Grade, Subject: 3, Library/Technology	
Unit Name: General Library Skills	___X__ Essential _____ Important _____ Compact
Big Idea: Learners make meaning for themselves and others by collecting, organizing, and sharing resources for personal relevance.	Length/Duration of Unit: 10 Class Periods
PA Content Standards: **AASL Standards Framework for Learners** ***Learners engage with new new knowledge by following a process that includes:*** **I.B.2:** Devising and implementing a plan to fill in knowledge gaps. ***Learners participate in an ongoing inquiry-based process by:*** **I.D.1** Continually seeking knowledge. **I.D.3:** Enacting new understandings through real-world connections ***Learners gather information appropriate to the task by:*** **IV.A.1**: Determining the need to gather information **IV.A.2:** Identifying possible sources of information. **IV.B.1**: Seeking a variety of sources. **IV.B.2**:Collecting information representing diverse perspectives. ***Learners develop and satisfy personal curiosity by:*** **V.A.1:** Reading widely and deeply in multiple formats and write and create for a variety of purposes. **V.A.2**: Reflecting and questioning assumptions and possible misconceptions. **V.A.3:** Engaging in inquiry-based processes for personal growth.	**PA Core Standards:** **CC.1.2. Reading Informational Texts** **CC.1.2.3.A** Determine the main idea of a text; recount the key details and explain how they support the main idea. **CC.1.2.3.B** Ask and answer questions about the text and make inferences from text; refer to text to support responses. **CC.1.2.3.G** Use information gained from text features to demonstrate understanding of a text. **CC.1.3 Reading Literature** **CC.1.3.3.A** Determine the central message, lesson, or moral in literary text; explain how it is conveyed in text. **CC.1.3.3.B** Ask and answer questions about the text and make inferences from text; refer to text to support responses. **CC.1.3.3.C** Describe characters in a story and explain how their actions contribute to the sequence of events. **CC.1.5 Speaking and Listening** **CC.1.5.3.A** Engage effectively in a range of collaborative discussions on grade-level topics and texts, building on others' ideas and expressing their own clearly. **CC.1.5.3.E** Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.
Essential Questions: What features of a book help you locate and decide to read that book? What are the elements of a story and how do they help the learner	**Understandings (SWKT…):** ● Libraries use online catalogs to share what materials are available to users both in a library and for digital media.

construct meaning from text? How do learners develop and satisfy personal curiosity? How do learners read widely and deeply in multiple formats and create for a variety of purposes?	● Libraries have systems to organize books for users to find materials quickly. ● Nonfiction books are often organized using the Dewey Decimal System ● Fiction books can be organized by author's last name and also by type of fiction (graphic novel, chapter book, picture books)
Knowledge: ● There are a variety of ways to gain information. ● There are many types of reading materials for personal enjoyment. ● People may use an online catalog to find materials that would meet their interests/needs. ● Libraries are places where lifelong learning takes place. ● Libraries organize materials in ways that help people efficiently find what they are looking for. ● Reading for pleasure or for information can have a positive effect on a learner.	**Skills (SWBAT…):** ● Use various nonfiction print and digital reference sources with support. ● Locate fiction texts using a library catalog with support ● Select appropriate books for recreational reading and personal enjoyment ● With support and guidance, conduct searches that differentiate between title, author, subject, series, and keyword searches. ● Begin to understand how the call number/spine label relates to the type of book and its placement in the library. ● With support, select and read independently grade level appropriate literary fiction in a variety of genres and formats ● Describe how personal interests and abilities impact lifelong learning.
Vocabulary: **OPAC - Online Public Access Catalog** **Catalog -** A listing of all the materials a library owns. **Nonfiction-** A type of book that gives facts and information about a topic **Fiction-** works of literature that are not true stories. **Graphic Novel:** a work of fiction or non-fiction that is presented in comic-strip format and published as a book **Dewey Decimal System:** a way to put books in order by subject. It is often used in public libraries and schools in the United States **Keyword searching:** A type of search for when a user does not know the exact title of a book or is unsure of best subject terms for searching **Subject searching**: A type of search for when a user knows what topic they want to learn about **Series Searching**: A type of search for when the user knows the series that the book is a part of, but may not know the exact title or author(s) of the book **Call Number -** A combination of letters and numbers assigned to all books and to most other items in the library that gives the location of the materials on the library shelves.	**Resources:** ● **Destiny (EASD Online Catalog)** ● **Library Book Collection**

Definition Sources: *Merriam-Webster for Kids* and teacher created	

Assessments:

Student Performance: guided practice using the Destiny catalog to search in a variety of ways: subject search vs. keyword search, title search, author search
Student Performance: cooperatively locating fiction sections of the library using the call numbers obtained through Destiny subject searches with teacher support
Student Performance: Response projects connected to class read-alouds

Grade, Subject: 3, Library/Technology	
Unit Name: Information Technologies	__X__ Essential _____ Important _____ Compact
Big Idea(s): Students will use technology to communicate effectively. Students will understand how technology impacts our everyday lives.	**Length/Duration of Unit**: 18 class periods

PA Content Standards:

Grades 3–5: Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic (STEELS) Standards
3.5.3-5.A: Use appropriate symbols, numbers, and words to communicate key ideas about technological products and systems.
3.5.3-5.B: Examine information to assess the trade-offs to using a product or system.
3.5.3-5.C: Follow directions to complete a technological task.
3.5.3-5.D: Predict how certain aspects of their daily lives would be different without given technologies.
3.5.3-5.G: Describe the helpful and harmful effects of technology.
3.5.3-5.H: Determine factors that influence changes in a society's technological systems or infrastructure.
3.5.3-5.I: Design solutions by safely using tools, materials, and skills.
3.5.3-5.J: Explain how technologies are developed or adapted when individual or societal needs and wants change.
3.5.3-5.K: Judge technologies to determine the best one to use to complete a given task or meet a need.
3.5.3-5.L: Demonstrate how tools and machines extend human capabilities, such as holding, lifting, carrying, fastening, separating, and computing.
3.5.3-5.T: Apply universal principles and elements of design.
3.5.3-5.Y: Identify the resources needed to get a technical job done, such as people, materials, capital, tools, machines, knowledge, energy, and time.
3.5.3-5.AA: Create representations of the tools people made, how they cultivated to provide food, made clothing, and built shelters to protect themselves.

Business, Computer and Information Technology
Standard Area - 15.3: Communication

15.3.5.A: Create work product with a variety of formats including note taking, outlines, essays, correspondence, journals and presentations. Reference English Language Arts CC.1.4.2.T, CC.1.4.5.F, CC.1.4.5.L, CC.1.4.5.R
15.3.5.G: Prepare appropriate information for impromptu and planned presentations. Reference English Language Arts CC.1.5.2.D
15.3.5.H: Present information as an individual or in a small group. Reference English Language Arts CC.1.5.5.A, CC.1.5.5.C, CC.1.5.5.D, CC.1.5.5.E
15.3.5.M: Apply proper etiquette when using technology.
15.3.5.N: Apply appropriate work ethic in the classroom.
15.3.5.O: Discuss appropriate communication skills within organizations.
15.3.5.Q: Identify communication channels at school, home, and social events.
15.3.5.S: Explain electronic communication (e.g., formal vs. informal, time constraints, geographic location) based on the intended message.
15.3.5.V: Identify mobile communications used in various settings.

15.4: Computer and Information Technologies
15.4.5.A: Identify emerging technologies used for educational and personal success.
15.4.5.B: Identify and demonstrate understanding of ethical, safe, and social online behavior and potential consequences of unethical, unsafe, and inappropriate behavior.
15.4.5.C: Describe the purpose, use, and care of peripheral devices of computer systems including input, processing, storage, and output devices.
15.4.5.D: Demonstrate the ergonomically correct use of more sophisticated input technologies.
15.4.5.G: Create a digital project using appropriate software/application for an authentic task.
15.4.5.K: Use digital media to enhance a content-specific work product.
15.4.5.M: Discuss the impact of emerging technologies on a variety of careers.

PA Core Standards:

CC.1.2.5.G Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently
CC.1.4.5.U With some guidance and support, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting
CC.1.5.5.D Report on a topic or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly with adequate volume, appropriate pacing, and clear pronunciation.

Career Education and Work Standards:
13.2. Career Acquisition (Getting a Job)
13.2.5. GRADE 5
E. Apply to daily activities, the essential workplace skills, such as, but not limited to:

- Commitment
- Communication

- Dependability
- Health/safety
- Personal initiative
- Scheduling/time management
- Team building
- Technical literacy
- Technology

Essential Questions:	**UNDERSTAND (principles/generalizations)**
● What is the relationship between technology and society? ● How has technology both created and solved problems? ● How do you select the best technology for a given situation? ● How can technology be used to communicate? ● What makes an effective design?	● Students will understand that technology influences society and society influences technology. ● Students will understand that technology can have both helpful and harmful effects. ● Students will understand that there are trade-offs when assessing and using technology. ● Students will understand that there are many ways technology can be used to communicate. ● Students will understand that applying elements of design to visual communication makes it more aesthetically pleasing and effective.
KNOW (facts):	**DO (skills, processes; students will be able to…):**
● Students will know that technology influences society and society influences technology. ● Students will know how to select and use the most suitable applications for communicating and/or creating products that serve a specific purpose. ● Students will know how to apply design principles to projects.	● Students will select and use applications as tools to communicate or create products that serve a specific purpose. ● Students will apply design principles to create effective designs.

Vocabulary/Definitions:

General Computer Technology Terms:

- app / application - a program or software designed for a particular purpose
- cursor - this a blinking line that appears when you are able to type that shows where the user is working and where the next letter or number will display
- formatting - changing the appearance of text
- emphasis - making a part of a design different so that it catches the viewer's attention
- color contrast - how much one color stands out from another color
- shortcut keys - a key or a combination of keys used to quickly perform a task
- undo - cancel or reverse the previous action or actions
- cut - removing something from a document with the intention of pasting it somewhere else.
- copy - making a copy of something to be pasted somewhere else either in the same document or a different technology tool
- paste - placing content that has either been cut or copied
- double-click - pressing the touchpad or a mouse button very quickly two times
- triple-click - pressing the touchpad or a mouse button very quickly two times
- two finger tap - pressing 2 fingers on the touchpad at once (same as right click on a mouse)
- crop - trim an image to change its shape or remove excess background
- bullet point - a large dot in front of text used to show each new part of a list
- tab - a clickable area at the top of a web browser that lets the user switch to other pages
- full screen - when the application takes up the entire screen
- graphic - a picture or image
- trade-off - a compromise when it is not possible to have everything that is desired in a solution

Resources:

Videos:

- BrainPOP
- BrainPOP Jr.
- YouTube

CAD / 3D Modeling Applications:

- Tinkercad
- SketchUp for Schools

Schoology

Google Workspace

- Drive
- Gmail
- Docs
- Slides
- Sheets
- Drawings

Keyboarding Without Tears (KWT)

- Home Row - the row of keys on the computer keyboard where your fingers rest when not typing (left hand: asdf right hand: jkl;)
- bookmark - A bookmark is a web browser feature used to save a web site's URL address for future reference.

Drawing & Design Software and Presentations

- select tool - The select tool is usually an arrow and it is used to select objects by clicking on them or dragging around them.
- handle or object handle - Handles are little boxes which appear when an object is selected. Handles often allow objects to be stretched, rotated, or moved.
- group - combining selected objects together so that they act as one object.
- rotate - turn an object in a clockwise or counterclockwise direction
- zoom - changes size of how you view something by making it appear either larger or small but it does not actually change the size of anything
- pan - The pan tool allows you to change the view vertically and horizontally.
- text box - a section or object on a page that allows a user to enter text
- duplicate - makes and exact copy of something
- arrange - change the layering of objects (ex. move to back or front)

Extension Vocabulary:

- Transitions - effects that happen when you move from one slide to the next during a presentation
- Animation - visual effects applied to objects in a slide show

CAD / 3D Modeling Vocabulary

- CAD - computer aided design
- 3D Modeling - the process of creating three-dimensional representations of an object
- dimension - height, length, width, and radius (half the diameter of a circle), etc.

- orbit - The orbit tool lets you rotate the view of your drawing in any direction in a 3D model.
- scale model - A scale model has the exact same proportions of the original object, but it is a different size (smaller or larger).
- view - the angle you are looking at your drawing

Email & Learning Management System (Schoology) Messaging Vocabulary:

- email / e-mail - Email stands for electronic mail and it is a way to send and receive messages over the Internet.
- Gmail - Gmail is one of many free email services.
- communication - the act of giving, receiving, and sharing information
- recipient - The email address of the person who your email message is being sent to.
- subject - This is a title for the email message that helps the recipient identify what it is about when they see it in their inbox.
- salutation - A salutation is a word or phrase used for greeting the recipient.
- closing - The closing is a farewell or thank you before ending an email with your name.
- text message - an electronic communication sent and received over a cellular network.

Assessments:

Student projects will be graded with teacher created rubrics.

Grade, Subject: 3, Library/Technology	
Unit Name: Research	__X___ Essential _____ Important _____ Compact
Big Idea: Learners build new knowledge by inquiring, reading, thinking critically, identifying problems, and developing strategies for solving problems.	**Length/Duration of Unit:** 10 class periods

PA Content Standards: **AASL Standards Framework for Learners** ***Learners display curiosity and initiative by:*** **I.A.1:** Formulating questions about a personal interest or a curricular topic. **I.A.2:** Recalling prior and background knowledge as context for new meaning. ***Learners engage with new knowledge by following a process that includes:*** **I.B.1:** Using evidence to investigate questions. **I.B.2:** Devising and implementing a plan to fill knowledge gaps. **I.B.3:** Generating products that illustrate learning. ***Learners act on an information need by:*** **IV.A.1:** Determining the need to gather information. **IV.A. 2:** Identifying possible sources of information. **IV.A.3:** Making critical choices about what information to use. ***Learners gather information appropriate to the task by:*** **IV.B.4:** Organizing information by priority, topic, or other systematic scheme. ***Learners develop and satisfy personal curiosity by:*** **V.A.1:** Reading widely and deeply in multiple formats and write and create for a variety of purposes. **V.A.3:** Engaging in inquiry-based processes for personal growth. **Learners follow ethical and legal guidelines for gathering and using information by:** VI.A.1: Responsibly applying information, technology, and media to learning. **Learners use valid information and reasoned conclusions to make ethical decisions in the creation of knowledge by:** VI.B.1: Ethically using and reproducing others' work. VI.B.2: Acknowledging authorship and demonstrating respect for the intellectual property of others. **Business, Computer and Information Technology** **Standard Area - 15.3: Communication** 15.3.5.A Create work products with a variety of formats including note taking, outlines, essays, correspondence, journals and presentations. 15.3.5.E Distinguish between age appropriate and inappropriate print and electronic resources used for introductory research.	Interdisciplinary Standards (if applicable): **PA ELA CC.1.2: Reading Informational Text** **1.2.3.E** Use text features and search tools to locate and interpret information. **1.2.3.G** Use information gained from text features to demonstrate understanding of a text. **PA ELA CC 1.4: Writing** **1.4.3.S** Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and informational texts **1.4.3.V** Conduct short research projects that build knowledge about a topic. **1.4.3.W** Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. **PA ELA CC 1.5 Speaking and Listening** **1.5.3.B** Determine the main ideas and supporting details of a text read aloud or information presented in diverse media formats, including visually, quantitatively, and orally. **1.5.3.D** Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speak clearly with adequate volume, appropriate pacing, and clear pronunciation.

15.3.5.G Prepare appropriate information for impromptu and planned presentations. 15.3.5.H Present information as an individual or in a small group. 15.3.5.I Demonstrate note taking and questioning skills. **BCIT 15.4 Computer and Information Technologies** 15.4.5.G Create a digital project using appropriate software/application for an authentic task. 15.4.5.K Use digital media to enhance a content-specific work product. 15.4.5.L Discuss the characteristics of a credible website.	
Essential Questions: How do learners display curiosity and initiative? How do learners engage with and create meaning from information and texts? How does a learner determine which nonfiction source is appropriate to their needs? What makes a good resource for research? How do learners access information in a reference source? How do learners responsibly use information which they have gathered? How will the information gathered through research be shared with others?	**UNDERSTAND (principles/generalizations)** Learners will understand that there are a variety of sources one can use to learn about a topic. Learners will understand that library materials are arranged in a logical manner and may be retrieved by using one's knowledge of that arrangement. Learners will demonstrate ways to gather information by using note-taking skills, graphic organizers. Information may be organized using study, research, reference, and critical thinking skills to foster independent thinking.
KNOW (facts): ● Using keywords to search within print materials and online databases. ● Characteristics of age appropriate websites ● Retrieving meaningful information from a source ● Paraphrasing information	**DO (skills, processes, SWBAT…):** ● Choose aspect(s) of a topic to investigate ● Develop questions to be answered about a topic for a short research project ● Use information to answer questions and meet informational needs. ● Use text features and search tools (table of contents, index) to locate and interpret information in print and digital sources ● Use information ethically ● Record research information appropriately using graphic organizers and answer sheets. ● Identify main ideas and supporting details of text read aloud or presented in other media formats. ● Add multimedia components and visuals to the presentation to enhance or emphasize facts or details.

Vocabulary/Definitions: **Research:** the collecting of information about a particular subject **Encyclopedia**: a book or set of books giving information on many subjects or on many aspects of one subject and typically arranged alphabetically. **Keywords:** a word of interest or importance **Sources**: a person or a publication that supplies information **Index:** an alphabetical list in a printed work that gives with each item listed the page number where it may be found **Glossary:** list of the hard or unusual words found in a book **Plagiarism:** using someone's words without giving them credit **Summarize:** covering the main points briefly **Copyright:** the date a work or source was published or accessed by a user **Definition sources**: *Merriam-Webster for Kids* and teacher created	**Resources:** Various nonfiction print materials in the IMC World Book Online PebbleGo! BrainPOP Jr. U.S. Copyright Office Website
Assessments: Student projects will be graded with a rubric.	

Grade, Subject: 3, Library/Technology	
Unit Name: Coding	__X__ Essential _____ Important _____ Compact
Big Idea: Students will learn the basics of coding to complete a task.	**Length/Duration of Unit**: 6 class periods
PA Content Standards: **Grades 3–5: Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic (STEELS) Standards** 3.5.3-5.A Use appropriate symbols, numbers and words to communicate key ideas about technological products and systems. 3.5.3-5.B Examine information to assess the trade-offs of using a product or system. 3.5.3-5.C Follow directions to complete a technological task.	

3.5.3-5.D Predict how certain aspects of their daily lives would be different without given technologies.
3.5.3-5.G Describe the helpful and harmful effects of technology.
3.5.3-5.H Determine factors that influence changes in a society's technological systems or infrastructure.
3.5.3-5.I Design solutions by safely using tools, materials, and skills.
3.5.3-5.J Explain how technologies are developed or adapted when individual or societal needs and wants change.
3.5.3-5.K Judge technologies to determine the best one to use to complete a given task or meet a need.
3.5.3-5.L Demonstrate how tools and machines extend human capabilities, such as holding, lifting, carrying, fastening, separating, and computing.
3.5.3-5.N Identify why a product or system is not working properly.
3.5.3-5.O Describe requirements of designing or making a product or system.
3.5.3-5.P Evaluate the strengths and weaknesses of existing design solutions, including their own solutions.
3.5.3-5.R Apply tools, techniques, and materials in a safe manner as part of the design process.
3.5.3-5.S Illustrate that there are multiple approaches to design.
3.5.3-5.T: Apply universal principles and elements of design.
3.5.3-5.U Evaluate designs based on criteria, constraints, and standards.
3.5.3-5.Y Identify the resources needed to get a technical job done, such as people, materials, capital, tools, machines, knowledge, energy, and time.
3.5.3-5.Z Create a new product that improves someone's life.
3.5.3-5.BB Illustrate how, when parts of a system are missing, it may not work as planned.
3.5.3-5.CC Describe how a subsystem is a system that operates as a part of another larger system.
3.5.3-5.DD Demonstrate how simple technologies are often combined to form more complex systems.
3.5.3-5.EE Explain how solutions to problems are shaped by economic, political, and cultural forces.
3.5.3-5.HH Differentiate between the role of scientists, engineers, technologists, and others in creating and maintaining technological systems.

In January 2018 the Pennsylvania State Board of Education endorsed the Computer Science Teachers Association (CTSA) K-12 standards
Opens In A New Window.

CSTA K–12 CS Standards
Level 1B: Grades 3-5 (Ages 8-11)

Computing Systems
1B-CS-01: Describe how internal and external parts of computing devices function to form a system.
1B-CS-02: Model how computer hardware and software work together as a system to accomplish tasks.
1B-CS-03: Determine potential solutions to solve simple hardware and software problems using common troubleshooting strategies.
1B-NI-04: Model how information is broken down into smaller pieces, transmitted as packets through multiple devices over networks and the Internet, and reassembled at the destination.
1B-NI-05: Discuss real-world cybersecurity problems and how personal information can be protected.

Data and Analysis

1B-DA-06: Organize and present collected data visually to highlight relationships and support a claim.

1B-DA-07: Use data to highlight or propose cause-and-effect relationships, predict outcomes, or communicate an idea.

Algorithms and Programming

1B-AP-08: Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

1B-AP-09: Create programs that use variables to store and modify data.

1B-AP-10: Create programs that include sequences, events, loops, and conditionals.

1B-AP-11: Decompose (break down) problems into smaller, manageable subproblems to facilitate the program development process.

1B-AP-12: Modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.

1B-AP-13: Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.

1B-AP-14: Observe intellectual property rights and give appropriate attribution when creating or remixing programs.

1B-AP-15: Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.

1B-AP-16: Take on varying roles, with teacher guidance, when collaborating with peers during the design, implementation, and review stages of program development.

1B-AP-17: Describe choices made during program development using code comments, presentations, and demonstrations.

Impacts of Computing

1B-IC-18: Discuss computing technologies that have changed the world, and express how those technologies influence, and are influenced by, cultural practices.

1B-IC-19: Brainstorm ways to improve the accessibility and usability of technology products for the diverse needs and wants of users.

1B-IC-20: Seek diverse perspectives for the purpose of improving computational artifacts.

1B-IC-21: Use public domain or creative commons media, and refrain from copying or using material created by others without permission.

Essential Questions:	**Understandings (SWKT…):**
● How can technology be used to improve our lives? ● How are computer programs created?	● Students will understand the fundamentals of computer programming. ● Students will understand that coding is how applications are created.

Knowledge:

- Students will know that an algorithm is a set of step-by-step instructions to solve a problem.
- Students will know that sequencing is the specific order in which instructions have to be performed in an algorithm.
- Students will know that coding is how applications are created.
- Students will know that debugging is how you find errors in code.

Skills (SWBAT…):

- Students will be able to create an algorithm.
- Students will be able to code a program using block coding.
- Students will be able to troubleshoot why their code doesn't work through debugging.

Vocabulary:

Coding Vocabulary

- code - Code is the instructions in a program that tell computers what to do.
- coding - Coding is giving a computer instructions or a program to perform a specific task. You may also hear coding referred to as software programming, computer programming, or programming.
- sequence - a set of instructions in a specific order
- algorithm - a detailed, step-by-step process followed to accomplish a specific task or to solve a specific problem.
- program - a list of steps that can be completed by a machine. Programs are used to form applications.
- application (app) - a program or software designed for a particular purpose. Applications are designed for end users.
- programming - the act of creating a program. It is also called coding.
- decomposition - breaking a problem down into smaller more manageable pieces
- bug - an error in a program
- debugging - finding and fixing problems in a program
- loop - the action of doing something over and over again
- repeat - to do something again

Scratch Vocabulary

- stage - where your project is displayed when active
- backdrop - the background displayed on your Scratch stage
- sprite = the objects on the Scratch stage that performs actions

Resources:

Videos:

- BrainPOP
- BrainPOP Jr.
- YouTube

Applications:

- Scratch
- EdScratch
- SAM Studio

Websites:

- code.org

• costume = used to animate or change the appearance of the sprite in your game or story • events - events activate scripts which allow them to run • conditionals - Conditionals are statements that are only executed when a certain condition is met. An example of this is an if-statement. • operators - support for mathematical and logical expressions • data - storing, retrieving, and updating values	
Assessments: Student projects will be graded with teacher created rubrics.	

Grade, Subject: 3, Library/Technology	
Unit Name: Online Safety	__X__ Essential _____ Important _____ Compact
Big Idea: Students will use technology safely and responsibly.	**Length/Duration of Unit**: 4 class periods

PA Content Standards:

Grades 3–5: Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic (STEELS) Standards
3.5.3-5.G: Describe the helpful and harmful effects of technology.

Grades 3–5: Business, Computer and Information Technology
15.3.5.M: Apply proper etiquette when using technology.
15.3.5.T: Explain the importance of digital citizenship. Reference Business, Computer and Information Technologies 15.4.5.B
15.4.5.B: Identify and demonstrate understanding of ethical, safe, and social online behavior and potential consequences of unethical, unsafe, and inappropriate behavior.

International Society for Technology in Education (ISTE) 2016 Standards for Students
1.2.b Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

Essential Questions:	**Understandings (SWKT…):**
● How do you use technology safely and responsibly? ● Why do you have to be careful about what you post online?	● Students will understand that technology has both helpful and harmful effects. ● Students will understand how to keep their online accounts secure and that they have to be careful about giving out personal information and what they post online. ● Students will understand that cyberbullying is never acceptable and what to do if they or someone they know is being cyberbullied. ● Students will understand that school issued devices should be used for school work.
<u>Knowledge:</u> ● Students will know they have to be careful about giving out personal and private information online. ● Students will know that they should never share their passwords with anyone other than a parent. ● Students will know that cyberbullying is never acceptable and what to do if they or someone they know is being cyberbullied. ● Students will know that school issued devices should be used for school work. ● Students will know that what they post online could be out there forever.	**<u>Skills (SWBAT…)</u>:** ● Students will use their school issued technology in a safe and responsible way.
Vocabulary: Online Safety Vocabulary ● Acceptable Use Policy (AUP) - the school district's rules for accessing and using technology and the Internet ● appropriate - acceptable and proper, follows the rules ● digital citizen - someone who acts safely, responsibly, and respectfully online ● digital etiquette / netiquette - responsible and respectful behavior online ● Internet - a communications system that connects computers and computer networks all over the world ● cyberbully - someone who is mean to someone else through through electronic forms of communication ● cyberbullying - being mean to someone through electronic forms of communication ● username / screen name - a name you use for your online identity on a computer or web site	**Resources:** Videos: ● BrainPOP ● BrainPOP Jr. ● YouTube

• personal information - information that identifies who we are, where we live, and how family, friends, and others can contact us • personal information - information that you need to be careful about who you share it with but it could not be easily used to identify you. Examples include your age, first name, gender, and favorite things. • private information - information that should be kept private because it can be used to identify you or would give someone access to your accounts. Examples include full name, social security number, usernames and passwords. • digital footprint - the information about someone that can be found on the internet	
Assessments: Student projects will be graded with teacher created rubrics.	

Grade, Subject: 3, Library/Technology	
Unit Name: Engineering	__X__ Essential _____ Important _____ Compact
Big Idea: Students will learn how to use the engineering design process to solve problems.	**Length/Duration of Unit**: 12 class periods
PA Content Standards: **Grades 3–5: Science, Technology & Engineering, and Environmental Literacy & Sustainability Academic (STEELS) Standards** 3.5.3-5.A: Use appropriate symbols, numbers, and words to communicate key ideas about technological products and systems. 3.5.3-5.B: Examine information to assess the trade-offs to using a product or system. 3.5.3-5.C: Follow directions to complete a technological task. 3.5.3-5.D: Predict how certain aspects of their daily lives would be different without given technologies. 3.5.3-5.E Explain why responsible use of technology requires sustainable management of resources. 3.5.3-5.F: Classify resources used to create technologies as either renewable or nonrenewable. 3.5.3-5.G: Describe the helpful and harmful effects of technology. 3.5.3-5.H: Determine factors that influence changes in a society's technological systems or infrastructure.	

3.5.3-5.I: Design solutions by safely using tools, materials, and skills.
3.5.3-5.J: Explain how technologies are developed or adapted when individual or societal needs and wants change.
3.5.3-5.K: Judge technologies to determine the best one to use to complete a given task or meet a need.
3.5.3-5.L: Demonstrate how tools and machines extend human capabilities, such as holding, lifting, carrying, fastening, separating, and computing.
3.5.3-5.M: Demonstrate essential skills of the engineering design process.
3.5.3-5.N: Identify why a product or system is not working properly.
3.5.3-5.O: Describe requirements of designing or making a product or system.
3.5.3-5.P: Evaluate the strengths and weaknesses of existing design solutions, including their own solutions.
3.5.3-5.Q: Practice successful design skills.
3.5.3-5.R: Apply tools, techniques, and materials in a safe manner as part of the design process.
3.5.3-5.S: Illustrate that there are multiple approaches to design.
3.5.3-5.T: Apply universal principles and elements of design.
3.5.3-5.U: Evaluate designs based on criteria, constraints, and standards.
3.5.3-5.V: Interpret how good design improves the human condition.
3.5.3-5.W: Describe the properties of different materials.
3.5.3-5.X: Explain how various relationships can exist between technology and engineering and other content areas.
3.5.3-5.Y: Identify the resources needed to get a technical job done, such as people, materials, capital, tools, machines, knowledge, energy, and time.
3.5.3-5.Z: Create a new product that improves someone's life.
3.5.3-5.EE: Explain how solutions to problems are shaped by economic, political, and cultural forces.
3.5.3-5.GG: Describe the unique relationship between science and technology, and how the natural world can contribute to the human-made world to foster innovation.
3.5.3-5.HH: Differentiate between the role of scientists, engineers, technologists, and others in creating and maintaining technological systems.

Career Education and Work Standards:
13.2. Career Acquisition (Getting a Job)
13.2.5. GRADE 5
E. Apply to daily activities, the essential workplace skills, such as, but not limited to:

- Commitment
- Communication
- Dependability
- Health/safety
- Personal initiative
- Scheduling/time management
- Team building
- Technical literacy
- Technology

Essential Questions:	**Understandings (SWKT…):**
● How do engineers solve problems? ● What do you do when your solution to a problem doesn't work? ● What factors are involved when developing a solution to a problem? ● What is the relationship between science, technology, and engineering? ● What is the importance of using renewable resources? ● What are the effects of technology?	● Students will understand that there is a process that engineers use to solve problems. ● Students will understand that there are always limiting factors and trade-offs in any design. ● Students will understand both the differences and similarities between science, technology and engineering. ● Students will understand that sometimes there are both helpful and harmful effects of technology.
Knowledge: ● Students will know that engineers use the engineering design process to solve problems. ● Students will know the difference between science and engineering. ● Students will know that engineering is the use of science and technology to design and create products and processes to aid society. ● Students will know the types of things that are created by engineers. ● Students will know the difference between renewable and nonrenewable resources. ● Students will know how to follow visual and written directions to create a functioning system. ● Students will know that when part of a system is missing the system may not work correctly.	**Skills (SWBAT…):** ● Students will be able to use the Engineering Design Process to solve design challenges. ● Students should be able to work as a team to test, evaluate and improve solutions. ● Students will be able to make sketches to communicate their designs.
Vocabulary: ● Technology - Technology is the use of knowledge to invent new devices or tools. ● System - a group of interrelated components that when put together achieve a desired goal ● Engineering - the application of science and math to solve problems ● Engineering Design Process - steps to follow when working on a project or solving a problem	**<u>Resources</u>:** Videos: ● BrainPOP ● BrainPOP Jr. ● YouTube Websites: ● Teach Engineering Website ● TEEAP Website

● trade-off - a compromise when it is not possible to have everything that is desired in a solution ● prototype - a first working model which can be tested to see if it works ● iteration - repeating the design process to continuously improve a design ● ideation - coming up with ideas ● constraints - limitations or a restrictions on a design (Examples: time, cost, and materials) ● criteria - the requirements that must be met (A design is only successful if all the criteria are met.) ● scale model - A smaller or larger version of something that is proportionally correct ● mockup (mock-up) - a non-working model of a design used for teaching, demonstration, design evaluation, and/or promotion ● aesthetic - relating to how nice something looks ● sketch - rough drawing representing the main features of an object or scene	● ITEEA Website
Assessments: Student projects will be graded with teacher created rubrics.	