Results/Assessments
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. **Assessments:** • Projects • Student writing

Suggested Activities/Materials

Strategies for Differentiated Instruction to support Special Education, ELL, Gifted & Talented, and At Risk
Differentiated Instruction
ELL, Special Ed, At Risk
 Diagram a living system and its subsystems (Inspiration)
On-Level
• Create a manual; website; diagram showing step by step process. Give troubleshooting solutions.
• Choose a product and describe its function, value, and aesthetics. Break into groups (user and producer) Give different perspectives.
Enrichment
• Write a review of a product
Materials
• Microsoft Office or Online Resources

- Computer; IPAD; Printer
- Smartboard