

Topic: Structure and Functions of Cells

Subject(s): Science

Days: 0

Grade(s): 6th

Key Learning: **Structural and functional similarities and differences characterize diverse living things**

Unit Essential Question(s): **How do structural and functional similarities and differences characterize diverse living things?**

Concept:  
**The Structure of Living Things**

Concept:  
**The structure of animal and plant cells**

Concept:  
**The function of specific cells**

Lesson Essential Question(s):  
What are living things made of? (A)

What is a species? (A)

What is cell theory? (A)

Lesson Essential Question(s):  
What are the parts of plant and animal cells? (A)

What are the parts of an animal cell? (A)

What are the parts of a plant cell? (A)

Lesson Essential Question(s):  
What are the functions of specific cells? (A)

How are the shape and size of a cell related to its function? (A)

What other differences in cells are related to their functions? (A)

Vocabulary:  
Cell Theory, Species, Compound Microscope

Vocabulary:  
Nucleus, Chromosome, Cell Membrane, Cytoplasm, Organelle, Mitochondria, Vacuole, Endoplasmic Reticulum, Ribosome, Chloroplast, Chlorophyll, Cell Wall

Vocabulary:

Topic: Structure and Functions of Cells

Subject(s): Science

Days: 0  
 Grade(s): 6th

<p>Concept:  <b>Similarities and differences in internal structure of different organs</b></p>	<p>Concept:  <b>Characteristic structures for the purpose of classification of organisms</b></p>	<p>Concept:  <b>Levels of organization from cell to organism</b></p>
<p>Lesson Essential Question(s):          How do plant cells differ from animal cells? (A)           What are the functions of cell parts? (A)           Which cell parts differ in plant and animal cells? (A)</p>	<p>Lesson Essential Question(s):          How are organisms classified? (A)           What are the six kingdoms of living things? (A)           How are animals classified? (A)           How are plants classified? (A)</p>	<p>Lesson Essential Question(s):          What are tissues, organs, and systems in living things? (A)           What do tissues consist of? (A)           How do tissues combine to create organs? (A)           How do organs combine to create systems? (A)</p>
<p>Vocabulary:          Cell Wall, Chloroplast, Chlorophyll, Vacuole</p>	<p>Vocabulary:          Vertebrate, Invertebrate, Vascular, Monocot, Dicot</p>	<p>Vocabulary:          Tissue, Organ, System</p>

Additional Information: \_\_\_\_\_

Attached Document(s): \_\_\_\_\_

Vocab Report for Topic: Structure and Functions of Cells  
Subject(s): Science

Days: 0  
Grade(s): 6th

**Concept: The Structure of Living Things**  
Cell Theory, Species, Compound Microscope  
-

**Concept: The structure of animal and plant cells**  
Nucleus, Chromosome, Cell Membrane, Cytoplasm, Organelle, Mitochondria, Vacuole,  
Endoplasmic Reticulum, Ribosome, Chloroplast, Chlorophyll, Cell Wall  
-

**Concept: Similarities and differences in internal structure of different organs**  
Cell Wall, Chloroplast, Chlorophyll, Vacuole  
-

**Concept: Characteristic structures for the purpose of classification of organisms**  
Vertebrate, Invertebrate, Vascular, Monocot, Dicot  
-

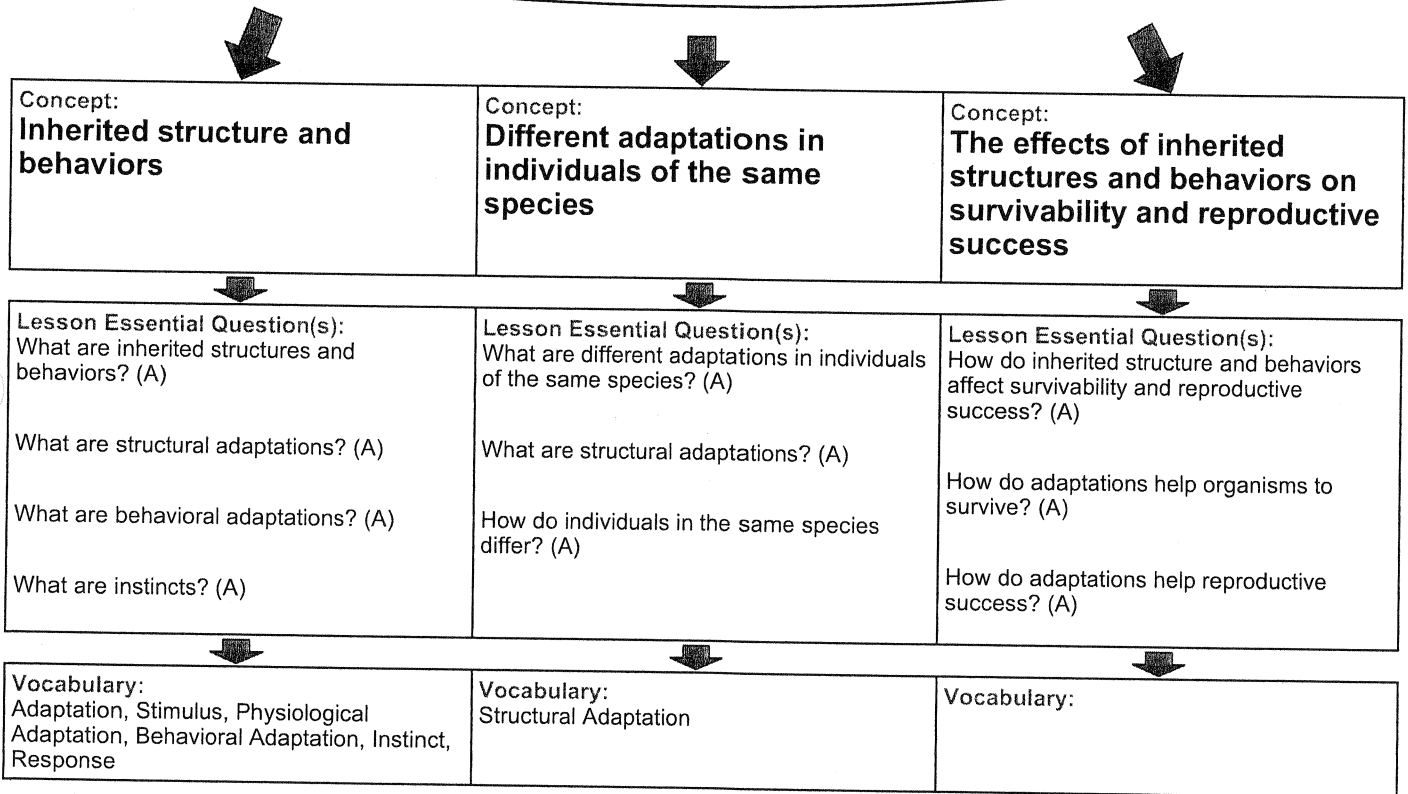
**Concept: Levels of organization from cell to organism**  
Tissue, Organ, System  
-

Topic: Changing and Adapting  
 Subject(s): Science

Days: 0  
 Grade(s): 6th

**Key Learning: Natural selection affects the survivability and reproductive success of species.  
 Genetic traits determine inherited traits of organisms**

**Unit Essential Question(s): How does natural selection affect the survivability and reproductive success of species?  
 How do genetic traits determine inherited traits of organisms?**



Topic: Changing and Adapting

Subject(s): Science

Days: 0

Grade(s): 6th

Concept:  
**The development of adaptations over long periods of time**

Concept:  
**The heredity of adaptations**

Lesson Essential Question(s):  
How do adaptations develop over long periods of time? (A)  
  
How do we know species change over time? (A)  
  
How do new species evolve? (A)

Lesson Essential Question(s):  
How are adaptations passed from one generation to the next? (A)  
  
What are the differences between inherited and acquired traits? (A)

Vocabulary:  
Natural Selection, Evolution, Fossil

Vocabulary:  
Inherit, Heredity, Triat

Additional Information:

Attached Document(s):

Vocab Report for Topic: Changing and Adapting

Subject(s): Science

Days: 0

Grade(s): 6th

**Concept: Inherited structure and behaviors**

Adaptation, Stimulus, Physiological Adaptation, Behavioral Adaptation, Instinct, Response

-

**Concept: Different adaptations in individuals of the same species**

Structural Adaptation

-

**Concept: The development of adaptations over long periods of time**

Natural Selection, Evolution, Fossil

-

**Concept: The heredity of adaptations**

Inherit, Heredity, Triat

-

Topic: Ecosystems and Biomes

Subject(s): Science

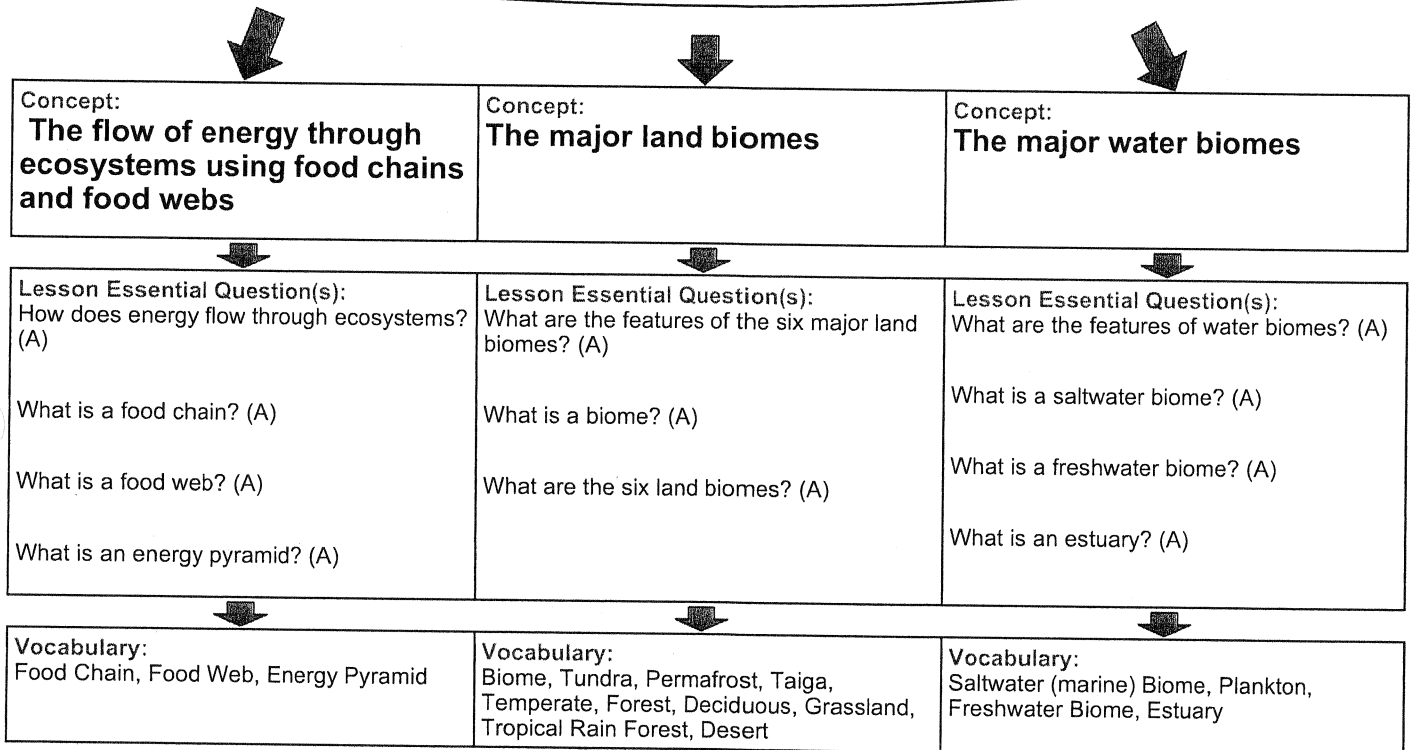
Days: 0

Grade(s): 6th

**Key Learning: There are relationships among and between organisms in different ecosystems and their abiotic and biotic components**



**Unit Essential Question(s): What are the relationships among and between organisms in different ecosystems and their abiotic and biotic components?**



**Concept:**  
Relationships among organisms in an ecosystem

**Lesson Essential Question(s):**  
How do organisms in an ecosystem interact? (A)

How do parts of an ecosystem interact? (A)

How do producers, consumers and decomposers interact? (A)

**Vocabulary:**  
Abiotic, Biotic, Consumer, Herbivore, Carnivore, Omnivore, Decomposer, Producer, Predator, Prey, Competition

Topic: Ecosystems and Biomes  
Subject(s): Science

Days: 0  
Grade(s): 6th

Additional Information:

Attached Document(s):



Vocab Report for Topic: Ecosystems and Biomes

Days: 0

Subject(s): Science

Grade(s): 6th

**Concept: The flow of energy through ecosystems using food chains and food webs**

Food Chain, Food Web, Energy Pyramid  
-

**Concept: The major land biomes**

Biome, Tundra, Permafrost, Taiga, Temperate, Forest, Deciduous, Grassland, Tropical Rain Forest, Desert  
-

**Concept: The major water biomes**

Saltwater (marine) Biome, Plankton, Freshwater Biome, Estuary  
-

**Concept: Relationships among organisms in an ecosystem**

Abiotic, Biotic, Consumer, Herbivore, Carnivore, Omnivore, Decomposer, Producer, Predator, Prey, Competition  
-

Topic: Weather, Climate, and Atmospheric Processes  
 Subject(s): Science

Days: 0  
 Grade(s): 6th

**Key Learning: Pressure, temperature, moisture, and wind are used to describe, atmospheric conditions that affect regional weather or climate**

**Unit Essential Question(s): How are pressure, temperature, moisture, and wind used to describe atmospheric conditions that affect regional weather or climate?**

<p>Concept:  <b>Water systems impact local weather and climates of regions</b></p>	<p>Concept:  <b>Global patterns of atmospheric movement influence regional weather and climate</b></p>	<p>Concept:  <b>What interactions determine weather</b></p>
<p>Lesson Essential Question(s):                  How do water systems affect the formation of hurricanes? (A)</p> <p>What is lake effect snow? (A)</p> <p>How do land and water systems affect breezes? (A)</p>	<p>Lesson Essential Question(s):                  What technology is used to track global patterns of atmospheric movement? (A)</p> <p>How does a weather satellite help to track and predict regional weather and climate? (A)</p> <p>How does barometric pressure change weather patterns? (A)</p>	<p>Lesson Essential Question(s):                  How do air pressure and wind affect weather? (A)</p> <p>How do temperature and humidity affect weather? (A)</p> <p>How do clouds and precipitation affect weather? (A)</p>
<p>Vocabulary:                  Lake Effect Snow, Land/Ocean Breezes, Hurricanes</p>	<p>Vocabulary:                  Barometer, Anemometer, Psychrometer, Doppler Radar, Meteorologist, Forecast</p>	<p>Vocabulary:                  Air Pressure, Air Mass, Front, Humidity, Dew Point, Tornado, Cirrus, Stratus, Nimbus, Cumulus</p>

Additional Information:

Attached Document(s):

Vocab Report for Topic: Weather, Climate, and Atmospheric Processes

Subject(s): Science

Days: 0

Grade(s): 6th

**Concept: Water systems impact local weather and climates of regions**

Lake Effect Snow, Land/Ocean Breezes, Hurricanes

-

**Concept: Global patterns of atmospheric movement influence regional weather and climate**

Barometer, Anemometer, Psychrometer, Doppler Radar, Meteorologist, Forecast

-

**Concept: What interactions determine weather**

Air Pressure, Air Mass, Front, Humidity, Dew Point, Tornado, Cirrus, Stratus, Nimbus, Cumulus

-

Topic: Heat and Matter

Subject(s): Science

Days: 0

Grade(s): 6th

Key Learning:

Unit Essential Question(s): **How can energy be transferred from one place to another?**  
**How can substances be distinguished by their physical and chemical properties?**

Concept:  
**Distinguishing substances by their physical or chemical properties**

Concept:  
**Energy is transferred from one place to another**

Lesson Essential Question(s):  
What happens to matter as it is heated and cooled? (A)  
What are some uses of expansion and contraction? (A)  
What is heat? (A)  
What is the difference between heat and temperature? (A)

Lesson Essential Question(s):  
How is matter heated by conduction? (A)  
How is thermal energy transferred by convection? (A)  
How is energy transferred by radiation? (A)

Vocabulary:  
Freezing/Melting Points, Temperature, Contraction, Heat

Vocabulary:  
Convection, Conduction, Radiation, Thermal Energy, Conductor, Insulator

Additional Information:

Attached Document(s):

Vocab Report for Topic: Heat and Matter

Subject(s): Science

Days: 0

Grade(s): 6th

**Concept: Distinguishing substances by their physical or chemical properties**

Freezing/Melting Points, Temperature, Contraction, Heat

-

**Concept: Energy is transferred from one place to another**

Convection, Conduction, Radiation, Thermal Energy, Conductor, Insulator

-

Topic: Resources and Conservation

Subject(s): Science

Days: 0

Grade(s): 6th

**Key Learning: The environment is impacted as a result of the use of renewable and nonrenewable resources to provide for human needs.  
Water systems have characteristics that may have an impact on resources.**



**Unit Essential Question(s): How is the environment impacted as a result of the use of renewable and nonrenewable resources to provide for human needs?  
How do water systems impact resources?**



<p><b>Concept:</b> <b>The effects of human activities on local, regional, and global environments</b></p>	<p><b>Concept:</b> <b>How renewable and nonrenewable resources provide for human needs</b></p>	<p><b>Concept:</b> <b>Waste management effect on the environment</b></p>
<p><b>Lesson Essential Question(s):</b> How do people affect earth's resources? (A)</p> <p>What is pollution? (A)</p> <p>What pollutants are a result of human activities? (A)</p> <p>How can people protect and conserve resources? (A)</p>	<p><b>Lesson Essential Question(s):</b> How do people use renewable and nonrenewable resources? (A)</p> <p>How do renewable and nonrenewable resources differ? (A)</p> <p>How do renewable and nonrenewable resources provide for human needs? (A)</p>	<p><b>Lesson Essential Question(s):</b> How does waste management affect the environment? (A)</p> <p>How does recycling affect the environment? (A)</p> <p>What are the effects of incineration, landfills, and sewage treatment on the environment? (A)</p> <p>How does composting affect the environment? (A)</p>
<p><b>Vocabulary:</b> Pollution, Pollutant, Reservoir, Conservation, Stewardship</p>	<p><b>Vocabulary:</b> Renewable Resource, Nonrenewable Resource, Ore, Fossil Fuel, Solar Energy, Alternative Energy Source, Vent</p>	<p><b>Vocabulary:</b> Sewage, Recycling, Composting, Landfill, Incineration</p>

Topic: Resources and Conservation

Subject(s): Science

Days: 0

Grade(s): 6th

<p>Concept: <b>The long-term effects of using integrated pest management on the environment</b></p>	<p>Concept: <b>The effects of water systems on the environment</b></p>
---	--



<p>Lesson Essential Question(s): What are the long-term effects of pest management on the environment? (A)</p> <p>How do herbicides and pesticides affect the environment? (A)</p> <p>How do natural predators affect the environment? (A)</p> <p>How can bio-genetics for pest management effect the environment? (A)</p>	<p>Lesson Essential Question(s): How do water systems affect the environment? (A)</p> <p>What are the various water systems? (A)</p> <p>What are the relationships of different water systems to each other? (A)</p> <p>What are the relationships of different water systems to landforms? (A)</p>
--	---



<p>Vocabulary: Herbicide, Pesticide, Bio-genetics</p>	<p>Vocabulary: Wetlands, Watershed</p>
---	--

Additional Information:

Attached Document(s):

Vocab Report for Topic: Resources and Conservation

Subject(s): Science

Days: 0

Grade(s): 6th

**Concept: The effects of human activities on local, regional, and global environments**

Pollution, Pollutant, Reservoir, Conservation, Stewardship

-

**Concept: How renewable and nonrenewable resources provide for human needs**

Renewable Resource, Nonrenewable Resource, Ore, Fossil Fuel, Solar Energy, Alternative Energy Source, Vent

-

**Concept: Waste management effect on the environment**

Sewage, Recycling, Composting, Landfill, Incineration

-

**Concept: The long-term effects of using integrated pest management on the environment**

Herbicide, Pesticide, Bio-genetics

-

**Concept: The effects of water systems on the environment**

Wetlands, Watershed

-



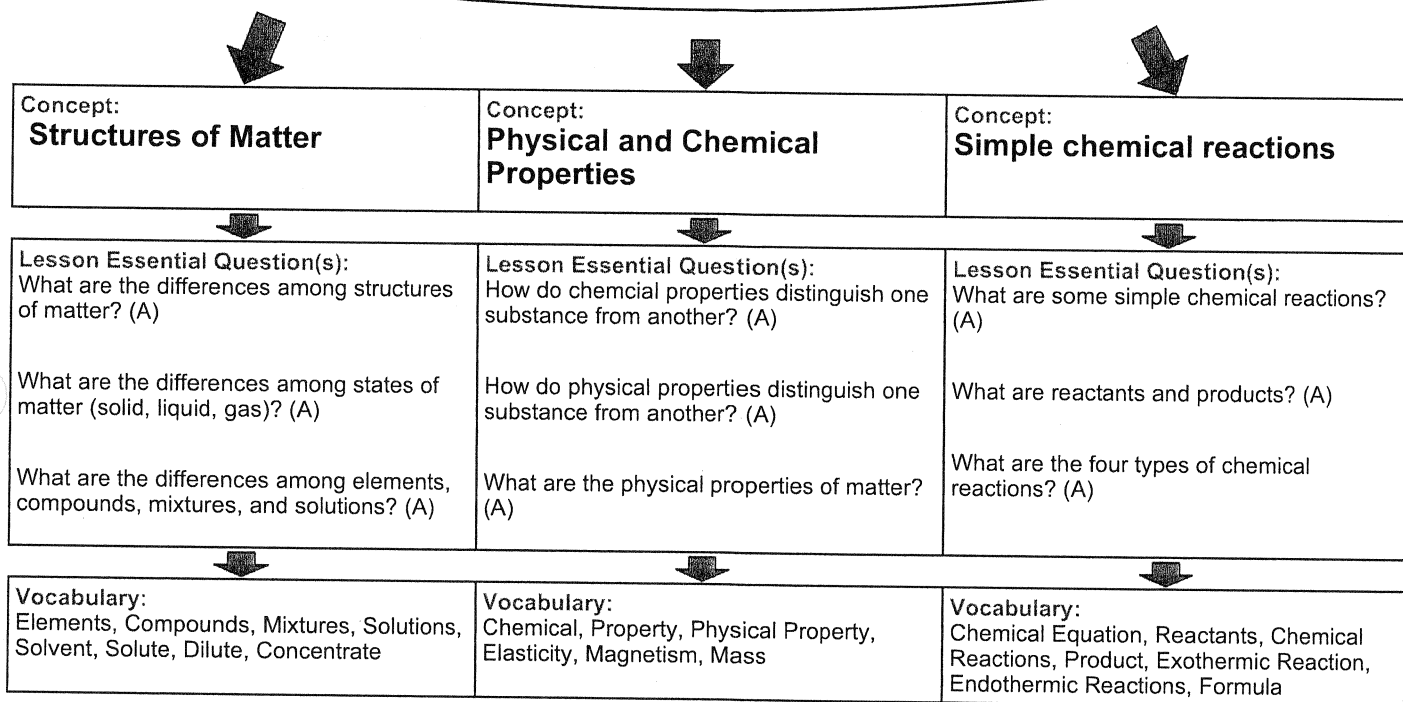
Topic: Changes in Matter

Subject(s): Science

Days: 0  
 Grade(s): 6th

Key Learning: **Matter has specific structure and properties. Multiple forces may affect the movement, speed, or direction of an object.**

Unit Essential Question(s): **What are the specific structure and properties of matter?  
 What forces may affect the movement, speed or direction of an object?**



Topic: Changes in Matter

Subject(s): Science

Days: 0

Grade(s): 6th

Concept: <b>Forces acting on objects</b>	Concept: <b>Kinetic and potential energy</b>	Concept: <b>Mechanical advantages help to do work</b>
Lesson Essential Question(s): How do forces impact on objects? (A)  How does gravity affect objects? (A)  How do balanced and unbalanced forces affect objects? (A)  How does friction affect objects? (A)	Lesson Essential Question(s): What is the difference between kinetic and potential energy? (A)	Lesson Essential Question(s): How do mechanical advantages help to do work? (A)  What are the six simple machines? (A)
Vocabulary: Friction, Gravity, Balanced, Unbalanced, Force, Net Force, Inertia, Acceleration, Speed, Relative Motion	Vocabulary: Kinetic Energy, Potential Energy	Vocabulary: Work, Lever, Pulley, Wedge, Inclined Plane, Wheel, Axel

Additional Information:
Attached Document(s):

Vocab Report for Topic: Changes in Matter

Subject(s): Science

Days: 0

Grade(s): 6th

**Concept: Structures of Matter**

Elements, Compounds, Mixtures, Solutions, Solvent, Solute, Dilute, Concentrate

-

**Concept: Physical and Chemical Properties**

Chemical, Property, Physical Property, Elasticity, Magnetism, Mass

-

**Concept: Simple chemical reactions**

Chemical Equation, Reactants, Chemical Reactions, Product, Exothermic Reaction, Endothermic Reactions, Formula

-

**Concept: Forces acting on objects**

Friction, Gravity, Balanced, Unbalanced, Force, Net Force, Inertia, Acceleration, Speed, Relative Motion

-

**Concept: Kinetic and potential energy**

Kinetic Energy, Potential Energy

-

**Concept: Mechanical advantages help to do work**

Work, Lever, Pulley, Wedge, Inclined Plane, Wheel, Axel

-

Topic: Light, Color, and Sound  
 Subject(s): Science

Days: 0  
 Grade(s): 6th

Key Learning: **Electrical, light and sound forms of energy can be transferred from place to place and can be converted into a different form of energy**

Unit Essential Question(s): **How can electric, light, and sound energy be transferred from place to place? How can they be converted into a different form of energy?**

<p>Concept:  <b>Energy is transferred from one place to another</b></p>	<p>Concept:  <b>The sun is a source of energy</b></p>	<p>Concept:  <b>Energy can be converted to a different form of energy</b></p>
<p>Lesson Essential Question(s):          How is energy transferred from one place to another? (A)           How does convection transfer energy? (A)           How does conduction transfer energy? (A)           How does radiation transfer energy? (A)</p>	<p>Lesson Essential Question(s):          How is the sun a source of energy? (A)           How do we use solar energy? (A)           How does solar energy impact the environment? (A)</p>	<p>Lesson Essential Question(s):          How can one form of energy be converted into a different form of energy? (A)           How can light be converted into a different form of energy? (A)           How can sound be converted into a different form of energy? (A)</p>
<p>Vocabulary:          Convection, Conduction, Radiation</p>	<p>Vocabulary:          Solar Energy</p>	<p>Vocabulary:</p>

Topic: Light, Color, and Sound

Subject(s): Science

Days: 0

Grade(s): 6th

<p>Concept: <b>There are various forms of energy</b></p>	<p>Concept: <b>There is a relationship between color and electromagnetic</b></p>
<p>Lesson Essential Question(s): What are the various forms of energy? (A)</p> <p>What is electrical energy? (A)</p> <p>What is light energy? (A)</p> <p>What is sound energy? (A)</p>	<p>Lesson Essential Question(s): What is the relationship between color and the electromagnetic spectrum? (A)</p> <p>What is electromagnetic spectrum? (A)</p> <p>What is visible light? (A)</p> <p>How do we see color? (A)</p>
<p>Vocabulary: Convex Mirror, Concave Mirror, Electrical Energy, Light Energy, Sound Energy, Photon, Frequency, Amplitude, Transverse Wave, Compressional Wave, Noise, Octave, Refraction, Focal Point, Laser Light, Intensity, Sonar, Music</p>	<p>Vocabulary: Opaque, Transparent, Electromagnetic, Spectrum</p>

<p>Additional Information:</p>
<p>Attached Document(s):</p>

Vocab Report for Topic: Light, Color, and Sound

Subject(s): Science

Days: 0

Grade(s): 6th

**Concept: Energy is transferred from one place to another**

Convection, Conduction, Radiation

-

**Concept: The sun is a source of energy**

Solar Energy

-

**Concept: There are various forms of energy**

Convex Mirror, Concave Mirror, Electrical Energy, Light Energy, Sound Energy, Photon, Frequency, Amplitude, Transverse Wave, Compressional Wave, Noise, Octave, Refraction, Focal Point, Laser Light, Intensity, Sonar, Music

-

**Concept: There is a relationship between color and electromagnetic**

Opaque, Transparent, Electromagnetic, Spectrum

-

Topic: Compositing and Structure of the Universe  
 Subject(s): Science

Days: 0  
 Grade(s): 6th

**Key Learning: There are relationships between and among the objects of our solar system**

**Unit Essential Question(s): What are the relationships between and among the objects of our solar system?**

<p>Concept:  <b>Patterns of Earth's movement in the solar system</b></p>	<p>Concept:  <b>The role of gravity as the force that governs the universe</b></p>	<p>Concept:  <b>Characteristics of celestial bodies in the solar system</b></p>
<p>Lesson Essential Question(s):                  What are the patterns of the Earth's movement in the solar system? (A)</p> <p>What are rotation and revolution? (A)</p> <p>What are the Moon's movements in relation to the Earth and the sun? (A)</p>	<p>Lesson Essential Question(s):                  What is the role of gravity as the force that governs the universe? (A)</p> <p>How do the Earth and the Moon interact? (A)</p> <p>How does gravity affect the solar system? (A)</p> <p>How does gravity affect stars and galaxies? (A)</p>	<p>Lesson Essential Question(s):                  What are the characteristics of celestial bodies in the solar system? (A)</p> <p>What are characteristics of the sun? (A)</p> <p>How does the sun differ from other celestial bodies in the solar system? (A)</p> <p>What are the similarities and differences between and among comets, asteroids, meteors, meteorites, meteoroids, and planets? (A)</p>
<p>Vocabulary:                  Rotation, Revolution, Phase, Eclipse, Moon, Solstice, Equinox</p>	<p>Vocabulary:                  Gravity, Tide, Satellite, Aurora, Galaxies, Galaxy</p>	<p>Vocabulary:                  Comet, Asteroid, Meteor, Meteorite, Meteoroid, Planet, Sunspot, Solar Flare, Corona, Fusion, Star</p>

Additional Information:

Attached Document(s):

Topic Report for Topic: **Compositing and Structure of the Universe**

Subject(s): Science

Days: 0

Grade(s): 6th

**Concept: Patterns of Earth's movement in the solar system**

Rotation, Revolution, Phase, Eclipse, Moon, Solstice, Equinox

-

**Concept: The role of gravity as the force that governs the universe**

Gravity, Tide, Satellite, Aurora, Galaxies, Galaxy

-

**Concept: Characteristics of celestial bodies in the solar system**

Comet, Asteroid, Meteor, Meteorite, Meteoroid, Planet, Sunspot, Solar Flare, Corona, Fusion, Star

-