

Course Description

Power Standards

- ScPS1 The student will be able to evaluate the principles of a scientific investigation.
- ScPS2 The students will be able to justify the formation, structure, composition, and motion of the solar system.
- ScPS3 The students will be able to discover how geoscience processes have changed Earth's surface.
- ScPS4 The students will be able to demonstrate understanding of weather and climate concepts.

Learning target

- ScPS1.LT1 I can distinguish scientific variables as independent, dependent, and constants in scientific investigations.
- ScPS1.LT2 I can evaluate the principles of a scientific investigation through engineering and design processes.
- ScPS2.LT1 I can describe patterns on Earth and Moon created by its tilt and movement in the solar system.
- ScPS2.LT2 I can analyze the formation and distribution of objects in space.
- ScPS3.LT1 I can explain the external and internal processes of the rock cycle and mineral formation.
- ScPS3.LT2 I can describe the driving mechanisms of plate tectonics and their results on Earth's surface.
- ScPS3.LT3 I can describe the organization of geologic time based on the events in Earth's history.
- ScPS4.LT1 I can conclude how motions and interaction of air masses and oceanic circulations result in changes in weather conditions.
- ScPS4.LT2 I can explore the factors that have caused a rise in global temperatures over the past century.

Course Details

UNIT: 1. Scientific Investigation -- 4 Week(s)

UNIT: 2. Space Systems -- 8 Week(s)

UNIT: 3. Geoscience Processes -- 11 Week(s)

UNIT: 4. Weather and Climate -- 9 Week(s)

Course Description

Seventh grade science is designed to help students understand concepts in physical science. As they continue to build upon scientific knowledge acquired in earlier grades, they will participate in a variety of activities and work settings. Topics include: matter and energy, electricity and magnetism, waves, sound and light, force, motion, and simple machines. Scientific investigation is embedded in all topics.

Power Standards

1. The student will be able to conduct valid experiments.
2. The student will be able to analyze physical and chemical properties and changes of matter.
3. The student will be able to analyze the effects of different forces.
4. The student will be able to analyze how the different forms of energy travel.
5. The student will be able to predict wave movement and properties.
6. The student will be able to interpret Earth's systems.

Learning target

- 1.1 I can conduct a valid experiment.
- 2.1 I can develop a model that describes the changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.
- 2.2 I can compare the difference between physical and chemical changes and properties of matter.
- 3.1 I can conduct and evaluate an investigation to change an object's motion or force needed to move the object.
- 4.1 I can conduct an investigation to provide evidence that magnetic and electric forces exist between objects that are not in contact.
- 4.2 I can differentiate between different forms of energy.
- 4.3 I can evaluate scenarios to determine the type of heat transfer from one object to another.
- 5.1 I can analyze how properties of a wave can affect sound.
- 5.2 I can evaluate how the type of medium will affect how waves are reflected, absorbed, or transmitted.
- 6.1: I can identify if a substance is a rock or mineral by utilizing its properties and characteristics.

Course Details

UNIT: Scientific Inquiry -- 6 Week(s)

UNIT: Rocks and Minerals -- 3 Week(s)

UNIT: Matter: Chemical vs. Physical -- 6 Week(s)

UNIT: Heat -- 3 Week(s)

UNIT: Forces, Work, and Machines -- 4 Week(s)

UNIT: Energy -- 2 Week(s)

UNIT: Light & EM Spectrum, Sound, Waves -- 4 Week(s)

UNIT: Waves -- 3 Week(s)

UNIT: Magnetism & Electricity -- 6 Week(s)

Course Description

This is a general science class with emphasis on life sciences. Topics include: cells (parts and processes), characteristics, adaptations, and interactions of living things, and human body systems. Scientific investigations and lab practices will be incorporated through each unit topic.

Power Standards

1. The student will be able to design and conduct experiments using reasoning and critical thinking.
2. The student will be able to investigate changes in ecosystems and interactions of organisms with their environment.
3. The student will be able to explain the characteristics and interactions of living organisms.

Learning target

- 1.1 I can design and conduct a valid experiment with multiple trials.
- 2.1 I can predict how certain adaptations, such as behavior, body structure, or coloration, may offer a survival advantage to an organism in a particular environment.
- 2.2 I can diagram and describe the transfer of energy in an aquatic food web and a land food web with reference to producers, consumers, decomposers, scavengers, and predator/prey relationships.
- 2.3 I can predict the possible effects of changes in the number and types of organisms in an ecosystem on the populations of other organisms within that ecosystem.
- 2.4 I can identify the factors that affect the number and types of organisms an ecosystem can support.
- 2.5 I can predict the impact (beneficial or harmful) of a natural environmental change on the organisms in an ecosystem.
- 3.1 I can compare and contrast the following plant and animal cell structures: cell membrane, nucleus, cell wall, chloroplast, and cytoplasm.
- 3.2 I can describe photosynthesis is a chemical change with reactants and products that takes place in the presence of light and chlorophyll.
- 3.3 I can describe how oxygen is needed by all cells of most organisms for the release of energy from nutrient (sugar) molecules.
- 3.4 I can compare and contrast the processes of asexual and sexual reproduction, including the type and number of cells involved and the number of gene sets passed from parent(s) to offspring..
- 3.5 I can identify and contrast the structures of plants and animals that serve similar functions.
- 3.6 I can explain the interactions between the human body systems.
- 3.7 I can differentiate between infectious and noninfectious diseases.

Course Details

UNIT: Introduction into Scientific Investigation -- 6 Day(s)

UNIT: Ecology 1 -- 5 Week(s)

UNIT: Ecology 2 -- 5 Week(s)

UNIT: Classification -- 11 Day(s)

UNIT: Cells: Parts and Process -- 16 Day(s)

UNIT: Cells: Division -- 8 Day(s)

UNIT: Plants -- 9 Day(s)

UNIT: Human Body -- 15 Day(s)

2016-2017 Science 8

Raymore-Peculiar
Science
Grade 8, Duration 1 Year, 1 Credit
Required Course

UNIT: Scientific Investigation – 2 Week(s)