Pennsylvania Tutorials are designed specifically for the Pennsylvania Core Standards and the Pennsylvania Academic Standards to prepare students for the Keystone Exams and the Pennsylvania System of School Assessment (PSSA).

Tutorials offer targeted instruction, practice, and review designed to help students develop fluency, deepen conceptual understanding, and apply scientific thinking skills. Students engage with the content in an interactive, feedback-rich environment as they progress through standards-aligned modules. By constantly honing their ability to explain and analyze biological scenarios, students build the depth of knowledge and higher-order skills required to demonstrate their mastery when put to the test.

In each module, the Learn It and Try It make complex ideas accessible through focused content, guided analysis, multi-modal representations, and personalized feedback as students reason through increasingly challenging problems. The Review It offers a high-impact summary of key concepts and relates those concepts to students' lives. The Test It assesses students' mastery of the module's concepts, providing granular performance data to students and teachers after each attempt. To help students focus on the content most relevant to them, unit-level pretests and posttests can quickly identify where students are strong and where they're still learning.

## Unit 1: Nature of Science

- **WHAT IS SCIENCE?**
  - 3.4.6-8.E: Collect, analyze, and interpret environmental data to describe a local environment.
  - 3.5.6-8.H: Evaluate trade-offs based on various perspectives as part of a decision process that recognizes the need for careful compromises among competing factors.
  - 3.5.6-8.EE: Differentiate between inputs, processes, outputs, and feedback in technological systems.
- **TYPES OF INVESTIGATIONS**
  - 3.4.6-8.D: Gather, read, and synthesize information from multiple sources to investigate how Pennsylvania environmental issues affect Pennsylvanias human and natural systems.
- **USING MODELS**
  - 3.4.6-8.D: Gather, read, and synthesize information from multiple sources to investigate how Pennsylvania environmental issues affect Pennsylvanias human and natural systems.

## Unit 2: Cells

- **CHARACTERISTICS OF LIFE**
  - 3.1.6-8.A: Conduct an investigation to provide evidence that living things are made of cells, either one cell or many different numbers and types of cells.


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- 3.1.6-8.E: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

- **CELL STRUCTURE**
  - 3.1.6-8.B: Develop and use a model to describe the function of a cell as a whole and the ways that parts of cells contribute to the function.
- **SPECIALIZED CELLS AND TISSUES**
  - 3.1.6-8.B: Develop and use a model to describe the function of a cell as a whole and the ways that parts of cells contribute to the function.

### Unit 3: Multicellular Bodies

- **ORGANS AND ORGAN SYSTEMS**
  - 3.1.6-8.C: Use arguments supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
- **HUMAN ORGAN SYSTEMS**
  - 3.1.6-8.C: Use arguments supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.
  - 3.1.6-8.H: Gather and synthesize information about how sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

### Unit 4: Life on Earth

- **CHEMISTRY OF LIFE**
  - 3.1.6-8.F: Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.
  - 3.1.6-8.G: Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.
- **CELL NUTRITION AND TRANSPORT**
  - 3.1.6-8.G: Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

### Unit 5: Response to Stimuli

- **ANIMAL BEHAVIOR**
  - 3.1.6-8.D: Use arguments based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants, respectively.
- **PLANT RESPONSES**
  - 3.1.6-8.D: Use arguments based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants, respectively.


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## Unit 6: Ecology

- **CHARACTERISTICS OF ECOSYSTEMS**
  - 3.1.6-8.I: Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.
- **INTERACTIONS IN ECOSYSTEMS**
  - 3.1.6-8.F: Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.
  - 3.1.6-8.J: Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.
  - 3.1.6-8.K: Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.
- **SUCCESSION AND ECOSYSTEM STABILITY**
  - 3.1.6-8.L: Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.
  - 3.1.6-8.U: Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

## Unit 7: Evolution

- **THEORY OF EVOLUTION**
  - 3.1.6-8.P: Apply scientific ideas to construct an explanation for anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.
  - 3.1.6-8.Q: Analyze displays of pictorial data to compare patterns of similarities in anatomical structures across multiple species to identify relationships not evident in the fully formed anatomy.
- **NATURAL SELECTION**
  - 3.1.6-8.S: Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals probability of surviving and reproducing in a specific environment.
  - 3.1.6-8.T: Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.
- **GEOLOGIC TIME**
  - 3.1.6-8.O: Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.
  - 3.3.6-8.D: Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.
  - 3.3.6-8.G: Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of past plate motions.


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## Unit 8: Genetics

- **GENES AND DNA**
  - 3.1.6-8.M: Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.
- **PATTERNS OF REPRODUCTION**
  - 3.1.6-8.N: Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

## Unit 9: Matter and Resources

- **MATTER AND RESOURCES**
  - 3.2.6-8.A: Develop models to describe the atomic composition of simple molecules and extended structures.
- **NATURAL RESOURCES**
  - 3.2.6-8.C: Gather and make sense of information to describe how synthetic materials come from natural resources and impact society.
  - 3.3.6-8.K: Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.
  - 3.3.6-8.N: Construct an argument supported by evidence for how increases in human population and per capita consumption of natural resources impact Earth's systems.
  - 3.4.6-8.A: Develop a model to describe how agricultural and food systems function, including the sustainable use of natural resources and the production, processing, and management of food, fiber, and energy.
  - 3.5.6-8.I: Examine the ways that technology can have both positive and negative effects at the same time.
  - 3.5.6-8.D: Analyze how the creation and use of technologies consumes renewable, non-renewable, and inexhaustible resources; creates waste; and may contribute to environmental challenges.

## Unit 10: Chemical Changes

- **PHYSICAL AND CHEMICAL CHANGES**
  - 3.2.6-8.D: Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.
  - 3.2.6-8.F: Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.
- **CHANGES OF STATE**
  - 3.2.6-8.B: Develop a model that predicts and describes changes in the particle motion, temperature, and state of a pure substance when thermal energy is added or removed.


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- **CHEMICAL EQUATIONS**
  - 3.2.6-8.E: Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.

### Unit 11: Forces

- **EFFECTS OF FORCES**
  - 3.2.6-8.G: Apply Newtons Third Law to design a solution to a problem involving the motion of two colliding objects.
  - 3.2.6-8.H: Plan an investigation to provide evidence that the change in an objects motion depends on the sum of the forces on the object and the mass of the object.
- **GRAVITATIONAL FORCE**
  - 3.2.6-8.J: Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.
  - 3.2.6-8.K: Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.
- **ELECTROMAGNETIC FORCES**
  - 3.2.6-8.I: Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.
  - 3.2.6-8.K: Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

### Unit 12: Energy

- **DESCRIBING ENERGY**
  - 3.2.6-8.L: Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass and speed of an object.
  - 3.2.6-8.P: Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.
- **THERMAL ENERGY AND TEMPERATURE**
  - 3.2.6-8.N: Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.

### Unit 13: Energy Transfer

- **ENERGY TRANSFER AND TRANSFORMATION**
  - 3.2.6-8.O: Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.
- **ENERGY TRANSFER AND TECHNOLOGY**


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- 3.2.6-8.F: Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.
- 3.2.6-8.M: Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.
- 3.2.6-8.N: Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.

## Unit 14: Waves

- **MECHANICAL WAVES**
  - 3.2.6-8.Q: Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.
- **INTERACTIONS OF WAVES AND MATTER**
  - 3.2.6-8.R: Develop and use a model to describe how waves are reflected, absorbed, or transmitted through various materials.
- **WAVES AND TECHNOLOGY**
  - 3.2.6-8.S: Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.
  - 3.5.6-8.F: Analyze examples of technologies that have changed the way people think, interact, live, and communicate.
  - 3.5.6-8.Y: Compare, contrast, and identify overlap between the contributions of science, technology, engineering, and mathematics in the development of technological systems.
  - 3.5.6-8.Z: Analyze how different technological systems often interact with economic, environmental, and social systems.
  - 3.5.6-8.BB: Demonstrate how knowledge gained from other content areas affects the development of technological products and systems.
  - 3.5.6-8.CC: Consider historical factors that have contributed to the development of technologies and human progress.
  - 3.5.6-8.FF: Demonstrate how systems thinking involves considering relationships between every part, as well as how the systems interact with the environment in which it is used.
  - 3.5.6-8.LL: Compare how different technologies involve different sets of processes.
  - 3.5.6-8.N (ETS): Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
  - 3.5.6-8.U: Evaluate and assess the strengths and weaknesses of various design solutions given established principles and elements of design.
  - 3.5.6-8.X: Defend decisions related to a design problem.


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- 3.5.6-8.DD: Engage in a research and development process to simulate how inventions and innovations have evolved through systematic tests and refinements.
- 3.5.6-8.G: Analyze how an invention or innovation was influenced by the context and circumstances in which it is developed.
- 3.5.6-8.O: Interpret the accuracy of information collected.
- 3.5.6-8.S: Illustrate the benefits and opportunities associated with different approaches to design.
- 3.5.6-8.KK: Explain how technology and engineering are closely linked to creativity, which can result in both intended and unintended innovations.

## Unit 15: Earth's Place in the Universe

- **THE UNIVERSE**
  - 3.3.6-8.C: Analyze and interpret data to determine scale properties of objects in the solar system.
- **OUR SOLAR SYSTEM**
  - 3.3.6-8.B: Develop and use a model to describe the role of gravity in the motion within galaxies and the solar system.
  - 3.3.6-8.C: Analyze and interpret data to determine scale properties of objects in the solar system.
- **EARTH-MOON-SUN SYSTEM**
  - 3.3.6-8.A: Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

## Unit 16: Our Changing Planet

- **DEFORMING EARTH'S CRUST**
  - 3.3.6-8.E: Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.
- **WEATHERING AND EROSION**
  - 3.3.6-8.E: Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.
  - 3.3.6-8.F: Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

## Unit 17: The Geosphere

- **EARTH'S STRUCTURE AND CYCLES**
  - 3.3.6-8.F: Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.
  - 3.3.6-8.H: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.
  - 3.3.6-8.I: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.


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- **THE ROCK CYCLE**
  - 3.3.6-8.F: Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.
- **PLATE TECTONICS**
  - 3.3.6-8.E: Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.
  - 3.3.6-8.F: Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.
  - 3.3.6-8.G: Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of past plate motions.

## Unit 18: Thermal Energy and Earth's Systems

- **FRESHWATER AND ICE**
  - 3.3.6-8.H: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.
- **OCEANS**
  - 3.3.6-8.H: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.
  - 3.3.6-8.I: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.
- **THE ATMOSPHERE**
  - 3.3.6-8.H: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.
  - 3.3.6-8.I: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.

## Unit 19: Weather and Climate

- **WEATHER**
  - 3.3.6-8.J: Collect data to provide evidence for how the motion and complex interactions of air masses result in changes in weather conditions.
- **CLIMATE**
  - 3.3.6-8.I: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.
  - 3.3.6-8.O: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

## Unit 20: Humans and Earth's Resources

- **IMPACTS OF HUMANS**


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- 3.3.6-8.M: Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.
- 3.3.6-8.N: Construct an argument supported by evidence for how increases in human population and per capita consumption of natural resources impact Earth's systems.
- 3.4.6-8.A: Develop a model to describe how agricultural and food systems function, including the sustainable use of natural resources and the production, processing, and management of food, fiber, and energy.
- 3.4.6-8.B: Analyze and interpret data about how different societies (economic and social systems) and cultures use and manage natural resources differently.
- 3.4.6-8.C: Develop a model to describe how watersheds and wetlands function as systems, including the roles and functions they serve.
- 3.4.6-8.G: Obtain and communicate information to describe how best resource management practices and environmental laws are designed to achieve environmental sustainability.
- 3.5.6-8.C: Hypothesize what alternative outcomes (individual, cultural, and/or environmental) might have resulted had a different technological solution been selected.
- 3.5.6-8.E: Consider the impacts of a proposed or existing technology and devise strategies for reducing, reusing, and recycling waste caused by its creation.
- 3.5.6-8.Z: Analyze how different technological systems often interact with economic, environmental, and social systems.
- 3.5.6-8.CC: Consider historical factors that have contributed to the development of technologies and human progress.
- 3.5.6-8.H: Evaluate trade-offs based on various perspectives as part of a decision process that recognizes the need for careful compromises among competing factors.
- 3.5.6-8.FF: Demonstrate how systems thinking involves considering relationships between every part, as well as how the systems interact with the environment in which it is used.
- 3.5.6-8.I: Examine the ways that technology can have both positive and negative effects at the same time.

## Unit 21: Natural Disasters

- **SEVERE WEATHER**
  - 3.3.6-8.J: Collect data to provide evidence for how the motion and complex interactions of air masses result in changes in weather conditions.
  - 3.3.6-8.L: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
  - 3.5.6-8.H: Evaluate trade-offs based on various perspectives as part of a decision process that recognizes the need for careful compromises among competing factors.


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- 3.5.6-8.FF: Demonstrate how systems thinking involves considering relationships between every part, as well as how the systems interact with the environment in which it is used.
- 3.5.6-8.J: Use tools, materials, and machines to safely diagnose, adjust, and repair systems.
- 3.5.6-8.M (ETS): Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.
- 3.5.6-8.N (ETS): Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
- 3.5.6-8.P (ETS): Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- 3.5.6-8.Q: Apply a technology and engineering design thinking process.
- 3.5.6-8.R: Develop innovative products and systems that solve problems and extend capabilities based on individual or collective needs and wants.
- 3.5.6-8.T: Create solutions to problems by identifying and applying human factors in design.
- 3.5.6-8.U: Evaluate and assess the strengths and weaknesses of various design solutions given established principles and elements of design.
- 3.5.6-8.X: Defend decisions related to a design problem.
- 3.5.6-8.DD: Engage in a research and development process to simulate how inventions and innovations have evolved through systematic tests and refinements.
- 3.5.6-8.JJ: Apply informed problem-solving strategies to the improvement of existing devices or processes or the development of new approaches.
- 3.5.6-8.V: Refine design solutions to address criteria and constraints.
- 3.5.6-8.W (ETS): Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

- **EARTHQUAKES AND VOLCANOES**
  - 3.3.6-8.L: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.
  - 3.5.6-8.H: Evaluate trade-offs based on various perspectives as part of a decision process that recognizes the need for careful compromises among competing factors.
  - 3.5.6-8.FF: Demonstrate how systems thinking involves considering relationships between every part, as well as how the systems interact with the environment in which it is used.
  - 3.5.6-8.J: Use tools, materials, and machines to safely diagnose, adjust, and repair systems.
  - 3.5.6-8.M (ETS): Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.


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- 3.5.6-8.N (ETS): Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
- 3.5.6-8.P (ETS): Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
- 3.5.6-8.Q: Apply a technology and engineering design thinking process.
- 3.5.6-8.R: Develop innovative products and systems that solve problems and extend capabilities based on individual or collective needs and wants.
- 3.5.6-8.T: Create solutions to problems by identifying and applying human factors in design.
- 3.5.6-8.U: Evaluate and assess the strengths and weaknesses of various design solutions given established principles and elements of design.
- 3.5.6-8.X: Defend decisions related to a design problem.
- 3.5.6-8.DD: Engage in a research and development process to simulate how inventions and innovations have evolved through systematic tests and refinements.
- 3.5.6-8.JJ: Apply informed problem-solving strategies to the improvement of existing devices or processes or the development of new approaches.

## Unit 22: Human Technologies

- **BIOTECHNOLOGY**
  - 3.1.6-8.R: Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.
  - 3.4.6-8.F: Obtain and communicate information on how integrated pest management could improve indoor and outdoor environments.
  - 3.5.6-8.C: Hypothesize what alternative outcomes (individual, cultural, and/or environmental) might have resulted had a different technological solution been selected.
  - 3.5.6-8.F: Analyze examples of technologies that have changed the way people think, interact, live, and communicate.
  - 3.5.6-8.Y: Compare, contrast, and identify overlap between the contributions of science, technology, engineering, and mathematics in the development of technological systems.
  - 3.5.6-8.Z: Analyze how different technological systems often interact with economic, environmental, and social systems.
  - 3.5.6-8.BB: Demonstrate how knowledge gained from other content areas affects the development of technological products and systems.
  - 3.5.6-8.CC: Consider historical factors that have contributed to the development of technologies and human progress.
  - 3.5.6-8.FF: Demonstrate how systems thinking involves considering relationships between every part, as well as how the systems interact with the environment in which it is used.


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- 3.5.6-8.LL: Compare how different technologies involve different sets of processes.

- **SPACE AND EXPLORATION**
  - 3.5.6-8.F: Analyze examples of technologies that have changed the way people think, interact, live, and communicate.
  - 3.5.6-8.Y: Compare, contrast, and identify overlap between the contributions of science, technology, engineering, and mathematics in the development of technological systems.
  - 3.5.6-8.Z: Analyze how different technological systems often interact with economic, environmental, and social systems.
  - 3.5.6-8.BB: Demonstrate how knowledge gained from other content areas affects the development of technological products and systems.
  - 3.5.6-8.CC: Consider historical factors that have contributed to the development of technologies and human progress.
  - 3.5.6-8.LL: Compare how different technologies involve different sets of processes.
  - 3.5.6-8.N (ETS): Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.
  - 3.5.6-8.P (ETS): Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
  - 3.5.6-8.Q: Apply a technology and engineering design thinking process.
  - 3.5.6-8.R: Develop innovative products and systems that solve problems and extend capabilities based on individual or collective needs and wants.
  - 3.5.6-8.T: Create solutions to problems by identifying and applying human factors in design.
  - 3.5.6-8.U: Evaluate and assess the strengths and weaknesses of various design solutions given established principles and elements of design.
  - 3.5.6-8.X: Defend decisions related to a design problem.
  - 3.5.6-8.DD: Engage in a research and development process to simulate how inventions and innovations have evolved through systematic tests and refinements.


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