

6th grade, Unit #1, Technology, Building Character

Content Area: **Technology**
Course(s): **Technology**
Time Period: **September**
Length: **4 weeks**
Status: **Published**

Enduring Understanding

Our conduct and behavior towards others and our environment impacts our success and self-esteem.

Essential Questions

- What are some positive attributes of character that we should demonstrate in school and in the community?
- Why is it important to appreciate diversity and display respect towards others?

Standards

TECH.8.1.8.C.CS3 TECH.8.1.8.C.CS4 TECH.8.1.8	Develop cultural understanding and global awareness by engaging with learners of other cultures. Contribute to project teams to produce original works or solve problems. All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. Understand appropriate uses for social media and the negative consequences of misuse.
TECH.8.1.8.C.CS1	Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. Create a document (e.g. newsletter, reports, personalized learning plan, business letters or flyers) using one or more digital applications to be critiqued by professionals for usability.
WORK.5-8.9.1.8.A.1	Develop strategies to reinforce positive attitudes and productive behaviors that impact critical thinking and problem-solving skills.
WORK.5-8.9.1.8.C.1 WORK.5-8.9.1.8.C.2	Determine an individual's responsibility for personal actions and contributions to group activities. Demonstrate the use of compromise, consensus, and community building strategies for carrying out different tasks, assignments, and projects.
WORK.5-8.9.1.8.C.3 WORK.5-8.9.1.8.D.5 TECH.8.1.8.C.1	Model leadership skills during classroom and extra-curricular activities. Justify the need for greater cross-cultural understanding due to globalization. Collaborate to develop and publish work that provides perspectives on a global problem for discussions with learners from other countries.
TECH.8.1.8.A.2	Create a document (e.g. newsletter, reports, personalized learning plan, business letters or flyers) using one or more digital applications to be critiqued by professionals for usability.
TECH.8.1.8.C.CS2	Communicate information and ideas to multiple audiences using a variety of media and formats.

Student Learning Objectives

Review skills in creating text and graphical content of various sizes in word processing software.

Recognize the importance of demonstrating good character in daily life.

Identify ways to create a positive climate in school.

Instructional Activities

A poster dealing with some aspect of "Character". Some examples are "Courtesy in the Hallway", "Professionalism in your Writing", and "Respect for People with Disabilities".

Interdisciplinary Connections

Health - Personal conduct, self-esteem

Art - Design of posters

Texts and Resources

Word processing software

Posters

Art Supplies

Assessment

Posters with content created in word processing and with clip art from the web

Discussion participation

6th grade, Unit #2, Technology, Photography

Content Area: **Technology**

Course(s): **Technology**

Time Period: **October**

Length: **4 weeks**

Status: **Published**

Enduring Understanding

Photography is both an art and a science. Composition, exposure, and editing techniques are all part of what makes an outstanding picture.

Essential Questions

What makes an interesting photograph?

Standards

TECH.8.1.8.B

Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.

TECH.8.1.2.A.CS2

Select and use applications effectively and productively.

TECH.8.1.8.B.CS2

Create original works as a means of personal or group expression.

TECH.8.1.8.B.CS1

Apply existing knowledge to generate new ideas, products, or processes.

VPA.3-5.1.3.5.D.1

Work individually and collaboratively to create two- and three-dimensional works of art that make cohesive

VPA.3-5.1.3.5.D.5

TECH.8.1.8.E.CS3

TECH.8.1.2.A.1

TECH.8.1.8.B.1

TECH.8.1.2.B.1

visual statements and that employ the elements of art and principles of design.

Collaborate in the creation of works of art using multiple art media and art mediums, and present the completed works in exhibition areas inside and outside the classroom.

Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.

Identify the basic features of a digital device and explain its purpose.

Synthesize and publish information about a local or global issue or event (ex. telecollaborative project, blog, school web).

Illustrate and communicate original ideas and stories using multiple digital tools and resources.

Student Learning Objectives

Utilize the features of digital cameras and photo editing software.

Create and present a photo slideshow.

Recognize composition that makes for an interesting picture.

Identify how changing camera settings can change the look of the picture.

Instructional Activities

Students will complete various photo assignments, such as:

Interesting perspective

Outdoor landscape

Still life

Portrait

Students can explore camera settings such as aperture and shutter speed.

Import the photos onto the computer and use editing software to further change the look of the picture.

Interdisciplinary Connections

Art - Artistic composition of photographs, perspective

Texts and Resources

Cameras

Photo editing software

Color printer

Assessment

- Digital photos
- Prints of photos
- Slideshow

6th grade, Unit #3, Technology, Rube Goldberg

Content Area: **Technology**
Course(s): **Technology**
Time Period: **November**
Length: **4 weeks**
Status: **Published**

Enduring Understanding

The design process is fundamental to technology and engineering.

Essential Questions

- When are sophisticated tools required and when are the simplest tools the best to use?

Standards

TECH.8.2.8.C.4 TECH.8.2.8.D.2	Identify the steps in the design process that would be used to solve a designated problem. Identify the design constraints and trade-offs involved in designing a prototype (e.g., how the prototype might fail and how it might be improved) by completing a design problem and reporting results in a multimedia presentation, design portfolio or engineering notebook.
TECH.8.1.8.F.CS2 TECH.8.1.8.B	Plan and manage activities to develop a solution or complete a project. Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.
TECH.8.2.8.C.2 TECH.8.2.8.D.3	Explain the need for optimization in a design process. Build a prototype that meets a STEM- based design challenge using science, engineering, and math principles that validate a solution.
TECH.8.2.8.C.5b TECH.8.2.8.D.CS2 TECH.8.2.8.C.CS2 TECH.8.2.8.C.8	Create a technical sketch of a product with materials and measurements labeled. Use and maintain technological products and systems. The application of engineering design. Develop a proposal for a chosen solution that include models (physical, graphical or mathematical) to communicate the solution to peers.
TECH.8.1.8.F.CS4 TECH.8.2.8.C.5a TECH.8.2.8.D.1	Use multiple processes and diverse perspectives to explore alternative. Explain the interdependence of a subsystem that operates as part of a system. Design and create a product that addresses a real world problem using a design process under specific constraints.
TECH.8.2.8.C.CS3	The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.
TECH.8.2.8.C.6	Collaborate to examine a malfunctioning system and identify the step-by-step process used to troubleshoot, evaluate and test options to repair the product, presenting the better solution.
TECH.8.1.8.C.CS2	Communicate information and ideas to multiple audiences using a variety of media and formats.

Student Learning Objectives

Students will:

Use the design process to create a machine which incorporates science and math principles to solve a problem.

Complete a design for a science based prototype and identify design constraints.

Report results for a prototype in a multimedia presentation.

Instructional Activities

Combining an understanding of the design process and knowledge of the purpose and function of six simple machines, students will create 'Rube Goldberg' machines to solve a problem.

Group activity: Review steps of the design process.

Six students will be selected to be Project Managers and the remaining students will sign up for a team.

Teams will brainstorm to decide on a problem (ex. how to crack an egg)

Each machine must include a minimum of 2 simple machines.

Students will be required to bring materials from home and using the design process work together to successfully create their prototype.

Machines will be constructed and displayed in the Media Center.

Use digital cameras to document the process and create a photostory using PowerPoint.

Review student understanding of the simple machines and how they provide a platform for students to understand the basis of complex machines and systems. Simple machines: lever, wedge, pulley, wheel and axle, inclined plane, and screw.

Interdisciplinary Connections

Science- use of simple machines in prototypes

Texts and Resources

A variety of materials contributed by students

Blocks, K'nex, balls, balloons, pulleys, wedges, etc. provided by teacher

Paper/pencil

Assessment

- Completed machine
- Photostory
- Team member evaluation sheet

6th grade, Unit #4, Technology, Word Processing

Content Area: **Technology**
Course(s): **Technology**
Time Period: **December**
Length: **4 weeks**
Status: **Published**

Enduring Understanding

Selection of technology should be based on personal and/or career needs assessment.

Essential Questions

How do I choose which technological tool to use and when is it appropriate to use them?

- For what purposes would we use various features of word processing software?
- How can features such as tables and smart art make information easier to understand for our audience?

Standards

TECH.8.2.8.E.2	Demonstrate an understanding of the relationship between hardware and software.
TECH.8.1.8.B.CS2	Create original works as a means of personal or group expression.
TECH.8.1.8.B.CS1	Apply existing knowledge to generate new ideas, products, or processes.
TECH.8.1.8.A.2	Create a document (e.g. newsletter, reports, personalized learning plan, business letters or flyers) using one or more digital applications to be critiqued by professionals for usability.

Student Learning Objectives

Use word processing features including tables, columns, page breaks, alignment, and smart art.

Apply word processing techniques to various assignments from across the curriculum.

Instructional Activities

Various word processing activities, such as:

Place Name Origins table

Comparison Review

Restaurant Menu

3 Branches of Government

Lawmaking Process

Lab Report

Interdisciplinary Connections

Social Studies- lawmaking and branches of government as focus of word processing project

Texts and Resources

Word processing software

Research materials

Graphic organizers

Assessment

- Printouts of work
- Quiz

6th grade, Unit #5, Technology, Child Labor

Content Area: **Technology**

Course(s): **Technology**

Time Period: **January**

Length: **4 weeks**

Status: **Published**

Enduring Understanding

Technological outcomes have the potential for anticipated and unanticipated positive and negative results.

Essential Questions

How does technology extend human capabilities?

Should technologies that produce negative impacts continue to be used?

Standards

TECH.8.2.8.B.6	Compare and contrast the different types of intellectual property including copyrights, patents and trademarks.
TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.F.1	Explore a local issue, by using digital tools to collect and analyze data to identify a solution and make an informed decision.
TECH.8.2.8.A.CS3	The relationships among technologies and the connections between technology and other fields of study.

Student Learning Objectives

Explain the need for a patent and the process for acquiring one.

Compare/contrast ethical and unethical uses of labor in the United States.

Instructional Activities

Work in groups to research child labor in the past and present. Produce a documentary demonstrating its impact.

Research child labor in the United States today and explain how the laws protect children.

Interdisciplinary Connections

Social Studies- Child labor research

Texts and Resources

Graphic organizers

Computers with access to the internet

Video camera

Assessment

- Discussions
- Evaluation of Research
- Video

6th Grade, Unit #6, Technology, Square of Life

Project

Content Area: **Technology**
Course(s): **Technology**
Time Period: **February**
Length: **12 weeks**
Status: **Published**

Enduring Understanding

Digital tools provide opportunities for people to have new experiences, recognize problems, design solutions, and express their ideas.

Essential Questions

- How can digital tools be used for creating original and innovative works, ideas, and solutions?

Core Curriculum Standards

TECH.8.1.8.C.CS3	Develop cultural understanding and global awareness by engaging with learners of other cultures.
TECH.8.1.8.C.CS4	Contribute to project teams to produce original works or solve problems.
TECH.8.1.8.A	Students demonstrate a sound understanding of technology concepts, systems and operations.
TECH.8.1.8.A.4	Graph and calculate data within a spreadsheet and present a summary of the results
TECH.8.1.8.C.CS1	Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environment and media.
TECH.8.1.8.A.3	Use and/or develop a simulation that provides an environment to solve a real world problem or theory.
TECH.8.1.8.E.1	Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.
TECH.8.1.8.A.1	Demonstrate knowledge of a real world problem using digital tools.
TECH.8.1.8.E.CS1	Plan strategies to guide inquiry.

Student Learning Objectives

Gather and analyze data and share results with learners from other countries to suggest a solution for a real world problem.

Instructional Activities

Identify living and non-living things in the school yard.

Share findings with other participating classes.

Look for similarities and differences in the reported data.

Prepare a final report or presentation based on findings which includes possible solutions for problems (i.e. litter, areas of flooding, pests, etc)

Interdisciplinary Connections

Science- study of an ecological issue, interpretation of data

Texts and Resources

<http://ciese.org/curriculum/squareproj/>

Computers with Internet access

Meter sticks, string, Popsicle sticks

Digital cameras

Student log books, pencils, markers, crayons

Scanner

Excel, PowerPoint, Word

Webcam, Skype

Assessment

Anecdotal records

Observations

Conferencing

Peer Assessments

6th Grade, Unit #7, Technology, Critical Thinking

Content Area: **Technology**
Course(s): **Technology**
Time Period: **May**
Length: **6 weeks**
Status: **Published**

Enduring Understanding

A tool is only as good as the person using it.

Essential Questions

- How can I transfer what I know to new technological situations/experiences?
- How do I choose which technological tools to use and when it is appropriate to use them?

Common Core Standards

TEC.5-8.8.1.8.A.3

Create a multimedia presentation including sound and images.

TEC.5-8.8.1.8.A.5

Select and use appropriate tools and digital resources to accomplish a variety of tasks and to solve problems.

TEC.5-8.8.1.8.F.1

Use an electronic authoring tool in collaboration with learners from other countries to evaluate and summarize the perspectives of other cultures about a current event or contemporary figure.

Student Learning Objectives

Use an electronic authoring tool to summarize ideas and share perspectives with other learners.

Instructional Activities

Participate in an online discussion with students from other countries about who are the five most influential contemporary figures in a particular area of interest (e.g., sports figure, musician, actor, politician, etc.)

Suggestions for online discussions:

Epals

Class Blogmeister

www.blogspot.com

www.wikispaces.com

www.pbwiki.com

www.skype.com

Interdisciplinary Connections

Language Arts- Use of authoring tool to write summary of findings.

Texts and Resources

Computers with internet access

www.glogster.edu (or other electronic authoring tool)

For discussions:

Epals, Class Blogmeister, www.blogspot.com, www.wikispaces.com, www.pbwiki.com, www.skype.com

Assessment

- Electronic poster

6th Grade, Unit #8, Technology, Critical Thinking

Content Area: **Technology**

Course(s): **Technology**

Time Period: **June**

Length: **4 weeks**

Status: **Published**

Enduring Understanding

A tool is only as good as the person using it.

Essential Questions

- How can I transfer what I know to new technological situations/experiences?
- How do I choose which technological tools to use and when it is appropriate to use them?

Core Curriculum Standards

TECH.8.1.8.D.5

TECH.8.1.8

Understand appropriate uses for social media and the negative consequences of misuse.

All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

TECH.8.1.8.D.4

TECH.8.1.8.C.1

Assess the credibility and accuracy of digital content.

Collaborate to develop and publish work that provides perspectives on a global problem for discussions with learners from other countries.

TECH.8.1.8.D.3

TECH.8.1.8.A.1

TECH.8.1.8.D.CS3

Demonstrate an understanding of fair use and Creative Commons to intellectual property.

Demonstrate knowledge of a real world problem using digital tools.

Exhibit leadership for digital citizenship.

Understand and model appropriate online behaviors related to cyber safety, cyber bullying, cyber security, and cyber ethics including appropriate use of social media.

Student Learning Objectives

Use an electronic authoring tool to summarize ideas and share perspectives with other learners.

Instructional Activities

Participate in an online discussion with students from other countries about who are the five most influential

contemporary figures in a particular area of interest (e.g., sports figure, musician, actor, politician, etc.)

Suggestions for online discussions:

Epals

Class Blogmeister

www.blogspot.com

www.wikispaces.com

www.pbwiki.com

www.skype.com

TECH.8.1.2.C.1

Engage in a variety of developmentally appropriate learning activities with students in other classes, schools, or countries using various media formats such as online collaborative tools, and social media.

TECH.8.1.2.C.CS2

Communicate information and ideas to multiple audiences using a variety of media and formats.

TECH.8.1.2.D.CS1

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

TECH.8.1.2.E.1

Use digital tools and online resources to explore a problem or issue.

TECH.8.1.2.B.CS2

Create original works as a means of personal or group expression.

TECH.8.1.2.C.CS1

Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environment and media.

Interdisciplinary Connections

Language Arts- Use of authoring tool to write summary of findings.

Texts and Resources

Computers with internet access

www.glogster.edu (or other electronic authoring tool)

For discussions:

Epals, Class Blogmeister, www.blogspot.com, www.wikispaces.com, www.pbwiki.com, www.skype.com

Assessment

- Electronic poster