

Young Scholars of Western Pennsylvania Charter School

6th grade Science Curriculum Framework

- Grade

6th Grade
S.6.A.1 Reasoning and Analysis

Big Idea

Essential Questions

Concepts

Competencies

Vocabulary

Standard(s)

Eligible Content

- Grade

Big Idea

Essential Questions

Concepts

Competencies

Vocabulary

Standard(s)

Eligible Content

- Grade
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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

When two or more different substances are mixed, a new substance with different properties may be formed.

Competencies

Generate and compare multiple solutions that meet the desired criteria of improving a property or a material within the constraints of changing the type of substances, the amount of substances used to make the material, and the temperature at which they are mixed.

Vocabulary

Chemical Change vs. Physical Change

Mass

Volume

Temperature

Standard(s)

3.2.3.A4, 3.2.4.A4

Eligible Content

S8.C.1.1.3

S8.A.1.3

S8.A.2.2

S8.A.2.1

- Grade

6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means.

Competencies

Argue from evidence to support the theory that matter is made of particles too small to be seen.

Vocabulary

Matter

Particles

Standard(s)

3.2.7.A2

Eligible Content

S8.C.1.1.2

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

Measurements of a variety of properties can be used to identify materials.

Competencies

Make observations and measurements to identify given materials based on their properties.

Vocabulary

Properties like:

Mass

Volume

Hardness

Moh's Scale

Streak Tests

Porosity

Solubility

Standard(s)

3.2.6.A5,

3.2.6.A1

Eligible Content

S8.C.1.1.2

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

The amount of matter is conserved when it changes form.

Competencies

Use simple models to describe that regardless of what reaction or change in properties occur; the total mass of the substances involved does not change.

Vocabulary

Conservation of Mass

Standard(s)

3.2.6.A3

Eligible Content

S8.C.1.1.3
S8.A.1.3
S8.A.2.2
S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

When two or more different substances are mixed, a new substance with different properties may be formed; such occurrences depend on the substances and the temperature.

Competencies

Investigate the interaction of two or more substances to provide evidence that when different substances are mixed, one or more new substances with different properties may or may not be formed.

Vocabulary

Mixtures vs. Compounds

Chemical Change

Standard(s)

3.2.6.A4,

3.2.7.A4

Eligible Content

S8.C.1.1.1

S8.A.1.3

S8.A.2.2

S8.A.2.1

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Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

No matter what reaction or change in properties occurs, the total mass of the substances does not change.

Competencies

Investigate and determine the effect on the total mass of matter when substances interact to form new substances.

Vocabulary

Chemical Change

Standard(s)

3.2.6.A3

Eligible Content

S8.C.1.1.3

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

No matter what reaction or change in properties occurs, the total mass of the substances does not change.

Competencies

Plan and carry out investigations to determine the effect on the total mass of a substance when the substance changes shape, phase, and/or is dissolved.

Vocabulary

Physical Changes

Dissolve

Standard(s)

3.2.6.A3

Eligible Content

S8.C.1.1.3

S8.A.1.3

S8.A.2.2

S8.A.2.1

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Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

All substances are made of atoms, which combine with one another in various ways.

Atoms form molecules that range in size and solids may be formed from molecules or extended structures with repeating subunits (e.g., crystals).

Competencies

Construct and use molecular-level models to explain that atoms combine to form new substances, comparing those with simple molecules to those with extended structures.

Vocabulary

Atoms

Nucleus

Electrons

Protons

Neutrons

Molecules

Compounds

Standard(s)

S8.C.1.1

3.4.7.A

3.2.6.A5

Eligible Content

S8.C.1.1.1

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

Pure substances are made from a single type of atom or molecule; each pure substance has characteristic physical and chemical properties that can be used to identify it.

Competencies

Plan investigations to generate evidence supporting the claim that one pure substance can be distinguished from another based on characteristic properties.

Vocabulary

Pure Substance

Characteristic Properties

Density

Boiling point

Melting point

Malleability

Conductivity

Flammability

Reactivity

Standard(s)

3.2.6.A2

3.2.6.A4

3.2.7.A1

Eligible Content

S8.C.1.1.2

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

In a liquid, the molecules are constantly in contact with others; in a gas, they are widely spaced except when they happen to collide. In a solid, atoms are closely spaced and may vibrate in position but do not change relative locations.

Competencies

Use a simulation or mechanical model to determine the effect on the temperature and motion of atoms and molecules of different substances when thermal energy is added or removed from the substance.

Vocabulary

Solid

Liquid

Gas

Molecular Motion

Thermal energy

Temperature

States of matter

Standard(s)

3.2.5.A1

3.2.6.A1

3.2.6.A5

Eligible Content

S8.C.1.1.2

S8.C.3.1.2

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

The changes of state that occur with variations in temperature or pressure can be described and predicted using these models of matter.

Competencies

Use a simulation or mechanical model to determine the effect on the temperature and motion of atoms and molecules of different substances when thermal energy is added or removed from the

substance.

Vocabulary

Temperature

Pressure

Change of State

Standard(s)

3.2.5.A1

3.2.6.A1

3.2.6.A5

Eligible Content

S8.C.3.1.2

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants.

Competencies

Develop representations of reactants and products showing how atoms regroup during chemical reactions to account for the conservation of mass.

Vocabulary

Reactants

Products

Standard(s)

S8.C.1.1

3.4.7.A,

3.2.6.A4,

3.2.7.A4

Eligible Content

S8.C.1.1.3

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

The total number of each type of atom is conserved, and thus the mass does not change.

Competencies

The total number of each type of atom is conserved, and thus the mass does not change.

Vocabulary

Conservation of Mass

Standard(s)

S8.C.1.1

3.4.7.A,

3.2.6.A4,

3.2.7.A4

Eligible Content

S8.C.1.1.3

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants.

Competencies

Analyze and generate explanations from the comparison of the physical and chemical properties of reacting substances to the properties of new substances produced through chemical reactions.

Vocabulary

Chemical Properties

Physical Properties

Standard(s)

S8.C.1.1

3.4.7.A,

3.2.6.A4,

3.2.7.A4

Eligible Content

S8.C.1.1.1

S8.C.1.1.2

S8.C.1.1.3

S8.A.1.3

S8.A.2.2

S8.A.2.1

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6

Big Idea

Matter can be understood in terms of the types of atoms present and the interactions both between and within atoms.

Essential Questions

How can one explain the structure, properties, and interactions of matter?

Concepts

Some chemical reactions release energy, others store energy.

Competencies

Design, construct, and test a device that either releases or absorbs thermal energy by chemical processes.

Vocabulary

Exothermic
Endothermic

Standard(s)

3.2.6.A3,
3.2.7.A3

Eligible Content

S8.C.1.1.3
S8.C.3.1.3
S8.A.1.3
S8.A.2.2
S8.A.2.1

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6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Unicellular organisms (microorganisms), like multicellular organisms, need food, water, a way to dispose of waste, and an environment in which they can live.

Competencies

Investigate and generate evidence that unicellular and multicellular organisms survive by obtaining food and water, disposing of waste, and having an environment in which to live.

Vocabulary

Unicellular

Multicellular

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1

S8.B.1.1.2

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6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

In multicellular organisms, the body is a system of multiple interacting subsystems.

Competencies

Construct models and representations of body systems to demonstrate how multiple interacting subsystems and structures work together to accomplish specific functions.

Vocabulary

Systems
Subsystems

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1
S8.B.1.1.3
S8.B.1.1.4

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6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Organisms are affected by both genetic factors and local conditions.

Competencies

Use evidence to support an explanation of how environmental and genetic factors affect the growth of organisms.

Vocabulary

Genetic

Standard(s)

3.1.8.C

3.4.8.E

Eligible Content

S8.B.2.1.1

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6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Organisms are affected by both genetic factors and local conditions.

Competencies

Investigate and present evidence that plants continue to grow throughout their life through the production of new plant matter via photosynthesis.

Vocabulary

Photosynthesis

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1

- Grade

6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring.

Competencies

Plan and conduct investigations to gather evidence for the relationship among specialized structures, specific behaviors, and the successful reproduction.

Vocabulary

Sexual Reproduction

Asexual Reproduction

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1

S8.B.1.1.2

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6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring.

Competencies

Plants reproduce in a variety of ways including using animals, wind, and water as a means of seed transfer and pollination.

Vocabulary

Pollination

Transfer

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1

S8.B.1.1.2

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6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Animals and plants alike generally need to take in air and water; animals must take in food, and plants need light and minerals.

Competencies

Construct and communicate models of food webs that demonstrate the transfer of matter and energy among organisms within an ecosystem.

Vocabulary

Food Webs

Ecosystem

Standard(s)

3.1.7.A8

Eligible Content

S8.B.3.1.1

S8.B.3.1.3

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Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Animals and plants alike generally need to take in air and water; animals must take in food, and plants need light and minerals.

Competencies

Use models to communicate that plants obtain matter to grow chiefly from the air and water, and energy to grow from the sun.

Vocabulary

Standard(s)

3.1.7.A8

Eligible Content

S8.B.3.1.1

S8.B.3.1.3

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6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Within cells, special structures are responsible for particular functions.

Competencies

Construct an explanation for the function of specific parts of cells including: nucleus, chloroplasts, and mitochondria and the structure of the cell membrane and cell wall for maintaining a stable internal environment.

Vocabulary

Nucleus

Chloroplast

Mitochondria

Cell Membrane

Cell Wall

Stable

Cell

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1

S8.B.1.1.4

- Grade

6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

All living things are made up of cells and may consist of one single cell or many different numbers and types of cells.

Competencies

Investigate and present evidence that the structure of cells in both unicellular and multicellular organisms is related to how cells function.

Vocabulary

Multicellular

Unicellular

Organism

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1

S8.B.1.1.4

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6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Plants, algae (including phytoplankton), and many microorganisms use the energy from light to make sugars from carbon dioxide and water through the process of photosynthesis, which also releases oxygen.

Competencies

Develop an explanation for the role of photosynthesis in the cycling of matter and flow of energy on Earth. Plan and carry out investigations to determine the role of light in plant growth.

Vocabulary

Algae

Phytoplankton

Standard(s)

3.1.7.A8

Eligible Content

S8.B.3.1.1

S8.B.3.1.3

• Grade

6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

In most animals and plants, oxygen reacts with carbon-containing molecules (sugars) to provide energy and produce carbon-dioxide.

Competencies

Use models to explain the transfer of energy into, out of, and within ecosystems.

Vocabulary

Model

Transfer of Energy

Carbon-Dioxide

Standard(s)

3.1.7.A8

Eligible Content

S8.B.3.1.1

S8.B.3.1.2

- Grade

6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Animals obtain food from eating plants or eating other animals.

Competencies

Investigate how food provides animals with the materials they need for body repair and growth, and is digested by animals to release the energy they need to maintain body warmth and allow for motion.

Vocabulary

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1
S8.B.1.1.4

- Grade

6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Within individual organisms, food moves through a series of chemical reactions to support growth or to release energy.

Competencies

Use evidence to support an explanation that matter is conserved when molecules from food react with oxygen in the environment and cycle repeatedly between living and non-living components of ecosystem.

Vocabulary

Standard(s)

3.1.8.A

3.3.8.A

3.4.8.B

4.3.8.A

4.5.8.A

Eligible Content

S8.B.3.1.1

S8.B.3.3.2

S8.B.3.3.3

S8.B.3.3.4

- Grade

6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Organisms use sense receptors to responds to different inputs, resulting in immediate behaviors or memories.

Competencies

Provide explanations of how sense receptors respond to stimuli by transmitting messages as signals that travel along the nerve cells to the brain to be processed for immediate behavior or stored as information.

Vocabulary

Receptor

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1

- Grade

6

Big Idea

All organisms are made of cells and can be characterized by common aspects of their structure and functioning.

Essential Questions

How do organisms live, grow, respond to their environment, and reproduce?

Concepts

Organisms use sense receptors to responds to different inputs, resulting in immediate behaviors or memories.

Competencies

Communicate an explanation for how the storage of long-term memories requires changes in the structure and function of millions of interconnected nerve cells in the brain.

Vocabulary

Standard(s)

3.1.8.A

Eligible Content

S8.B.1.1.1

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6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life.

Competencies

Ask researchable questions about the ways organisms obtain matter and energy across multiple and varied ecosystems.

Vocabulary

Researchable

Species

Web of Life

Standard(s)

3.1.6.A2

Eligible Content

S8.B.3.1.1

- Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die.

Competencies

Use models to trace the cycling of particles of matter between the air and soil and among plants, animals, and microbes.

Vocabulary

Matter

Cycles

Microbes

Standard(s)

3.1.6.A2

Eligible Content

S8.B.3.1.1

S8.B.3.1.2

• Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die.

Competencies

Use models to describe how decomposition eventually restores (recycles) some materials back to the soil for plants to use.

Vocabulary

Decomposition

Microbes

Standard(s)

3.1.6.A2

Eligible Content

S8.B.3.1.1

S8.B.3.1.2

S8.B.3.1.3

- Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Organisms, and populations of organisms, are dependent on their environmental interactions with other living things and nonliving factors.

Competencies

Cite examples of how organisms and populations of organisms depend on their environmental interactions.

Vocabulary

Interaction
Dependent

Standard(s)

3.1.8.A
3.4.8.A
3.4.8.B
4.2.8.C
4.4.8.A
4.5.8.A
4.5.8.C

4.5.8.D

Eligible Content

S8.B.3.2.1

S8.B.3.2.2

S8.B.3.2.3

S8.A.1.1.1

S8.A.1.1.2

S8.A.1.1.3

S8.A.1.1.4

S8.A.1.2.2

- Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Growth of organisms and population increases are limited by access to resources.

Competencies

Use a model to demonstrate the effect of resource availability on organisms and populations of organisms in an ecosystem.

Vocabulary

Resource Availability

Standard(s)

3.1.8.A
3.3.8.A
3.4.8.B
4.3.8.A
4.4.8.A
4.5.8.A
4.5.8.C
4.5.8.D

Eligible Content

S8.B.3.3.1
S8.A.1.2.4

- Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Predatory interactions may reduce the number of organisms or eliminate whole populations of organisms. Mutually beneficial interactions, in contrast, may become so interdependent that each organism requires the other for survival.

Competencies

Construct explanations to describe competitive, predatory, and mutually beneficial interactions as patterns across various ecosystems.

Vocabulary

Predatory
Mutually Beneficial
Competitive

Standard(s)

3.1.7.A2

Eligible Content

S.8.3.1.3

- Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Food webs are models that demonstrate how matter and energy is transferred between producers, consumers, and decomposers as the three groups interact within an ecosystem.

Competencies

Investigate the cycling of matter among living parts of ecosystems to explain the flow of energy and conservation of matter.

Vocabulary

Conservation of Matter
Flow of Energy

Producer
Consumer
Decomposer

Standard(s)

3.1.7.A.2

Eligible Content

S8.B.3.1.1

• Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Food webs are models that demonstrate how matter and energy is transferred between producers, consumers, and decomposers as the three groups interact within an ecosystem.

Competencies

Use models to explain the transfer of energy into, out of, and within ecosystems.

Vocabulary

Food Web
Model
Transfer of Energy

Standard(s)

3.1.7.A2

Eligible Content

S8.B.3.1.1

- Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Organisms obtain gases, water, and minerals from the environment, and release waste matter (gas, liquid, or solid) back into the environment.

Competencies

Design and construct a model to describe the interactions of systems within an ecosystem in terms of the flow of energy, cycling of matter, and the conditions for a healthy ecosystem.

Vocabulary

Flow of Energy

Cycling of Matter

Gases

Minerals

Waste Matter

Standard(s)

3.1.7.A2

Eligible Content

S8.B.3.1.1

- Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment.

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Ecosystems are dynamic in nature; their characteristics can vary over time.

Competencies

Use evidence to support arguments that changing any physical or biological component of an ecosystem may result in shifts in the populations of species in the ecosystem.

Vocabulary

Ecosystem

Standard(s)

3.1.8.A

3.4.8.A

4.2.8.C

Eligible Content

S8.B.3.2.1

S8.B.3.2.3

- Grade

6

Big Idea

Organisms grow, reproduce, and perpetuate their species by obtaining necessary resources through interdependent relationships with other organisms and the physical environment.

Essential Questions

How and why do organisms interact with their environment and what are the effects of these interactions?

Concepts

Biodiversity describes the variety of species found in Earth's terrestrial and oceanic ecosystems.

Competencies

Use models to explain why the completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health.

Vocabulary

Biodiversity

Terrestrial

Oceanic

Standard(s)

3.1.8.A

3.4.8.A

4.2.8.C

3.1.8.C1

Eligible Content

S8.B.3.2.2