

Arizona Educational Technology Standard Articulated by Grade Level

Grade 8

Strand 1 Creativity and Innovation

This strand requires that students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.

Concept 1: Knowledge and ideas

Use digital models and simulations to examine real-world connections, explore complex systems and issues, and enhance understanding.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1: Analyze and evaluate information to generate new ideas, processes or products.</p>	<p>M 08-S5C2-02 Analyze and compare mathematical strategies for efficient problem solving; select and use one or more strategies to solve a problem.</p> <p>M 08-S5C2-10 Solve logic problems involving multiple variables, conditional statements, conjectures, and negation using words, charts, and pictures.</p> <p>SC 08-S3C2 Develop viable solutions to a need or problem.</p> <p>SS 08-S5C2-01 Identify the functions and relationships among various institutions (e.g., business firms, banks, government agencies, labor unions, corporations) that make up an economic system.</p> <p>ELL III 08-S3C2-02</p> <p>Writing 08-S3C3-01 Write a variety of functional texts (e.g., directions, recipes, procedures, rubrics, labels, posters, graphs/tables).</p>	<p>Explanation: The student uses creative thinking and innovative processes to construct knowledge, generate new ideas, and create products.</p> <p>Construct a poll or survey to gather data using an interactive digital tool (e.g. InspireData, Google form, Survey Monkey), then display results. For example, conduct eye color survey for heredity, or create an online poll for favorite authors.</p> <p>Math: After exploring a mathematical concept on the NLVM website http://nlvm.usu.edu/, students solve a math “word” problem (of the same concept) by creating their own algorithm, or finding a “different way” to solve the problem.</p> <p>Science: Analyze new ideas and possible solutions to address a need or problem dealing with an environmental change</p> <p>Science and math: Students use recyclable materials data to generate ideas to help the environment. Students gather information about aluminum can usage and graph their findings in a line plot. http://illuminations.nctm.org/LessonDetail.aspx?ID=L208</p> <p>Social Studies: Analyze relationships among various banking institutions and how they affect human capital such as health, education, and training.</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<p>Reading: Examples:</p> <ul style="list-style-type: none"> • Create a heading on a new document. Highlight key words in writings. Use WP tools to italicize, underline, and create tables. • Follow directions using online template (Inspiration) and create a sign (student created manual, pamphlet, label, etc.) • Follow directions on a web-quest in order to answer questions and solve problems. <p>ELL: Same as above with considerations for vocabulary,</p>

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Concept 2: Models and Simulations

Use digital models and simulations to examine real-world connections, explore complex systems and issues, and enhance understanding.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Summarize the relationship amongst interdependent elements of a digital model or simulation.</p>	<p>Reading 08-S2C2-01 Use information from text and text features to determine the sequence of activities needed to carry out a procedure.</p> <p>SC 08-S1C3 Analyze and interpret data to explain correlations and results; formulate new questions.</p>	<p>Explanation: Students will create models or digital simulations. Examples:</p> <ul style="list-style-type: none"> • Robotics • Manipulatives • NLVM (National Library of Virtual Manipulatives) <p>Web Resources:</p> <ul style="list-style-type: none"> • http://nlvm.usu.edu/

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<ul style="list-style-type: none"> • http://www.thinkfinity.org/ <p>Reading: Students will summarize information and determine the interdependent elements for a technological procedure. Example:</p> <ul style="list-style-type: none"> • Illustrate a content-related concept or process using a model, simulation, or concept-mapping software. <p>Science: Analyze and interpret data to explain correlations and results of Predator-Prey relationships, relationships between niches in biomes, between biomes and ecosystems, and finally between organisms and their environment Use simulations to examine and determine the effects of changing environmental variables. Example: Charles Darwin’s Survival Game at http://science.discovery.com/interactives/literacy/darwin/darwin.html</p> <p>Science: Students use this simulation to create experiments to see what changes in reactions, concentrations and temperatures can make when atoms and molecules are made to collide. http://phet.colorado.edu/simulations/sims.php?sim=Reactions_and_Rates</p>
<p>PO 2. Analyze system processes and outcomes using models or simulations.</p>	<p>Reading 08-S2C2-01 Describe the historical and cultural aspects found in cross-cultural works of literature.</p> <p>SC 08-S5C2-05 Create a graph devised from measurements of moving objects and their interactions, including:</p> <ul style="list-style-type: none"> • position-time graphs • velocity-time graphs <p>Writing 08-S3C2-03 Write a process essay that includes:</p>	<p>Explanation: Students will conduct digital simulations using 3D modeling software such as Google SketchUp.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Body systems • Online math manipulatives • Science simulations, Weather simulations • Robotics • Thinkfinity • NLVM (National Library of Virtual Manipulatives) • Economics

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Performance Objectives	Curriculum Connections	Explanations and Examples
	<p>a. a thesis statement b. supporting details c. introductory, body, and concluding paragraphs</p>	<p>Reading: Use data-collection technology such as probes, handheld devices, and geographic mapping systems to gather, view, analyze, and report results for content-related problems.</p> <p>Simulations of scientific process skills in investigations - manipulating variables Use models to help students understand the relationships of the Earth, moon and sun Use models to help students understand the difference between cell division with mitosis and meiosis Use ‘The Moving Man’ http://phet.colorado.edu/en/simulation/moving-man to analyze the link between movement and position-time and velocity-time graphs</p>
<p>PO 3. Analyze and apply understanding of how one system, digital models or simulations operates by comparing it to another system of a different type that operates in a similar manner.</p>	<p>SC 08-S4C4-05 Analyze the following behavioral cycles of organisms:</p> <ul style="list-style-type: none"> • hibernation • migration • dormancy (plants) <p>Reading 08-S3C1-05 Use graphic organizers in order to clarify the meaning of the text. Writing 08-S3C2-03 Write a process essay that includes:</p> <p>a. a thesis statement b. supporting details c. introductory, body, and concluding paragraphs</p>	<p>Explanation: Students will compare two like systems using digital models.</p> <p>Science:</p> <ul style="list-style-type: none"> • Ecosystem, Habitat, Biome • Compare hibernation, migration and dormancy as behavioral adaptations that help organisms adapt and survive <p>Social Studies: Investigate the collapse of four ancient civilizations. Identify the trends and patterns that forecast the collapse of a civilization. http://www.learner.org/interactives/collapse/</p> <p>Science: By changing the environment, students predict what genetic mutations need to occur in a population of rabbits to ensure their survival. http://phet.colorado.edu/simulations/sims.php?sim=Natural_Selection</p> <p>Science: students will model three patterns of human population growth. The simulation will involve the use of specifically-colored cubes to conduct the simulation.</p>

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		<p>Reading: the student can use graphic organizers to clarify the meaning of text and elements of literature. Examples:</p> <ul style="list-style-type: none"> • Compare and contrast reading materials using online interactive software give examples like http://www.readwritethink.org/files/resources/interactives/comparecontrast/ and show relationships between digital models, etc. • analyze and plot major and minor characters in literary text using digitized tools such as Inspiration, give free examples like http://www.lucidchart.com/, http://bubbl.us/, http://www.mindmeister.com/ , http://www.mindomo.com/ or http://www.gliffy.com/ • participate in CIESE real time data projects - http://www.k12science.org/realtimeproj.html <p>or National Internet Projects http://www.k12science.org/nationalprojects.html</p> <p>Students will create a model comparing and contrasting economic systems such as communism and capitalism.</p>

Strand 1 Creativity and Innovation

Concept 3: Trends and Possibilities

Use technology to forecast trends and possibilities.

Performance Objectives	Curriculum Connections	Explanations and Examples
PO 1. Identify patterns and trends to forecast possibilities from different perspectives.	SC 08-S4C4-05 SC 08-S4C2-02 SC 08-S4C2-03	Explanation: Students will use a variety of viewpoints to detect relationships to predict probable outcomes.

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	<p>Distinguish between the nature of dominant and recessive traits in humans.</p> <p>Reading 08-S1C6-05 Connect information and events in text to experience and to related text and sources.</p> <p>Writing 08-S3C2-02 Write a summary based on the information gathered that include(s):</p> <ol style="list-style-type: none"> a. a topic sentence b. supporting details c. relevant information 	<p>Examples:</p> <ul style="list-style-type: none"> • Sales forecast • Stock market • Probability, statistics, data analysis. • Six Thinking Hats: Looking at Decisions from All Points of View - http://www.mindtools.com/pages/article/newTED_07.htm <p>Science: Students will use data to graph patterns and trends with regard to migrations. Evaluate the patterns and trends involved in genetics and inheritance of human characteristics.</p> <p>Reading: the student can employ multiple technology based strategies to comprehend text. Examples:</p> <ul style="list-style-type: none"> • Use online prediction guides to predict what happens next http://ethemes.missouri.edu/resources/S00002484.shtml • Highlight “right-there” questions in digital documents to formulate clarifying questions • Use digital media to connect information and events from a story or text using software like Inspiration
<p>PO 2. Ask questions and investigate a problem from different perspectives and formulate inferences from known facts.</p>	<p>SS 08-S5C2-01 Identify the functions and relationships among various institutions (e.g., business firms, banks, government agencies, labor unions, corporations) that make up an economic system.</p> <p>SS 08-S4C4-07 Describe how changes in technology, transportation, communication, and resources affect the location of economic activities in places and world regions.</p>	<p>Explanation: Students will question and investigate a problem of a specific trend. Make an inference from a variety of points of view. (Example: What would happen if.....?)</p> <p>Examples:</p> <ul style="list-style-type: none"> • Sales forecast • Stock market

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	<p>SC 08-S1C3 Analyze and interpret data to explain correlations and results; formulate new questions.</p> <p>Reading 08-S1C6-03 Generate clarifying questions in order to comprehend text.</p> <p>Writing 08-S3C2 Expository writing includes non-fiction writing that describes, explains, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.</p> <p>SS 08-S4C2-01 Identify common characteristics of contemporary and historical regions on the basis of climate, landforms, ecosystems, and culture.</p>	<ul style="list-style-type: none"> • Probability, statistics, data analysis <p>Science: Students use scientific processes to formulate and investigate questions about the natural world, analyze data and then share results and conclusions by communicating using creativity, innovation, and expression of ideas through: Newsletters, Brochures, Movies, Podcast/Vodcast, Digital storytelling, Web publishing</p> <p>Reading: The student uses creative thinking and innovative processes to construct clarifying questions.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Use online prediction guides to predict what happens next http://ethemes.missouri.edu/resources/S00002484.shtml • Highlight “right-there” questions in digital documents to formulate clarifying questions <p>Use digital media to connect information and events from a story or text using software like Inspiration</p>
<p>PO 3. Draw conclusions that reflect clear and logical links between the trends and patterns and the interpretations made from them.</p>	<p>Reading 08-S1C6-02 Confirm predictions about text for accuracy.</p> <p>SC 08-S1C3 Analyze and interpret data to explain correlations and results; formulate new questions.</p> <p>Writing 08-S3C2-02 Write a summary based on the information gathered that include(s):</p> <ol style="list-style-type: none"> a. a topic sentence b. supporting details c. relevant information 	<p>Explanation: Students will draw conclusions from interpreting data and come to clear, logical conclusions.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Sales forecast • Stock market • Weather patterns • Migrations • Probability, statistics, data analysis. <p>Reading: Student use multiple strategies to comprehend text. Science: Students use scientific processes to analyze data and then draw results and conclusions about the patterns, trends and interpretations generated. Learning (research or content) can be communicated through websites, videos, etc.</p>

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Concept 4: Original Works

Use technology to create original works in innovative ways.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Create innovative products or projects using digital tools to express original ideas.</p>	<p>SS 08-S1C10-08 Describe current events using information from class discussions and various resources (e.g., newspapers, magazines, television, Internet, books, maps).</p> <p>SC 08-S1C4 Communicate results of investigations.</p> <p>Writing 08-S3C3 Functional writing provides specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.</p>	<p>Explanation: Students can create, innovate, and express ideas through technology programs or online resources.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Newsletters • Brochures • Movies (Moviemaker, iMovie, Animoto- http://animoto.com/, xtranormal - http://www.xtranormal.com, vime0 - http://vimeo.com/) • Podcast/Vodcast (Podomatic - http://www.podomatic.com/login) • Digital storytelling (Voicethread- http://voicethread.com/., Glogster -http://www.glogster.com/) • Web publishing • Inventions <p>Science: Students can create innovative projects using technology (Google sites, photo story 3, xtranormal http://www.xtranormal.com/) to express conceptual learning about science.</p>
<p>PO 2. Use digital tools to collaborate with a group to communicate original ideas, products, or projects effectively in a creative or innovative style.</p>	<p>SS 08-S1C10-08 Describe current events using information from class discussions and various resources (e.g., newspapers, magazines, television, Internet, books, maps).</p> <p>Reading 08-S3C1-04 Identify the author's stated or implied purpose(s) for writing expository text.</p>	<p>Explanation: Students will be able to create, innovate, and express ideas.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Use video conferencing to communicate • Debate a topic using online tools (blog, chat, message-board, etc.)

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Performance Objectives	Curriculum Connections	Explanations and Examples
	<p>SC 08-S4C2-03 Distinguish between the nature of dominant and recessive traits in humans.</p> <p>Writing 08-S3C2 Expository writing includes non-fiction writing that describes, explains, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.</p>	<ul style="list-style-type: none"> • Publish information on a topic using online tools (blog, wiki, podcast, etc.) • Collaborate on a live workspace (Windows Live, Google Docs, wiki etc.) • Newsletters • Brochures • Movies • Podcast/Vodcast • Web publishing • Digital storytelling • SpringNote http://springnote.com/ - Springnote is a great tool for group projects as it allows group members to easily log in and add information to a group project. This would work well as a way to take research information from different group members and place it in a place where all group members can work independently but still view information from all members or even the whole class. By working through the "group member" option, teachers can create the account and invite all students so they can access the site. <p>Reading: The student will Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text. Examples:</p> <ul style="list-style-type: none"> • analyze media bites and create a new commercial; publish commercial • Use Digital creativity tools (camera, digital imaging, etc.) to restate, summarize or distinguish opinions and create a documentary film of reading content or literary materials. <p>Science: Involve students in collaborative projects using technology to explain how Earth's geological systems result in plate movements, landforms and earthquakes.</p> <p>Involve students in collaborative projects to determine principles of heredity using a family pedigree tree following particular human traits</p>

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		<p>such as eye color, widow’s peak or blood type.</p> <ul style="list-style-type: none"> • Web Resources <ul style="list-style-type: none"> ○ “Publish for your Public - Blogs” <ul style="list-style-type: none"> ▪ https://sites.google.com/site/thingstolearnwith/6-write-better-for-public-consumption---blogs

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Strand 2: Communication and Collaboration

This strand requires students to use digital media and environments to communicate and collaborate with others.

Concept 1: Effective Communications and Digital Interactions

Communicate and collaborate with others employing a variety of digital environments and media.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Collaborate and communicate with peers, experts, or others employing a variety of digital tools to share findings and/or publish.</p>	<p>SS 08-S1C10-08 Describe current events using information from class discussions and various resources (e.g., newspapers, magazines, television, Internet, books, maps).</p> <p>Reading 08-S3C3-03 Describe the intended effect of persuasive strategies and propaganda techniques (e.g., bandwagon, peer pressure, repetition, testimonial, transfer, loaded words) that an author uses.</p> <p>SC 08-S1C4 Communicate results of investigations.</p> <p>Writing 08-S3C2 Expository writing includes non-fiction writing that describes, explains, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.</p>	<p>Explanation: Students effectively work with others and share information outside of their classroom. Example:</p> <ul style="list-style-type: none"> • Epals - where students can safely connect, collaborate and learn using protected email and blogs http://www.epals.com • Live workspace (Google Docs, Windows Live) • Wikis • Blogs • Email • Video conferencing • Chain story (might want to explain what this is and how done in technology) • Texting • Student response clickers • Classroom presentations • Web publishing <p>Reading: Have the students collaborate to explain basic elements of discourse in text and their relationship to the purpose and use of persuasive strategies. Examples:</p> <ul style="list-style-type: none"> • using the above examples read and respond to digital communication • create digital dialogs for the purpose of online debate <p>Science: Invite community experts into the classroom to view digitally created projects and give advice regarding experimental design or</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<p>content related misconceptions.</p> <p>Web Resources</p> <ul style="list-style-type: none"> • “Always Know the <i>Where</i> In What You Learn” <ul style="list-style-type: none"> ○ https://sites.google.com/site/thingstolearnwith/12-always-know-the-where-in-what-you-learn • “Publish for your Public - Blogs” <ul style="list-style-type: none"> ○ https://sites.google.com/site/thingstolearnwith/6-write-better-for-public-consumption---blogs
<p>PO 2. Explain and demonstrate features, conventions, voice, and etiquette of interactive digital environments to communicate with an appropriate audience.</p>	<p>Writing 08-S2C4 Persuasive writing is used for the purpose of influencing the reader. The author presents an issue and expresses an opinion in order to convince an audience to agree with the opinion or to take a particular action.</p> <p>Reading 08-S3C2-03 Interpret details from a variety of functional text (e.g., warranties, product information, technical manuals, instructional manuals, consumer safety publications) for a specific purpose (e.g., to follow directions, to solve problems, to perform procedures, to answer questions).</p> <p>SC 08-S2C1-04 Evaluate career opportunities related to life and physical sciences.</p>	<p>Explanation: The student will demonstrate an understanding of “Knowing your audience” in a digital environment, and communicate effectively using voice with the audience member.</p> <p>Example:</p> <ul style="list-style-type: none"> • Students use academic language and conventions when working within an academic digital environment (example: a classroom wiki or blog). Students use more casual language and more relaxed conventions when communicating on a social networking site (example: Facebook or MySpace). • When texting or emailing a friend, a student may use emotions or “internet slang” (ex: LOL). However, in all settings this would not be appropriate. <p>Reading: When online, the student should be able to determine the intended effect of persuasive strategies and propaganda techniques (e.g., bandwagon, peer pressure, repetition, testimonial, transfer, loaded words) in order to make informed, appropriate choices.</p> <p>Examples:</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<ul style="list-style-type: none"> • Use media examples to demonstrate peer pressure, propaganda techniques. • Web Resource <ul style="list-style-type: none"> ○ CyberSmart ○ All lessons listed below found at: <ul style="list-style-type: none"> ▪ http://cybersmartcurriculum.org/lessonsbygrade/6-8/ <ul style="list-style-type: none"> • “Good Messaging Manners” • Scientific Career Day - Invite experts into the classroom, or challenge experts to use technology students are familiar with to present how technology is used in their career as well as to demonstrate features, convention, voice and etiquette.

Strand 2: Communication and Collaboration

Concept 2: Digital Solutions

Contribute to project teams to produce original works or solve problems.

Performance Objectives	Curriculum Connections	Explanations and Examples
PO 1. Communicate and collaborate for the purpose of producing original works or solving problems.	SS 08-S1C9-02 Describe the impact of the Cold War on the United States: <ul style="list-style-type: none"> a. McCarthyism b. arms race 	Explanation: Student will work with others outside of their classroom to produce a product or solve problems. Example: <ul style="list-style-type: none"> • Live workspace (Google Docs, Windows Live)

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	<p>c. space race d. Cuban Missile Crisis e. creation of the CIA</p> <p>Reading 08-S3C1-04 Identify the author's stated or implied purpose(s) for writing expository text.</p> <p>SC 08-S4C2-03 Distinguish between the nature of dominant and recessive traits in humans.</p> <p>Writing 08-S3C3 Functional writing provides specific directions or information related to real-world tasks. This includes letters, memos, schedules, directories, signs, manuals, forms, recipes, and technical pieces for specific content areas.</p>	<ul style="list-style-type: none"> • Wikis • Blogs • Email • Video conferencing • Podcast/ Vodcast • Online Polling <p>Reading: The student will identify, analyze, and apply knowledge of the structures and elements of literature in order to produce an original work. Examples:</p> <ul style="list-style-type: none"> • work with literature circle/group to analyze literary characters <ul style="list-style-type: none"> - create online version of similar story <ul style="list-style-type: none"> ○ rewrite the ending of an existing story and produce digitally <p>Science: Design an interactive, collaborative project with the goal of students examining possible solutions to address environmental risks in biological, chemical or geological systems.</p> <ul style="list-style-type: none"> • Web Resources: <ul style="list-style-type: none"> ○ “Ask an Expert” <ul style="list-style-type: none"> ▪ http://www.k12science.org/askanexpert.html (This site offers several links to ask an expert sites in the area of Science) ▪ http://www.refdesk.com/expert.html (Numerous sites in all content areas.) ○ Online Polling <ul style="list-style-type: none"> ▪ http://www.polleverywhere.com/ There are numerous poll websites, we offer this as one possible resource. ○ “Publish for your Public - Blogs” <ul style="list-style-type: none"> ▪ https://sites.google.com/site/thingstolearnwith/6-write-better-for-public-consumption---blogs

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Strand 2: Communication and Collaboration

Concept 3: Global Connections

Create cultural understanding and global awareness by interacting with learners of other cultures.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Independently locate and interact with teacher approved global communities.</p>	<p>Reading 08-S2C1-07 Analyze the characteristics and structural elements (essential attributes) of a variety of poetic forms (e.g., epic, lyric, sonnet, ballad, elegy, haiku, free verse).</p> <p>SC 08-S2C1 Identify individual, cultural, and technological contributions to scientific knowledge.</p> <p>Writing 08-S2C4 Word choice reflects the writer’s use of specific words and phrases to convey the intended message and employs a variety of words that are functional and appropriate to the audience and purpose.</p>	<p>Explanation: Students will participate in information exchange with students from your own classroom, your own school, another area, or another culture.</p> <p>Example:</p> <ul style="list-style-type: none"> • Video conferencing • Social networking sites • Wikis • Blogs • Email <p>Reading: Have the student identify and comprehend a variety of literature from multicultural perspectives.</p> <p>Examples:</p> <ul style="list-style-type: none"> • using above examples • engage in multicultural “storytelling” across continents • create virtual “ multicultural school house” environment and pair-share reading variety of genres • etc. <p>Science: Participate in GLOBE (http://globe.gov/) data collection program of students, teachers and scientists working together to study and understand the global environment while also participating in the identification of individual, cultural and technological contributions to scientific knowledge.</p>

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Strand 3: Research and Information Literacy

This strand requires that students apply digital tools to gather, evaluate, and use information.

Concept 1: Planning

Plan strategies to guide inquiry using technology.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Predict the most effective keywords and phrases for use in information searches.</p>	<p>SC 08-S4C4-04 Compare the symbiotic and competitive relationships in organisms within an ecosystem (e.g., lichen, mistletoe/tree, clownfish/sea anemone, native/non-native species).</p> <p>Writing 08-S3C6 Research writing is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product</p>	<p>Explanation: Students will brainstorm keywords for a search and determine the most appropriate keywords for obtaining the best results.</p> <p>Science: Look up information in order to compare symbiotic and competitive relationships in organisms using a key word search and narrowing website resources down to the two best, most reliable sources.</p> <p>Look up information in order to understand the carrying capacity and limiting factors of living organisms within the students community/environment</p> <ul style="list-style-type: none"> • Web Resources: <ul style="list-style-type: none"> ○ CyberSmart ○ Lesson below found at: <ul style="list-style-type: none"> ▪ http://cybersmartcurriculum.org/lessonsbygrade/6-8/ <ul style="list-style-type: none"> • “Smart Keyword Searching”
<p>PO 2. Determine which information source will provide the desired data.</p>	<p>Reading 08-S1C5-01 Read from a variety of genres with accuracy, automaticity (immediate recognition), and prosody (expression).</p> <p>SC 08-S4C4-06 Describe the following factors that allow for the survival of living organisms:</p> <ul style="list-style-type: none"> • protective coloration • beak design • seed dispersal 	<p>Explanation: Students will compare search results to determine which information source provides the ideal results for the situation.</p> <p>Example:</p> <ul style="list-style-type: none"> • Looking at various search results, deciding which website is valid to obtain information from. • Finding factual information from multiple sites to ensure validity.

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	<ul style="list-style-type: none"> • pollination <p>SS 08-S2C1-02 Interpret historical data displayed in graphs, tables, and charts.</p>	<ul style="list-style-type: none"> • Web Resources: <ul style="list-style-type: none"> ○ CyberSmart ○ All lessons below found at: ○ http://cybersmartcurriculum.org/lessonsbygrade/6-8/ <ul style="list-style-type: none"> ▪ “Identifying High-Quality Sites” ▪ “Making Search Decisions” ▪ “Investigating Search Engines and Directories” <p>Reading: The student can read from a variety of searched documents headings with accuracy and immediately recognize information viability. Examples:</p> <ul style="list-style-type: none"> • practice search queries to determine broad and narrow ranges of information <p>Science:</p> <p>Develop criteria as a class to determine which internet source has the most desired data about factors related to population growth such as, invasion of non-invasive species in community.</p> <p>Develop criteria in teams to determine and share with class the Internet source(s) that have the most verifiable data about factors that allow for the survival of living organisms such as, protective coloration, beak design, seed dispersal and pollination.</p>

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Strand 3: Research and Information Literacy

Concept 2: Processing

Locate, organize, analyze, evaluate, synthesize and ethically use information from a variety of sources and media.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Locate and synthesize information utilizing advanced search strategies.</p>	<p>Reading 08-S1C5-01 Read from a variety of genres with accuracy, automaticity (immediate recognition), and prosody (expression).</p> <p>SS 08-S2C1-02 Interpret historical data displayed in graphs, tables, and charts.</p>	<p>Explanation: Students are able to find information with advanced search strategies.</p> <p>Example:</p> <ul style="list-style-type: none"> • Conduct a search using Boolean logic, such as putting specific words in quotation marks to find the exact phrases in search results. • Conduct a search using advanced search options found when clicking “advanced” on a search engine start page or using the terms “and”, “or” or “not”. Use Search Wizard to learn how to create an effective search using advanced tools at http://21cif.com/tools/locate/ • Students can practice search strategies at http://21cif.com/tools/locate/ • Web Resources: <ul style="list-style-type: none"> ○ Tutorials and resources for Boolean logic <ul style="list-style-type: none"> ▪ http://www.internettutorials.net/boolean.asp ▪ http://www.sgps.psu.edu/foweb/lib/boolean_search/index.html ○ CyberSmart <ul style="list-style-type: none"> ▪ All lessons below found at: http://cybersmartcurriculum.org/lessonsbygrade/6-8/ • “Making Search Decisions” • “Identifying High-Quality Sites”

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<p>Reading: Have student read from a variety of searched document headings and with accuracy recognize information viability. Example:</p> <ul style="list-style-type: none"> • practice search queries to determine broad and narrow ranges of information
<p>PO 2. Evaluate and use authoritative primary and/or secondary sources.</p>	<p>Reading 08-S3C1-07 Differentiate between primary and secondary source material.</p> <p>SS 08-S1C1-05 Describe the relationship between a primary source document and a secondary source document.</p> <p>SS 08-S1C1-06 Determine the credibility and bias of primary and secondary sources.</p> <p>Reading 08-S3C1-03 Distinguish fact from opinion in expository text, providing supporting evidence from text.</p>	<p>Explanation: Students will use authoritative primary or secondary sources.</p> <ul style="list-style-type: none"> • Web Resources: • Primary Sources: <ul style="list-style-type: none"> ○ EyeWitness to History http://www.eyewitnesstohistory.com/ ○ NASA (for Space Exploration report) <ul style="list-style-type: none"> ▪ http://www.eyewitnesstohistory.com/ <p style="text-align: right;">Government sites: Dept of Health, DMV, Police Department http://www.azdhs.gov/</p> <p><u>Primary and Secondary Sources:</u></p> <p style="text-align: center;">PBS American Experience</p> <ul style="list-style-type: none"> ▪ http://www.pbs.org/wgbh/americanexperience/ <p>Reading: Can the student distinguish fact from opinion? Have the student evaluate and use authoritative sources in materials. Examples:</p> <ul style="list-style-type: none"> • Use the Internet to show a variety of expository text

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<p>including examples of fact vs. opinion or biases.</p> <ul style="list-style-type: none"> • Use the internet to distinguish between primary and secondary sources <p>Use advanced searches to locate information about relevant content studied and identify and evaluate two primary and two secondary sources.</p>
<p>PO 3. Evaluate between fact and opinion, bias, inaccurate and misleading information by consulting multiple sources.</p>	<p>Writing 08-S3C6 Research writing is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product</p> <p>SS 08-S1C1-06 Determine the credibility and bias of primary and secondary sources.</p> <p>Reading 08-S3C1-04 Identify the author's stated or implied purpose(s) for writing expository text.</p> <p>SC08-S1C3-05 Explain how evidence supports the validity and reliability of a conclusion.</p>	<p>Explanation: Students learn that the Web is full of both factual and inaccurate content, so they must carefully consult multiple sources to determine validity.</p> <p>Example:</p> <ul style="list-style-type: none"> • Research papers • Presentations or experimentation • Web Resources: <ul style="list-style-type: none"> ○ CyberSmart <ul style="list-style-type: none"> ▪ All lessons below found at: <ul style="list-style-type: none"> • http://cybersmartcurriculum.org/lessonsbygrade/6-8/ • “Making Search Decisions” • “Identifying High-Quality Sites” <p>Reading: The student can distinguish fact from opinion. Examples:</p> <ul style="list-style-type: none"> • Use the Internet to show a variety of expository text including examples of fact vs. opinion or biases. <p>Find an internet site that shows bias regarding the relationship between the position of the sun, moon and Earth such as the ‘Flat Earth Society’ or refuting evidence of changes in environment such as</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<p>global warming.</p> <p>Find an internet site that shows bias regarding the evidence that characteristics of organisms change over time.</p> <p>Analyze websites for evidence supporting the validity and reliability of a scientific conclusion.</p>
<p>PO 4. Synthesize research information to create new understanding.</p>	<p>Writing 08-S3C6 Research writing is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product</p> <p>SS 08-S1C1-07 Analyze cause and effect relationships between and among individuals and/or historical events.</p> <p>SC 08-S4 SC 08-S5</p>	<p>Explanation: Students will synthesize information and come to a new understanding.</p> <p>Example:</p> <ul style="list-style-type: none"> • Research papers • Presentations or experimentation <p>Science: Read peer reviewed scientific journals to develop new ideas about grade level content.</p>
<p>PO 5. Apply ethical use of information and media by respecting copyrights, intellectual property rights, using information and media responsibly, and citing resources appropriately.</p>	<p>Writing 08-S3C6 Research writing is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product (What does this have to do about ethically using information?)</p> <p>SS 08-S3C4-03 Discuss the character traits (e.g., respect, responsibility, fairness, involvement) that are important to the preservation and improvement of constitutional democracy in the United States</p> <p>Reading 08-S3C1-06 Locate appropriate print and electronic reference sources (e.g., encyclopedia, atlas, almanac, dictionary, thesaurus, periodical, CD-ROM, website) for a specific purpose.</p> <p>SC 08-S4 SC 08-S5</p>	<p>Explanation: Students will be able to research information and media ethically and not plagiarize. In particular, Middle school students need to learn how to use music legally.</p> <ul style="list-style-type: none"> • Web Resources: • CyberSmart • All lessons below found at: http://cybersmartcurriculum.org/lessonsbygrade/6-8/ • “Considering Copying” <ul style="list-style-type: none"> ○ “How to Cite a Site” ○ Online citation generator <ul style="list-style-type: none"> ▪ http://www.citationmachine.net ▪ http://www.easybib.com/ ○ Resource on Fair Use: Copyright Chaos <ul style="list-style-type: none"> ▪ http://www.slideshare.net/guestb9349a/intel-s-copyright-chaos

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<p>Reading: Have the student correctly gather and site electronic media resources.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Utilize online citation tools for all research and presentation to learn about proper citing of resources. • use online resources to teach copyright infringements, permissions <p>Science: Create technological projects while applying ethical use of information and media. Learn copyrighting policies and copyright an idea, digital image or video embedded in project.</p>

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Strand 4: Critical Thinking, Problem Solving, Decision Making

This strand requires students to use critical thinking, problem solving, and decision making to manage projects using digital tools and resources.

Concept 1: Investigation

Identify and define authentic problems and significant questions for investigation.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Write essential questions to investigate a topic or issue using digital tools and resources.</p>	<p>Reading 08-S1C6-03 Generate clarifying questions in order to comprehend text.</p> <p>Writing 08-S3C6 Research writing is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product</p> <p>SC08-S1C1 Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.</p> <p>SC08-S1C3 Analyze and interpret data to explain correlations and results; formulate new questions.</p> <p>SS 08-S2C1-01 Construct charts, graphs, and narratives using historical data.</p>	<p>Explanation: Students will be able to create an essential question using digital tools or resources.</p> <p>Example:</p> <ul style="list-style-type: none"> • Class wants to learn more about homelessness, after discussion class comes up with essential question; “Why are some people homeless?” <p>Reading: The student can employ multiple technology-based strategies to comprehend text. Examples:</p> <ul style="list-style-type: none"> • Highlight factual information in digital documents to formulate clarifying questions. • Use digital media to connect information and events from a story or text <p>Science: Write a researchable question answered through the use of digital tools (such as Google Docs - Forms) and analyze results using spreadsheets, tables and graphs.</p>

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Strand 4: Critical Thinking, Problem Solving, Decision Making

Concept 2: Exploring Solutions

Plan and manage activities to develop solutions to answer a question or complete a project.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Plan, conduct and manage research using appropriate digital resources to develop solutions for a question.</p>	<p>Writing 08-S3C6 Research writing is a process in which the writer identifies a topic or question to be answered. The writer locates and evaluates information about the topic or question, and then organizes, summarizes, and synthesizes the information into a finished product</p> <p>SS 08-S5C1-01 Explain how limited resources and unlimited human wants cause people to choose some things and give up others.</p> <p>SS 08-S3C4-03 Describe the importance of citizens being actively involved in the democratic process (i.e., voting, student government, involvement in political decision making, analyzing issues, petitioning public officials).</p> <p>Reading 08-S3C1 Identify, analyze, and apply knowledge of the purpose, structures, and elements of expository text.</p> <p>SC08-S1C1 Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.</p> <p>SC08-S1C3 Analyze and interpret data to explain correlations and results; formulate new questions.</p>	<p>Explanation: Students create essential question, research that essential question, and develop solutions using digital tools and resources.</p> <p>Example:</p> <ul style="list-style-type: none"> • Class wants to learn more about homelessness, after discussion class comes up with essential question; “Why are some people homeless?” • Students research the issue of homelessness, determine possible solutions, and find local agencies that are working for solutions. • Students are studying any topic in Social Studies class either modern or historical which they find credible information from online resource. <p>Reading: The student can use technological skills required to understand a wide array of informational text and gather research.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Use online organization models to collect data, facts, resources, etc. • Use Persuasion Map tool http://www.readwritethink.org/files/resources/interactives/persuasion_map/ <p>Science: Students plan, conduct and manage research to develop solutions that answer a question about people’s understanding of a local environmental concern: such as recycling, invasive species eradication, or wildlife corridor issues.</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 2. Present defensible solutions and make decisions from multiple perspectives using collected resources and data.</p>	<p>Writing 08-S3C4 Persuasive writing is used for the purpose of influencing the reader. The author presents an issue and expresses an opinion in order to convince an audience to agree with the opinion or to take a particular action.</p> <p>SC08-S1C1 Formulate predictions, questions, or hypotheses based on observations. Locate appropriate resources.</p> <p>SC08-S1C3 Analyze and interpret data to explain correlations and results; formulate new questions.</p> <p>SC 08-S1C4 Communicate results of investigations.</p>	<p>Explanation: Students create essential question, research multiple perspectives, develop a solution, present to class their specific idea. Example:</p> <ul style="list-style-type: none"> • Class wants to learn more about homelessness, after discussion class comes up with essential question; “Why are some people homeless?” • Students research the issue of homelessness, exploring multiple perspectives on the issue. Students determine possible solutions, exploring various agencies that are working for solutions. Students develop a specific solution and present this to the class or peers or global community, depending on the situation. <p>Science: Students present and make decisions based on researching people’s understanding of a local environmental concern: such as recycling, invasive species eradication, or wildlife corridor issues.</p> <ul style="list-style-type: none"> • Web Resources: <ul style="list-style-type: none"> ○ CyberSmart <ul style="list-style-type: none"> ▪ All lessons below found at: <ul style="list-style-type: none"> • http://cybersmartcurriculum.org/lessonsbygrade/6-8/ <ul style="list-style-type: none"> ○ “Online @ the Library” ○ “Using Real Time Data” ○ “Identifying High-Quality Sites”

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Strand 5: Digital Citizenship

This strand requires students to understand human, cultural, and societal issues related to technology practice and ethical behavior.

Concept 1: Safety and Ethics

Advocate and practice safe, legal, and responsible use of information and technology.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Assess situations in which it is appropriate and safe to use a personal digital device in the home, school, community, and in the work place.</p>	<p>SS 08-S3C4-02 Discuss the character traits (e.g., respect, responsibility, fairness, involvement) that are important to the preservation and improvement of constitutional democracy in the United States</p>	<p>Explanation: Students will know how, when and where a personal digital device (Cell phone, PDA, iPod, etc) should be used</p> <p>Example:</p> <ul style="list-style-type: none"> • Students create situations and explain how, when, and where it would be appropriate or inappropriate to use a personal digital device. <p>Reading: When online, the student can determine the intended effect of persuasive strategies and propaganda techniques (e.g., bandwagon, peer pressure, repetition, testimonial, transfer, loaded words) in order to make informed, appropriate choices.</p> <p>Examples:</p> <ul style="list-style-type: none"> • Use media examples to demonstrate peer pressure, propaganda techniques. <p>Science: Students will extend the way they think of using common technological tools by using phones, iPods and laptops in ways that don't detract from, but add to engagement in classroom activities.</p>
<p>PO 2. Describe strategies to deal with cyber-bullying situations.</p>	<p>SS 08-S3C4-02 Discuss the character traits (e.g., respect, responsibility, fairness, involvement) that are important to the preservation and improvement of constitutional democracy in the United States</p>	<p>Explanation: Students explore what cyberbullying is and how best to deal with it.</p> <p>Example:</p> <ul style="list-style-type: none"> • Online resources http://www.stopbullyingnow.hrsa.gov/kids/, http://www.stopcyberbullying.org/tweens/are_you_a_cyberbully.html.

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<ul style="list-style-type: none"> • http://www.media-awareness.ca/english/resources/educational/lessons/secondary/cyberbullying/cyberbullying_virtual.cfm • http://cybersmartcurriculum.org/cyberbullying/lessons/6-8/cyberbullying_not_a_pretty_picture/ • http://cybersmartcurriculum.org/cyberbullying/lessons/6-8/cyberbullying_who_me_why_should_i_care/ • http://cybersmartcurriculum.org/cyberbullying/lessons/6-8/cyberbullying_crossing_the_line/ • http://cybersmartcurriculum.org/cyberbullying/lessons/6-8/dealing_with_cyberbullying/ • Local law enforcement agencies • School policies • Web Resources <ul style="list-style-type: none"> ○ Cyberbullying <ul style="list-style-type: none"> ▪ Cyber Smart ▪ All lessons below found at: <ul style="list-style-type: none"> • http://cybersmartcurriculum.org/lessonsbygrade/6-8/ <ul style="list-style-type: none"> ○ “Cyberbullying: Not a Pretty Picture” ○ “Cyberbullying: Who, Me? Why Should I Care?” ○ “Dealing with Cyberbullying” ○ “Cyberbullying: Crossing the Line” <p>Reading: Example:</p> <ul style="list-style-type: none"> • Understand the negative impact of inappropriate technology use, including, but not limited to, computer online bullying

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Performance Objectives	Curriculum Connections	Explanations and Examples
		and harassment, hacking, computer piracy, intentional virus setting, and invasion of privacy.
<p>PO 3. Articulate and practice the school and district rules governing the use of digital tools as defined by school board policy and procedures.</p>	<p>SS 08-S3C4-02 Discuss the character traits (e.g., respect, responsibility, fairness, involvement) that are important to the preservation and improvement of constitutional democracy in the United States</p> <p>Reading 08-S3C2-03</p> <p>Interpret details from a variety of functional text (e.g., warranties, product information, technical manuals, instructional manuals, consumer safety publications) for a specific purpose (e.g., to follow directions, to solve problems, to perform procedures, to answer questions).</p>	<p>Explanation: Students list or state and follow all rules decided by the school.</p> <p>Example:</p> <ul style="list-style-type: none"> • Review and sign acceptable use policy • Web Resources <ul style="list-style-type: none"> ○ Cyber Smart <ul style="list-style-type: none"> ▪ All lessons below found at: <ul style="list-style-type: none"> • http://cybersmartcurriculum.org/lessonsbygrade/6-8/ • “Power and Responsibility” <p>Reading: The student practices safe, responsible, legal, and ethical behavior while using technology tools and resources. The student is expected to:</p> <ul style="list-style-type: none"> ○ Understand copyright ownership laws/issues including current laws, fair use guidelines, creative commons, open source, and public domain;
<p>PO 4. Demonstrate safe online communication practices regarding personal information.</p>	<p>SS 08-S3C4-02 Discuss the character traits (e.g., respect, responsibility, fairness, involvement) that are important to the preservation and improvement of constitutional democracy in the United States</p>	<p>Explanation: Students describe appropriate information to share online, knowing they should never share private information to a person they have met in cyberspace.</p> <p>Science: Students will follow district and Federal regulations regarding communicating about their learning without releasing personal information when completing digital projects.</p> <p>Example:</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<ul style="list-style-type: none"> • Never give home address • Don't give personal information online • Ask parent or guardian for permission to talk in a chatroom • Web Resources: <ul style="list-style-type: none"> ○ CyberSmart <ul style="list-style-type: none"> ▪ All lessons below found at: <ul style="list-style-type: none"> • http://cybersmartcurriculum.org/lessonsbygrade/6-8/ <ul style="list-style-type: none"> ○ "Private and Personal Information" ○ "Savvy Online Talk and Messaging" ○ "Smart, Safe, and Secure" ○ Profile Publisher - http://www.readwritethink.org/parent-afterschool-resources/games-tools/profile-publisher-a-30243.html
<p>PO 5. Analyze and compare various aspects of e-commerce.</p>	<p>Writing 08-S2C2 Organization addresses the structure of the writing and integrates the central meaning and patterns that hold the piece together.</p>	<p>Explanation: Students explore various e-commerce websites to analyze and compare various aspects of e-commerce. Examples:</p> <ul style="list-style-type: none"> • Finding a product online and comparing prices, considering shipping charges. • Designing a dream house and shopping for furnishings online • Buy a car for a cross-country trip that is economical and fuel-efficient. • Online Marketing to Kids: Strategies and Techniques - http://www.media-awareness.ca/english/resources/educational/lessons/secondary/internet/online_kids_strategies.cfm

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<ul style="list-style-type: none"> How e-commerce influences consumer choice - http://www.econedlink.org/lessons/index.php?lid=559&type=educator
<p>PO 6. Exhibit legal and ethical behavior when using technology.</p>	<p>Reading 08-S3C1-09 Apply knowledge of organizational structures (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order) of expository text to aid comprehension.</p>	<p>Explanation: Students learn guidelines to show responsible use of technology including ethics in file sharing, email etiquette, and copyright laws.</p> <p>Example:</p> <ul style="list-style-type: none"> Review fair use guidelines Understand the difference between legal (copyright) infringement and ethical (plagiarism) behavior http://www.readwritethink.org/classroom-resources/lesson-plans/exploring-plagiarism-copyright-paraphrasing-1062.html <p>Reading: The student can draw valid conclusions about expository text, supported by text evidence. Examples:</p> <ul style="list-style-type: none"> Use Internet resources to demonstrate legal and ethical behavior Describe when and where you can use copyrighted music and how to find public domain music. Use media to demonstrate viewpoints and gather points for discussions. <ul style="list-style-type: none"> Web Resources <ul style="list-style-type: none"> CyberSmart http://cybersmartcurriculum.org/lessonsbygrade/6-8/ <ul style="list-style-type: none"> “Good Messaging Manners”

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Strand 5: Digital Citizenship

Concept 2: Leadership for Digital Citizenship

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Promote digital citizenship by consistently leading by example and advocating social and civic responsibility to others.</p>	<p>Reading 08-S3C1-09 Apply knowledge of organizational structures (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order) of expository text to aid comprehension.</p>	<p>Explanation: The student practices safe and appropriate online behavior, being socially and civilly responsible demonstrating by leading by example. Example:</p> <ul style="list-style-type: none"> • actively engaging in online communities with civic competence • peer mentoring on appropriate digital citizenship • students demonstrate leadership and self-monitoring. <p>Science: Promote digital citizenship by incorporating computational devices such as timers, temperature, pH, motion sensor, force sensor, etc. probes in the science classroom by using the devices appropriately.</p>

Strand 5: Digital Citizenship

Concept 3: Impact of Technology

Develop an understanding of the cultural, historical, economic and political impact of technology on individuals and society.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Analyze current economic, environmental, health, political, scientific, or social problems that have technological solutions and propose potential solutions for the problems.</p>	<p>Writing 08-S3C2 Expository writing includes nonfiction writing that describes, explains, informs, or summarizes ideas and content. The writing supports a thesis based on research, observation, and/or experience.</p> <p>Reading 08-S3 Comprehending Informational Text delineates specific and unique skills that are required to understand the wide array of informational</p>	<p>Explanation: Students will examine a new technology and investigate and evaluate the advantages and problems of using this technology for the short and long term.</p> <p>Example:</p> <ul style="list-style-type: none"> • Students can study the impact of E-waste on environment

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Performance Objectives	Curriculum Connections	Explanations and Examples
	<p>text that is a part of our day-to-day experiences.</p> <p>SC 08-S3C2 Develop viable solutions to a need or problem.</p>	<p>and come up with solutions for alternative methods of recycling. Starting with where E-Waste from America is usually sent, examine how other countries recycle it and what can the student do to come up with a solution locally with E-Waste.</p> <p>Reading: The student will demonstrate they can synthesize multiple elements of technology and use that information for the purpose of large scale problem solving. Examples:</p> <ul style="list-style-type: none"> • Online research and comparative data collection • use of simulation tools to look at outcomes <p>Science: Students will identify a technology related to grade 7 content, which could lead to undesirable results.</p> <p>Students can compare risks and benefits to technological advances such as, radiation treatments, genetic engineering, transgenic plants and airbags.</p>

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Strand 6: Technology Operations and Concepts

This strand requires students to demonstrate a sound understanding of technology concepts, systems, and operations.

Concept 1: Understanding

Recognize, define and use technology term, processes, systems and applications.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Explain how systems are integrated detailing input, output, and network devices.</p>	<p>Reading 08-S1C4-05 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, and parts of speech of words, by using a variety of reference aids, including dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.</p> <p>SC 08-S4 SC 08-S5</p>	<p>Explanation: Students describe and use network terms such as WAN, LAN, cloud, wireless, bandwidth, broadband, etc,</p> <p>Example:</p> <ul style="list-style-type: none"> • setting up a file sharing folder from one system to another <p>Reading: the student uses technological vocabulary in relevant contexts. Examples:</p> <ul style="list-style-type: none"> • Identify and use terminology relevant to technological use such as WAN, LAN, cloud, wireless, bandwidth, broadband, etc, I don't feel like these were the words they were looking for. <p>Science: Use technology processes, systems and applications in learning. For example, as students build websites and pages, they can practice processes and skills related to the use of technology.</p>
<p>PO 2. Define and apply knowledge of various technical process terms.</p>	<p>Reading 08-S1C4-05 Identify the meanings, pronunciations, syllabication, synonyms, antonyms, and parts of speech of words, by using a variety of reference aids, including dictionaries, thesauri, glossaries, and CD-ROM and the Internet when available.</p> <p>SC 08-S4 SC 08-S5</p>	<p>Explanation: Students demonstrate knowledge of how to download, copy, paste, etc. Example:</p> <ul style="list-style-type: none"> • Students create a document, spreadsheet and presentation, saving it into a specific folder that they create. <p>Reading: the student uses technological vocabulary in relevant contexts. Examples:</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<ul style="list-style-type: none"> • Identify and use terminology relevant to technological use (copy, paste, file, download, etc.) <p>Science: Students should apply technological terms to their content projects.</p>
<p>PO 3. Choose technology applications appropriate for the audience and task.</p>	<p>Reading 08-S1C6-05 Connect information and events in text to experience and to related text and sources.</p>	<p>Explanation: Students will create presentations, spreadsheets or documents for specific audience and task Example:</p> <ul style="list-style-type: none"> • Students think about all of the applications (Word processing, PowerPoint, Moviemaker, iMovie, Spreadsheet, Publisher, etc.) and online tools (blog, wiki, podcast, etc) they are familiar with and determine the most effective application for the audience and task. <p>Reading: Have the student use strategies to demonstrate technological comprehension and use for the right application. Examples:</p> <ul style="list-style-type: none"> • teacher guided practice of what to use when <ul style="list-style-type: none"> ○ data collection (excel) ○ writing (word processing) ○ compare contrast (diagramming) ○ etc. <p>Students shall distinguish from applications that will not efficiently help them to complete their task</p>
<p>PO 4. Recognize and demonstrate ergonomically safe and sound use of equipment.</p>	<p>Workplace Skills Standard 7</p>	<p>Explanation: Students demonstrate proper keyboarding use by using a QWERTY keyboard and will sit straight, with feet flat and hands on home row position Example:</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<ul style="list-style-type: none"> When students are creating a document, be sure that their fingers are on home row position ASDF and JKL.
<p>Grade 7 – PO 5. Identify physical risks of using digital technology.</p> <p>Grade 8 – PO 5. Analyze and evaluate physical risks of using digital technology.</p>	<p>Workplace Skills Standard 7</p>	<p>Explanation: Students will identify and analyze physical risks of using digital technology.</p> <p>Example: Cell phone use</p>

Strand 6: Technology Operations and Concepts

Concept 2: Application

Select and use applications effectively and productively.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Demonstrate speed and accuracy with appropriate data entry tools with at least 30 wpm and 80% accuracy.</p>	<p>Reading 08-S1C5-01 Read from a variety of genres with accuracy, automaticity (immediate recognition), and prosody (expression).</p> <p>SS 08-S1C1-01 Construct charts, graphs, and narratives using historical data.</p>	<p>Explanation: Students will take an online or program based keyboarding test that measures Words Per Minute (WPM) with mistakes per minute measured.</p> <p>Example:</p> <ul style="list-style-type: none"> Students can measure their typing speed and accuracy using online resource such as www.powertyping.com, TuxType (http://tux4kids.aliioth.debian.org/tuxtype/index.php) or other online resources. Typing programs such as Type To Learn 3 may also be used to improve and test typing speed/accuracy. <p>Reading: students produce digital documents with fluency.</p> <p>Example:</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<ul style="list-style-type: none"> • WPM • keyboarding • spell check/thesaurus use
<p>PO 2. Compose a multiple section document using advanced formatting.</p>	<p>Writing 08-S1C5 Publishing includes formatting and presenting a final product for the intended audience.</p> <p>Reading 08-S3C2-03 Interpret details from a variety of functional text (e.g., warranties, product information, technical manuals, instructional manuals, consumer safety publications) for a specific purpose (e.g., to follow directions, to solve problems, to perform procedures, to answer questions).</p>	<p>Explanation: Students compose a document such as a friendly letter or business letter with proper advanced formatting. Example:</p> <ul style="list-style-type: none"> • Students write a friendly letter to a parent, teacher or friend and follow proper editing and formatting techniques. Adding pictures with wrap text feature for formatting is an advanced formatting technique. • Using features from the toolbars such as standard and formatting features that allow font type, page alignment and spacing are important features for formatting. Including tables, charts and graphs also exhibits advanced formatting techniques. <p>Reading: the student can apply knowledge of technology in order to format/compose a usable document over multiple platforms. Examples:</p> <ul style="list-style-type: none"> • Create a video format • Create a picture file • Demonstrate digital typography standards such as page layout, font formatting, paragraph formatting, and list attributes <p>Science: Students can practice applying the skills in this concept (POs 1-7), while completing digital projects in the science classroom.</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 3. Apply formatting features while using spreadsheet programs to customize tables, charts, and graphs.</p>	<p>M 08-S1C1-03 Compare and order rational numbers using various models and representations.</p>	<p>Explanation: Students will use a spreadsheet program and enter labels, numbers and formulas and have the program execute the formulas.</p> <p>Example:</p> <ul style="list-style-type: none"> • Students track weather from a city of their choice from www.weather.com for five days and record their findings in a spreadsheet. Selecting the data and graphing using the chart wizard feature will produce a simple bar graph of weather temperature and days.
<p>PO 4. Create a simple database for a content area.</p>	<p>Reading 08-S3C1-09 Apply knowledge of organizational structures (e.g., chronological order, comparison and contrast, cause and effect relationships, logical order) of expository text to aid comprehension.</p>	<p>Explanation: Students will use database software to organize large amounts of data by sorting the data and using filters</p> <p>Example: Students should be able to define and understand parts of a database including:</p> <ul style="list-style-type: none"> • Field • Record • Entry • Ascending Order • Descending Order • Filter • Charts <p>Using a database management system such as Access or online database like Ebsco or CultureGrams students can organize and view data in many different ways.</p> <p>Reading: The student can demonstrate effective file management strategies such as naming conventions, location, backup, hierarchy, folder structure, and file conversion.</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 5. Create and edit visual and audio material to generate a stand-alone multimedia product.</p>	<p>Writing 08-S2C6 Conventions addresses the mechanics of writing, including capitalization, punctuation, spelling, grammar and usage, and paragraph breaks.</p>	<p>Explanation: Students can use multimedia programs available locally or web based to create innovative movies or podcasts and integrate audio, video and pictures. Examples:</p> <ul style="list-style-type: none"> • GarageBand-Podcast/Vodcast • Audacity • iMovie • iPhoto • Movie Maker • www.voicethread.com
<p>PO 6. Identify criteria for evaluating technical and design qualities of a web site and then create web-based content from the identified criteria.</p>	<p>Writing 08-S2C6 Conventions addresses the mechanics of writing, including capitalization, punctuation, spelling, grammar and usage, and paragraph breaks.</p>	<p>Explanation: Students can evaluate other websites, wikis or blogs and critique the qualities of the sites. Using a free online hosting site for a blog or wiki, the students can then create their own Wiki or Blog. Examples:</p> <ul style="list-style-type: none"> • Blogger.com • Wordpress.com • Wikispaces.com • Students will gather Web-based resources and determine criteria for characteristics of effective Web resources http://www.readwritethink.org/classroom-resources/lesson-plans/inquiry-internet-evaluating-pages-328.html
<p>PO 7. Identify and use network protocols for moving files and secure web access.</p>	<p>Reading 08-S3C1-05 Locate specific information by using organizational features (e.g., table of contents, headings, captions, bold print, italics, glossaries, indices, key/guide words, topic sentences, concluding sentences, end notes, footnotes, bibliographic references) in expository text.</p>	<p>Explanation: Students will demonstrate proper file storage capabilities using a removable storage device and disconnect it properly by safely stopping the connection. Also, students list and demonstrate how to move files on the Internet using network protocols such as ftp, secure network (https), etc. Examples:</p>

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<ul style="list-style-type: none"> • Flash Drive/Thumb Drive saving/removing (some Districts ban these because of virus issues) • Save to an External Hard Drive • Save to local server <p>Reading: Example: The student can move and retrieve files and folder created in class for projects.</p>

Strand 6: Technology Operations and Concepts

Concept 3: Troubleshoot Systems and Processes

Define problems and investigates solutions in systems and processes.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Generate and apply solutions to troubleshoot hardware and software issues and problems.</p>	<p>Reading 08-S3C2-03 Interpret details from a variety of functional text (e.g., warranties, product information, technical manuals, instructional manuals, consumer safety publications) for a specific purpose (e.g., to follow directions, to solve problems, to perform procedures, to answer questions).</p>	<p>Explanation: Students learn how to troubleshoot computer problems.</p> <p>Example:</p> <ul style="list-style-type: none"> • Using recycled desktop computers, have students disassemble and reassemble computers into working order. Loading an operating system and drivers for the system are typical software solutions for errors. • Example problems where troubleshooting is needed: <ul style="list-style-type: none"> ○ File management problem (lost a file or document) ○ Receiving error or information messages ○ Connectivity problems (Internet or network) ○ Printing problem (document not printing)

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<p>Reading:</p> <ul style="list-style-type: none"> • The student can read instructional manuals for the purpose of troubleshooting technological problems. • Examples: <ul style="list-style-type: none"> • Use technology manuals of various tools (camera, iPad, computer, software) to determine the order of sequence to solve issues. • Understand troubleshooting techniques such as accessing the command prompt, restarting systems, checking power issues, resolving software compatibility, verifying network connectivity, and modifying display properties. <p>Science: Students can practice applying the skills in this concept while completing digital projects in the science classroom.</p>

Strand 6: Technology Operations and Concepts

Concept 4: Transfer of Knowledge

Transfer current knowledge to learning of new technologies.

Performance Objectives	Curriculum Connections	Explanations and Examples
<p>PO 1. Transfer understanding of current technologies to new and novel learning situations.</p>	<p>Reading 08-S2C1-06 Locate appropriate print and electronic reference sources (e.g., encyclopedia, atlas, almanac, dictionary, thesaurus, periodical, CD-ROM, website) for a specific purpose.</p>	<p>Explanation: Students use abilities and knowledge from one program and display competence in knowledge and use it with new technologies.</p> <p>Example:</p> <ul style="list-style-type: none"> • Students who can use drawing tools in a document program (Microsoft Word), take this knowledge and expand it when using a new 3-D imaging program (Google Sketch-up). • Students must apply basic operations of hardware and software processes to a new Operating System such as Linux and find version to run on specific computer while using

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Performance Objectives	Curriculum Connections	Explanations and Examples
		<p>Open Source Software to load onto the new OS.</p> <p>Reading: the student can create new materials from literary text. Examples:</p> <ul style="list-style-type: none"> • read literary materials and create an online version for student with limited English proficiency; include activities • Recreate the characters in a novel using graphics generators and put the characters in a new setting to tell the same story. <p>Science: Students can practice applying the skills in this concept while completing digital projects in the science classroom. (Example: take inserting steps for videos used when building a Google site and use to insert graphs and pictures as well).</p>