

Decision 1: Curriculum Map

Course: Science

Topic: Continuity of Life

Subject(s): Science

Grade(s): 5

Days: ½ year – 15, Full year - 30

Optional
Instructional Tools:

Unit Essential Question(s):

How are individuals characteristics acquired?
How do individuals characteristics change?

Key Learning(s):

Differentiate between inherited and acquired characteristics of plants and animals.

Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment.

Give examples of how inherited characteristics (e.g., shape of beak, length of neck, location of eyes, shape of teeth) may change over time as adaptations to changes in the environment that enable organisms to survive.

Concept: All characteristics of organisms are inherited or acquired.	Concept: As environments change organisms adapt their behaviors to survive in that given environment.	Concept: Genes can randomly change or mutate causing changes in certain traits of the offspring.
Lesson Essential Questions: How do organisms acquire characteristics?	Lesson Essential Questions: How do organisms adapt to their environments?	Lesson Essential Questions: What causes mutations?
Vocabulary: inherit acquire organism	Vocabulary: environment adaptation organism	Vocabulary: genes mutation

Concept: Scientific Inquiry Process	Concept:	Concept:
Lesson Essential Questions: How do scientists select appropriate tools and observe and collect data to test, argue and defend scientific phenomena?	Lesson Essential Questions:	Lesson Essential Questions:
Vocabulary:	Vocabulary:	Vocabulary:

Decision 1: Curriculum Map

Course: Science

Topic: Earth Features and Processes that Change Earth and Its Resources

Subject(s): Math

Grade(s): 5

Days: ½ year – 18, full year 36

**Optional
Instructional Tools:**

Unit Essential Question(s):

What are earth's features and resources change over time?

Key Learning(s):

Explain how soil is formed

Write about one scientific discovery based on fossils found (Waterhouse Hawkins)

Sequence the change in earth due to erosion and deposition of sediment.

Demonstrate how water changes from one phase to another within the environment (e.g. evaporation, condensation, etc.)

Compare and contrast the Appalachians and the Rockies

Compare and contrast several wetlands of the United States

Scientific Inquiry Processess

Concept: Soil is a system composed of weathered rock and decomposed organic remains with living and non-living components.	Concept: Fossils uncover historical information and changes over time.	Concept: Erosion and deposition of sediment changes earth's physical features.
Lesson Essential Questions: What is the composition of soil?	Lesson Essential Questions: How do scientists use fossils to learn about the past?	Lesson Essential Questions: What two processes change earth's features slowly?
Vocabulary: soil	Vocabulary: fossil	Vocabulary: erosion deposition sediment

Concept: Water changes form and function within the environment.	Concept: Geological processes from the past such as erosion, movement of lithospheric plates, and changes in the composition of the atmosphere are similar to those today.	Concept: The United States consists of several different types of wetlands.
Lesson Essential Questions: What are the various forms of water in the water cycle?	Lesson Essential Questions: How do erosion, plate movement and atmospheric conditions change the earth's surface?	Lesson Essential Questions: What different wetlands make up our he national and Pennsylvania ecosystems?
Vocabulary: water cycle	Vocabulary: crust lithosphere plates	Vocabulary: wetland

Concept: Science Inquiry Process	Concept:	Concept:
Lesson Essential Questions: How do scientists select appropriate tools and observe and collect data to test, argue and defend scientific phenomena?	Lesson Essential Questions:	Lesson Essential Questions:
Vocabulary: N/A	Vocabulary:	Vocabulary:

Decision 1: Curriculum Map**Course: Science****Topic: Ecological Behavior and Systems****Subject(s): Science****Grade(s): 5**

Days: ½ year – 27, Full time - 54

**Optional
Instructional Tools:****Unit Essential Question(s):**

What factors determine how an organism behaves and survives?

Key Learning(s):

Explain predator relationships and the unique roles of producers/consumers and decomposers.

Describe different food webs including a food web containing humans.

Investigate optimal conditions of soil, water, nutrient, and light amounts for plants and animals.

Explain how each plant part helps the plant to survive in its environment.

Explain how each animal part helps the animal to survive in its environment.

Identify plant and animal pests

Explain how specific adaptations can help organisms survive in their environment

Concept: Producers, consumers and decomposers have unique roles within an ecosystem.	Concept: Energy transfers from one organism to another in a food web.	Concept: The condition of soil and the amounts of water, nutrients and light affect plant and animal growth.
Lesson Essential Questions: What are the roles of producers, consumers and decomposers within an ecosystem?	Lesson Essential Questions: How does energy move in a food web?	Lesson Essential Questions: What factors of soil and water affect plant and animal growth?
Vocabulary: niches producer consumer decomposer ecosystem herbivore carnivore omnivore predator prey	Vocabulary: food web	Vocabulary:

Concept: Plant and animal structures contribute to their ability to make and find food and reproduce.	Concept: Pest is an organism that competes with humans for the same resource.	Concept: Specific adaptations (body/behavior) help organisms survive in their environment.
Lesson Essential Questions: What structures contribute to a plant or animal's ability to make and find food and reproduce?	Lesson Essential Questions: What is a pest?	Lesson Essential Questions: What adaptations help organisms survive in their environment?
Vocabulary: structure	Vocabulary: pest competitor resource	Vocabulary: adaptations

Concept: Science Inquiry Process	Concept:	Concept:
Lesson Essential Questions: How do scientists select appropriate tools and observe and collect data to test, argue and defend scientific phenomena?	Lesson Essential Questions:	Lesson Essential Questions:
Vocabulary:	Vocabulary:	Vocabulary:

Decision 1: Curriculum Map

Course: Science

Topic: Force and Motion

Subject(s): Science

Grade(s): 5

Days: ½ year – 25, full year - 50

Optional
Instructional Tools:

Unit Essential Question(s):

How do systems provide an advantage and change the direction of force?

Key Learning(s):

Differentiate and classify the 3 levels of levers.

Differentiate between fixed and moveable pulleys.

Describe how direction of a simple machine results in mechanical advantage or no mechanical advantage.

Compare the advantages and disadvantages of directional energy using a two-pulley system.

Use a pulley as a model to predict the effort needed to lift a load and its relationship to the weight of the load and the number of ropes supporting it.

Measure and collect data in Newtons.

Design a vehicle that applies a push and/or pull and describe the positions of potential and kinetic energy.

Compare and predict the affect of motion of a vehicle depending on varied amounts of mass.

Given a problem, design, plan and implement a solution.

Compare the positions of effect to determine mechanical advantage.

Scientific Inquiry Process

<p>Concept: 3 levels of levers</p>	<p>Concept: Pulleys can be fixed and moveable</p>	<p>Concept: Mechanical advantage</p>
<p>Lesson Essential Questions: What is the use of a lever? What are the 3 levels of levers? How does distance from the fulcrum determine the effort needed to lift a load?</p>	<p>Lesson Essential Questions: What are fixed and moveable pulleys?</p>	<p>Lesson Essential Questions: How does direction determine mechanical advantage?</p>
<p>Vocabulary: lever class 1 lever class 2 lever class 3 lever load fulcrum effort pivot</p>	<p>Vocabulary: pulley fixed pulley moveable pulley gravity</p>	<p>Vocabulary: mechanical advantage simple machine</p>

Concept: Directional energy of a two-pulley system	Concept: Number of ropes in a pulley system	Concept: Newtons
Lesson Essential Questions: What are the advantages and disadvantages of directional energy using a two-pulley system?	Lesson Essential Questions: How does the number of ropes determine the advantage to lift a load?	Lesson Essential Questions: How is force measured?
Vocabulary: directional energy advantage disadvantage	Vocabulary: load pulley system	Vocabulary: Newton

Concept: Potential and kinetic energy	Concept: Affect of motion	Concept: System
Lesson Essential Questions: What is the difference between potential and kinetic energy?	Lesson Essential Questions: What is the relationship between the amount of mass and motion?	Lesson Essential Questions: How does the set-up of a system determine its function?
Vocabulary: energy potential energy kinetic energy push pull gravity friction	Vocabulary: mass	Vocabulary: system

Concept: Positions of mechanical advantage	Concept: Newton's Three Laws	Concept:
Lesson Essential Questions: How does the position of mechanical effort determine its advantage?	Lesson Essential Questions: What are Newton's Three Laws?	Lesson Essential Questions:
Vocabulary: position mechanical advantage	Vocabulary: motion Newton	Vocabulary:

Decision 1: Curriculum Map

Course: Science

Topic: Structure and Function of Organisms

Subject(s): Science

Grade(s):5

Days: ½ year – 5 days, full year – 10 days

Optional
Instructional Tools:

Unit Essential Question(s):

What is the basic frame work of all living things?

How do living things progress from birth to death?

Key Learning(s):

Describe the life cycles of different organisms (e.g. moth, grasshopper, frog, seed-producing plant)

Identify similarities and differences between living organisms, ranging from single-celled and multi-cellular organisms through the use of microscopes, video, and other media.

Label parts of plant and animal cells.

Compare and contrast plant and animal cells

Scientific Inquiry Process

Concept: There are similarities and differences between living things and their life processes.	Concept: All living things are made up of smaller units called cells.	Concept: There are defining structures of cells with plants and animals.
Lesson Essential Questions: What is a life-cycle	Lesson Essential Questions: What is the building block of all living things?	Lesson Essential Questions: What are the different parts of plant and animal cells?
Vocabulary: life cycle	Vocabulary: cell single-celled multi-cellular organism	Vocabulary: cell wall nucleus cytoplasm vacuole cell membrane chloroplast

Concept: Science Inquiry Process	Concept:	Concept:
Lesson Essential Questions: How do scientists select appropriate tools and observe and collect data to test, argue and defend scientific phenomena?	Lesson Essential Questions:	Lesson Essential Questions:
Vocabulary: n/a	Vocabulary:	Vocabulary:

Attached Document(s):