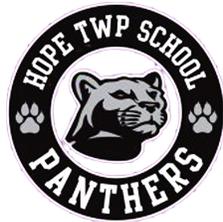# Belvidere Clusterwide Curriculum

Media and Technology

Third to Fifth Grade

Updated: Summer 2025

All Belvidere Cluster curriculum and instruction areas are aligned to the New Jersey Student Learning Standards (NJSLS) in accordance with the NJ Department of Education's curriculum implementation requirements.

Curriculum Coordinator: Timm Gast
Authors:
Susan Martino, Hope
Jessica Piazza, Harmony
Adam Tucker, Harmony
Dawn Werkheiser, White

UNITS	Duration	Essential Questions:
Unit 1: Computing Systems	(8 weeks)	1. How do computing and network systems work? 2. How do I pick appropriate tools to solve problems? 3. In what ways does technology make life easier? 4. How can I use technology as a tool to show what I have learned?
Unit 2: Digital Citizenship	(6 Weeks)	1. How can I be a good digital citizen? 2. Why is computer and internet safety important? 3. What is ethical and safe online behavior? 4. What are our rights and responsibilities as digital citizens? 5. What is intellectual property and how do we properly credit the work of others?
Unit 3: Research and Productivity	(8 Weeks)	1. How can I use formatting and design tools within productivity software? 2. How are different productivity applications and websites useful for creating different kinds of content? 3. How do I find and evaluate resources for research?
Unit 4: Coding and Algorithms	(6 weeks)	1. How do the coding structures of sequencing, loops, and events work together to complete tasks? 2. How can I use critical thinking skills to debug errors in my code? 3. What problems can computer programming address or solve? 4. How are coding and algorithms fundamental to our daily lives?
Unit 5: Engineering Design	(8 weeks)	1. What is engineering and how do engineers collaborate to solve problems using the design process? 2. How has technology been influenced throughout history? How do inventors and innovators impact and shape society? 3. How has technology impacted systems and products? 4. How has the environment been impacted by technology?
Unit 6: Data and Analysis	(4 weeks)	1. How can I use digital tools to collect and represent data? 2. Why is data important when making decisions?

Student Learning
Career Education (NJDOE CTE Clusters)

21st Century Themes:

- Global Awareness
- Financial, Economic, Business and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy
- Environmental Literacy
- Creativity and Innovation
- Critical Thinking
- Problem Solving
- Communication
- Collaboration
- Information Literacy
- Media Literacy
- ICT (Information, Communication and Technology) Literacy

Modifications and Accommodations:
Special Education
- Printed copy of board work/notes provided
- Additional time for skill mastery
- Assistive technology
- Behavior management plan
- Center-Based Instruction
- Check work frequently for understanding
- Computer or electronic device utilization
- Extended time on tests/ quizzes
- Have student repeat directions to check for understanding
- Highlighted text visual presentation
- Modified assignment format
- Modified test content
- Modified test format
- Modified test length
- Multiple test sessions
- Multi-sensory presentation
- Preferential seating
- Preview of content, concepts, and vocabulary
- Reduced/shortened written assignments
- Secure attention before giving instruction/directions
- Shortened assignments
- Student working with an assigned partner
- Teacher initiated weekly assignment sheet
- Use open book, study guides, test prototypes
- Cubing activities
- Exploration by interest
- Flexible grouping

- Goal setting with students
- Jigsaw
- Mini workshops to re-teach or extend skills Open-ended activities
- Think-Pair-Share
- Varied supplemental materials

ELL
- Allowing students to correct errors (looking for understanding)
- Teaching key aspects of a topic Eliminate nonessential information Using videos, illustrations, pictures, and drawings to explain or clarify
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slideshows, videos, etc.) to demonstrate student's learning
- Allowing students to correct errors (looking for understanding)
- Allowing the use of note cards or open-book during testing
- Decreasing the amount of work presented or required
- Having peers take notes or providing a copy of the teacher's notes
- Modifying tests to reflect selected objectives
- Providing study guides
- Reducing the number of answer choices on a multiple choice test
- Tutoring by peers
- Explain/clarify key vocabulary terms

At Risk
- Allowing students to correct errors (looking for understanding)
- Teaching key aspects of a topic Eliminate nonessential information allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slideshows, videos, etc.) to demonstrate student's learning
- Allowing students to select from given choices .
- Allowing the use of note cards or open-book during testing
- Collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test
- decreasing the amount of work presented or required .
- Having peers take notes or providing a copy of the teacher's notes
- Marking students' correct and acceptable work, not the mistakes
- Modifying tests to reflect selected objectives
- Providing study guides
- Reducing the number of answer choices on a multiple choice test
- Tutoring by peers
- Using authentic assessments with real-life problem-solving
- Using true/false, matching, or fill in the blank tests in lieu of essay tests
- using videos, illustrations, pictures, and drawings to explain or clarify
- Flexible grouping
- Goal setting with students
- Jigsaw
- Mini workshops to re-teach or extend skills Open-ended activities
- Think-Pair-Share
- Varied supplemental materials

Gifted and Talented
- Alternative formative and summative assessments

- Choice boards
- Games and tournaments
- Group investigations
- Independent research and projects Interest groups for real world application
- Learning contracts
- Leveled rubrics
- Multiple intelligence options
- Personal agendas
- Project-based learning
- Problem-based learning
- Stations/centers
- Think-Tac-Toes
- Tiered activities/assignments
- Tiered products_____

504

- Printed copy of board work/notes provided
- Additional time for skill mastery
- Assistive technology
- Behavior management plan
- Center-Based Instruction
- Check work frequently for understanding
- Computer or electronic device utilization
- Extended time on tests/ quizzes
- Have student repeat directions to check for understanding
- Highlighted text visual presentation
- Modified assignment format
- Modified test content
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- Secure attention before giving instruction/directions
- Shortened assignments
- Student working with an assigned partner
- Seacher initiated weekly assignment sheet
- Use open book, study guides, test prototype
- Exploration by interest
- Flexible grouping
- Goal setting with students
- Mini workshops to re-teach or extend skills Open-ended activities
- Think-Pair-Share
- Varied supplemental materials

Unit 1 Overview: Computing Systems

Unit 1 Summary:
Students will demonstrate basic computer knowledge and an understanding of its operations and components. Students will understand the use of technology concepts, systems, operations and the impact of technology on the world around us.

Essential Questions:
- How do computing and network systems work?
- How do I pick appropriate tools to solve problems?
- In what ways does technology make life easier?
- How can I use technology as a tool to show what I have learned?

New Jersey Student Learning Standards

New Jersey Student Learning Standards:

CPI:
8.1.5.CS.1: Model how computing devices connect to other components to form a system.
8.1.5.CS.2: Model how computer software and hardware work together as a system to accomplish tasks.
8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
8.1.5.DA.2: Compare the amount of storage space required for different types of data.
8.1.5.NI.1: Develop models that successfully transmit and receive information using both wired and wireless methods.
8.1.5.NI.2: Describe physical and digital security measures for protecting sensitive personal information.
8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes.
8.1.5.IC.2: Identify possible ways to improve the accessibility and usability of computing technologies to address the diverse needs and wants of users.

Interdisciplinary Connections:
ELA/Literacy
- Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.
- Interpret information
- Use specialized, topic-specific language.

Mathematics
- Make sense of problems and persevere in solving them
- Reason abstractly

21st Century Themes:
- Global Awareness
- Environmental Literacy
- Critical Thinking
- Problem Solving
- Communication
- Collaboration

- Information Literacy
- Media Literacy
- ICT (Information, Communication and Technology) Literacy

Enduring Understandings

Students will understand that…

- How to distinguish between types of technology and appropriate applications to solve problems.
- Computers are part of an interconnected system.
- Technology has impacted how we live, learn and work and is constantly evolving.

Unit 1 Student Learning Objectives

Students will know…
• Computing devices may be connected to other devices to form a system as a way to extend their capabilities.
• Software and hardware work together as a system to accomplish tasks (e.g., sending, receiving, processing, and storing units of information).
• Shared features allow for common troubleshooting strategies that can be effective for many systems
• Information needs a physical or wireless path to travel to be sent and received.
• Distinguishing between public and private information is important for safe and secure online interactions.
• Information can be protected using various security measures (i.e., physical and digital).
• The development and modification of computing technology is driven by people's needs and wants and can affect individuals differently.

Unit 1 Assessments

Formative Assessments:
- Pretest/Post test
- Observation
- Class Participation
- Think-Pair-Share

Summative Assessments:
- Quiz
- Unit Projects

Alternative Assessments:
- Do-Now
- Exit Tickets
- Classroom Games
- Self-assessment
- Feedback from home form

Additional Resources/Links

- **ABCya.com**
- **Typing.com**

- Typetastic.com
- **Google Docs**
- **Google Slides**
- applieddigitalskills.withgoogle.com
- [Craft Computing](#)
- [CS Unplugged](#)
- [SciShowKids](#)

Unit 2 Overview: Digital Citizenship

Unit 2 Summary:
Students will demonstrate an understanding of human, cultural, and societal issues related to technology and practice legal and ethical behavior. They will also understand how to interact with technology and social media both in the classroom and beyond, as well as how to deal with cyberbullying. Students will demonstrate an understanding of the need to practice cyber safety when using technology and social media.

Essential Questions:
- How can I be a good digital citizen?
- Why is computer and internet safety important?
- What is ethical and safe online behavior?
- What are our rights and responsibilities as digital citizens?
- What is intellectual property and how do we properly credit the work of others?

New Jersey Student Learning Standards

New Jersey Student Learning Standards:

CPI:
9.4.5.DC.1: Explain the need for and use of copyrights.
9.4.5.DC.2: Provide attribution according to intellectual property rights guidelines using public domain or creative commons media.
9.4.5.DC.3: Distinguish between digital images that can be reused freely and those that have copyright restrictions.
9.4.5.DC.4: Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2).
9.4.5.DC.5: Identify the characteristics of a positive and negative online identity and the lasting implications of online activity.
9.4.5.DC.6: Compare and contrast how digital tools have changed social interactions (e.g., 8.1.5.IC.1).
9.4.5.DC.7: Explain how posting and commenting in social spaces can have positive or negative consequences.
9.4.5.DC.8: Propose ways local and global communities can engage digitally to participate in and promote climate action (e.g., 6.3.5.GeoHE.1).

Interdisciplinary Connections:
ELA/Literacy
- Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases.
- Interpret information
- Use specialized, topic-specific language

Mathematics
- Make sense of problems and persevere in solving them
- Reason abstractly

21st Century Themes:
- Global Awareness
- Environmental Literacy
- Critical Thinking

- Problem Solving
- Communication
- Collaboration
- Information Literacy
- Media Literacy
- ICT (Information, Communication and Technology) Literacy

Enduring Understandings

Students will understand that…

- There are negative consequences to cyberbullying and unethical or unsafe online behavior.
- Being a responsible citizen means standing up for what is right, as inaction is a choice.
- A person's digital footprint extends beyond the classroom, across devices and over time.

Unit 2 Student Learning Objectives

Students will know…
- Intellectual property rights exist to protect the original works of individuals. It is allowable to use other people's ideas in one's own work provided that proper credit is given to the original source.
- Sending and receiving copies of media on the internet creates the opportunity for unauthorized use of data, such as personally owned video, photos, and music.
- Digital identities must be managed in order to create a positive digital footprint.
- Digital tools have positively and negatively changed the way people interact socially.
- Digital engagement can improve the planning and delivery of climate change actions.

Unit 2 Assessments

Formative Assessments:
- Pretest/Post test
- Observation
- Class Participation
- Think-Pair-Share

Summative Assessments:
- Quiz
- Unit Projects

Alternative Assessments:
- Do-Now
- Exit Tickets
- Classroom Games
- Self-assessment
- Feedback from home form

Additional Resources/Links

- **Commonsense.org**
- **ABCya.com**
- **https://iste.org/digital-citizenship-lessons**
- **PBS Learning Media**
- **Interland Digital Citizenship Activities**
- **Be Internet Awesome Peardeck Slides**
- **[sos.fbi.gov](sos.fbi.gov)**
- **https://everfi.com/courses/k-12/lesson-plans-empathy-compassion-elementary/**

Unit 3 Overview: Research and Productivity

Unit 3 Summary:
Within this unit, students will evaluate and select information sources and digital tools based on the appropriateness for specific tasks. The students will be able to locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.

Essential Questions:
- How can I use formatting and design tools within productivity software?
- How are different productivity applications and websites useful for creating different kinds of content?
- How do I find and evaluate resources for research?

New Jersey Student Learning Standards

New Jersey Student Learning Standards:

CPI:
8.1.5.DA.4: **Organize and present climate change data visually to highlight relationships or support a claim.**
9.4.5.CI.1: **Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions** (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).
9.4.5.CI.2: **Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue** (e.g., 6.3.5.CivicsPD.3, W.5.7).
9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one's thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).
9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6).
9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
9.4.5.CT.2: Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.
9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).
9.4.5.TL.1: Compare the common uses of at least two different digital tools and identify the advantages and disadvantages of using each.
9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images, graphics, or symbols.
9.4.5.TL.4: Compare and contrast artifacts produced individually to those developed collaboratively (e.g., 1.5.5.CR3a). •
9.4.5.TL.5: Collaborate digitally to produce an artifact (e.g., 1.2.5CR1d)

Interdisciplinary Connections:
ELA/Literacy
- Gather relevant information from multiple sources
- Summarize or paraphrase information

Mathematics
- Make sense of problems and persevere in solving them

- Reason abstractly

21st Century Themes:
- Global Awareness
- Environmental Literacy
- Critical Thinking
- Problem Solving
- Communication
- Collaboration
- Information Literacy
- Media Literacy
- ICT (Information, Communication and Technology) Literacy

Enduring Understandings

Students will understand that…

- There are multiple resources available for research, including print and digital resources.
- They must evaluate a resource for appropriateness and accuracy.
- They must properly cite a source.

Unit 3 Student Learning Objectives

Students will know…
• Collaboration with individuals with diverse perspectives can result in new ways of thinking and/or innovative solutions.
• Curiosity and willingness to try new ideas (intellectual risk taking) contributes to the development of creativity and innovation.
• The ability to solve problems effectively begins with gathering data, seeking resources, and applying critical thinking skills.
• Different digital tools have different purposes.
• Collaborating digitally as a team can often develop a better artifact than an individual working alone.

Unit 3 Assessments

Formative Assessments:
- Pretest/Post test
- Observation
- Class Participation
- Think-Pair-Share

Summative Assessments:
- Quiz
- Unit Projects

Alternative Assessments:
- Do-Now
- Exit Tickets
- Classroom Games
- Self-assessment
- Feedback from home form

Additional Resources/Links

- **Google Docs, Google Slides**
- **ABCya.com**
- **Bookcreator.com**
- **https://climatekids.nasa.gov/kids-guide-to-climate-change/**
- **Canva.com**
- **https://www.epa.gov/climate-change/climate-change-resources-educators-and-students**
- **https://kids.nationalgeographic.com/**
- **https://climate.nasa.gov/for-educators/**
- **World Book**, **Britannica**

Unit 4 Overview: Coding and Algorithms

Unit 4 Summary:
Students will participate in coding activities to develop/enhance an understanding of computational thinking and create and debug algorithms using appropriate terms. Students will be able to understand computational thinking and computer programming as tools used in design and engineering.

Essential Questions:
- How do the coding structures of sequencing, loops, and events work together to complete tasks?
- How can I use critical thinking skills to debug errors in my code?
- What problems can computer programming address or solve?
- How are coding and algorithms fundamental to our daily lives?

New Jersey Student Learning Standards

New Jersey Student Learning Standards:

CPI:
8.1.5.AP.1: Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
8.1.5.AP.2: Create programs that use clearly named variables to store and modify data.
8.1.5.AP.3: Create programs that include sequences, events, loops, and conditionals.
8.1.5.AP.4: Break down problems into smaller, manageable sub-problems to facilitate program development.
8.1.5.AP.5: Modify, remix, or incorporate pieces of existing programs into one's own work to add additional features or create a new program.
8.1.5.AP.6: Develop programs using an iterative process, implement the program design, and test the program to ensure it works as intended.

Interdisciplinary Connections:
ELA/Literacy
- Directional awareness
- Phonological awareness/phonics and word recognition
- Reading Fluency

Mathematics
- Make sense of problems and persevere in solving them
- Counting and cardinality
- Reason abstractly and quantitatively
- Recognize patterns to make code more efficient using loops

21st Century Themes:
- Global Awareness
- Environmental Literacy
- Critical Thinking
- Problem Solving
- Communication
- Collaboration
- Information Literacy
- Media Literacy
- ICT (Information, Communication and Technology) Literacy

Enduring Understandings

Students will understand that…

- Computer scientists blend human ideas and digital tools to efficiently solve problems in our everyday lives.
- Computational thinking can be used to break down steps within a complex task.

Unit 4 Student Learning Objectives

Students will know…
• Different algorithms can achieve the same result.
• Some algorithms are more appropriate for a specific use than others.
• Programming languages provide variables, which are used to store and modify data.
• A variety of control structures are used to change the flow of program execution (e.g., sequences, events, loops, conditionals).
• Programs can be broken down into smaller parts to facilitate their design, implementation, and review. Programs can also be created by incorporating smaller portions of programs that already exist.
• Individuals develop programs using an iterative process involving design, implementation, testing, and review.

Unit 4 Assessments

Formative Assessments:
- Pretest/Post test
- Observation
- Class Participation
- Think-Pair-Share

Summative Assessments:
- Quiz
- Unit Projects

Alternative Assessments:
- Do-Now
- Exit Tickets
- Classroom Games
- Self-assessment
- Feedback from home form

Additional Resources/Links

- **CodeMonkey.com**
- **Code Studio**
- **Ozobot coding**
- **SciShowKids**
- **Dash robots**
- **Vex Go robots**
- **Scratch Jr.**
- **Rubix Cube**
- **Lego Mindstorms**

Unit 5 Overview: Engineering Design

Unit 5 Summary:
Students will develop an understanding of human, cultural, and societal values that are fundamental when designing technology systems and products in the global society. They will brainstorm ideas, identify designed products and prototype solutions using 2D and/or 3D models. Students will use critical thinking skills, construct knowledge, and develop projects and processes using technology and consider their effects on the natural world.

Essential Questions:
- What is engineering and how do engineers collaborate to solve problems using the design process?
- How has technology been influenced throughout history?
- How do inventors and innovators impact and shape society?
- How has technology impacted systems and products?
- How has the environment been impacted by technology?

New Jersey Student Learning Standards

New Jersey Student Learning Standards:

CPI:
8.2.5.ED.1: Explain the functions of a system and its subsystems.
8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models.
8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
8.2.5.ED.4: Explain factors that influence the development and function of products and systems (e.g., resources, criteria, desired features, constraints).
8.2.5.ED.5: Describe how specifications and limitations impact the engineering design process.
8.2.5.ED.6: Evaluate and test alternative solutions to a problem using the constraints and tradeoffs identified in the design process.
8.2.5.ITH.1: Explain how societal needs and wants influence the development and function of a product and a system.
8.2.5.ITH.2: Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have. •
8.2.5.ITH.3: Analyze the effectiveness of a new product or system and identify the positive and/or negative consequences resulting from its use.
8.2.5.ITH.4: Describe a technology/tool that has made the way people live easier or has led to a new business or career.
8.2.5.NT.1: Troubleshoot a product that has stopped working and brainstorm ideas to correct the problem.
8.2.5.NT.2: Identify new technologies resulting from the demands, values, and interests of individuals, businesses, industries, and societies.
8.2.5.NT.3: Redesign an existing product for a different purpose in a collaborative team.
8.2.5.NT.4: Identify how improvement in the understanding of materials science impacts technologies.
8.2.5.ETW.1: Describe how resources such as material, energy, information, time, tools, people, and capital are used in products or systems.
8.2.5.ETW.2: Describe ways that various technologies are used to reduce improper use of resources.
8.2.5.ETW.3: Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved.
8.2.5.ETW.4: Explain the impact that resources, such as energy and materials used to develop technology, have on the environment.
8.2.5.ETW.5: **Identify the impact of a specific technology on the environment and determine what can be done to**

increase positive effects and to reduce any negative effects, such as <mark>climate change</mark>.
8.2.5.EC.1: Analyze how technology has contributed to or **<mark>reduced inequities</mark>** in local and global communities and determine its short- and long-term effects.

Interdisciplinary Connections:
ELA/Literacy
- Read grade-level text with purpose and understanding
- Gather relevant information from multiple sources
- Summarize or paraphrase information

Mathematics
- Make sense of problems and persevere in solving them
- Reason abstractly
- Represent and interpret data
- Area and perimeter

Science
- Use models to describe phenomena
- Find systematic solutions to problems that are based on scientific knowledge
- Engineering Design

21st Century Themes:
- Global Awareness
- Environmental Literacy
- Critical Thinking
- Problem Solving
- Communication
- Collaboration
- Information Literacy
- Media Literacy
- ICT (Information, Communication and Technology) Literacy

Enduring Understandings

Students will understand that…

- Engineers use a design process to solve problems based on a real world need.
- They can ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Unit 5 Student Learning Objectives

Students will know…
• Engineering design is a systematic and creative process of communicating and collaborating to meet a design challenge.
• Often, several design solutions exist, each better in some way than the others.
• Engineering design requirements include desired features and limitations that need to be considered.
• Societal needs and wants determine which new tools are developed to address real-world problems.
• A new tool may have favorable or unfavorable results as well as both positive and negative effects on society.

• Technology spurs new businesses and careers.
• Technology innovation and improvement may be influenced by a variety of factors.
• Engineers create and modify technologies to meet people's needs and wants; scientists ask questions about the natural world.
• The technology developed for the human designed world can have ==unintended consequences for the environment.==
• Technology must be continually developed and made more efficient to ==reduce the need for nonrenewable resources.==
• ==Technological choices and opportunities vary due to factors such as differences in economic resources, location, and cultural values.==

Unit 5 Assessments

Formative Assessments:
- Pretest/Post test
- Observation
- Class Participation
- Think-Pair-Share

Summative Assessments:
- Quiz
- Unit Projects

Alternative Assessments:
- Do-Now
- Exit Tickets
- Classroom Games
- Self-assessment
- Feedback from home form

Additional Resources/Links

- **Legos/Building Blocks**
- **3D printers**
- **Cardboard & DIY materials**
- **Virtual field trips**
- **teachengineering.org**
- **commonsense.org**
- **https://kids.nationalgeographic.com/**
- **Engineering is Elementary**
- **Minecraft: Education Edition**
- **K'Nex**
- **KEVA planks**
- **Snap Circuits**

Unit 6 Overview: Data and Analysis

Unit 6 Summary:
Students will be able to identify spreadsheets and databases, and their uses. They will use software applications to enter, calculate, sort, and filter information, and create tables and graphs to present data.

Essential Questions:
- How can I use digital tools to collect and represent data?
- Why is data important when making decisions?

New Jersey Student Learning Standards

New Jersey Student Learning Standards:

CPI:
8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.
8.1.5.DA.4: **Organize and present climate change data visually to highlight relationships or support a claim.**
8.1.5.DA.5: Propose cause and effect relationships, predict outcomes, or communicate ideas using data.
9.4.5.TL.1: Compare the common uses of at least two different digital tools and identify the advantages and disadvantages of using each.
9.4.5.TL.2: Sort and filter data in a spreadsheet to analyze findings.

Interdisciplinary Connections:
ELA/Literacy
- Gather relevant information from multiple sources
- Summarize or paraphrase information
- Graphic Organizer

Mathematics
- Make sense of problems and persevere in solving them
- Counting and cardinality
- Organize numerical data in table and graph formats
- Use spreadsheets to perform calculations on numeric data

21st Century Themes:
- Financial, Economic, Business and Entrepreneurial Literacy
- Critical Thinking
- Problem Solving
- Communication
- Collaboration
- Information Literacy
- Media Literacy
- ICT (Information, Communication and Technology) Literacy

Enduring Understandings

Students will understand that…

- Computer technology is a useful tool for organizing, calculating, and analyzing data.
- Effective use of data can help us make decisions and solve problems.

Unit 6 Student Learning Objectives

Students will know…
• Data can be organized, displayed, and presented to highlight relationships
• The type of data being stored affects the storage requirements.
• Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.
• Many factors influence the accuracy of inferences and predictions.
• Different digital tools have different purposes.

Unit 6 Assessments

Formative Assessments:
- Pretest/Post test
- Observation
- Class Participation
- Think-Pair-Share

Summative Assessments:
- Quiz
- Unit Projects

Alternative Assessments:
- Do-Now
- Exit Tickets
- Classroom Games
- Self-assessment
- Feedback from home form

Additional Resources/Links

- **Google Sheets/Microsoft Excel**
- **CS Unplugged- Image Representation**
- **Graphs for Kids**
- **ABCya.com-Fuzz Bugs (Graph Interpretation)**
- **https://nces.ed.gov/nceskids/**
- **Graph creator-Canva**
- **Pie Chart creator-Canva**
- **https://virtualscienceteachers.org/pie-chart-maker/**
- **applieddigitalskills.withgoogle.com**
- **Pixel Art**