

Ridgefield Public Schools

Science 6 Curriculum at a Glance

Overview

This course model arranges the Performance Expectations (PEs) outlined in the first year of the middle school conceptual progressions model from the Next Generation Science Standards (NGSS) into five different bundles of PEs using a phenomenon-based arrangement. The bundles in this model follow a conceptual flow throughout the year. One bundle focuses on the relationship between resource availability and geoscience processes. Another bundle focuses on energy flows and changes in Earth Surfaces. The remaining three bundles focus on matter, object interactions, and collisions.

Bundles (Units of Study)
Bundle 1 - Natural Resources Driving Question: How does the Earth's uneven distribution of natural resources cause predictable patterns amongst populations of organisms in different ecosystems? Enduring Understandings: • Resource availability affects organisms and populations of organisms in an ecosystem. • Patterns can be used to predict interactions among organisms across multiple ecosystems. • Past and current Geoscience processes caused uneven distribution of Earth's minerals, energy, and ground water resources. • Matter and energy is cycled among both the living and nonliving parts of an ecosystem.
Bundle 2 - Earth's Cycles Driving Question: How does energy drive patterns of continual change and cycling of materials throughout Earth's history? Enduring Understandings:



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- The cycling of water through Earth's systems is driven by energy from the sun and the force of gravity.
- Geoscience processes have changed Earth's surface throughout its history.
- Understand the energy flow that drives cycling of Earth's materials.
- The distribution of fossils and rocks, continental shapes, and seafloor structures provide evidence of past plate motions.

Bundle 3 - Objects Interact (Magnetic and Electric Forces)

Driving Question: How do magnetic and electric forces affect objects from a distance?

Enduring Understandings:

- Electric and magnetic forces can create fields that exert forces on each other even though the objects are not in contact.
- The strength of the forces can be affected by various factors

Bundle 4 - Components and Characteristics of Matter

Driving Question: How do the unseen patterns in atomic structure cause matter to combine in a variety of ways to create substances with specific physical and chemical properties?

Enduring Understandings:

- Atoms are the building blocks of molecules and combine in various ways.
- Pure substances have identifying chemical and physical properties.
- When chemical reactions occur properties of substances change.
- Understand that synthetic materials come from natural resources that can impact society.
- In chemical reactions the number of atoms does not change and therefore mass is conserved.
- Chemical reactions can either absorb or release energy.
- Particles combine to form the variety of matter one observes

Bundle 5 - Objects Collide (Motion)

Driving Question: How can the energy of objects change due to interactions within a system?

Enduring Understandings:

- When interaction of objects occurs and their position changes it causes the potential energy stored in the system to change.



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- Kinetic energy of an object changes depending on both the mass and the speed of the object.
- An object's motion is determined by the sum of the forces applied to it and the object's mass. (Newton's 2nd Law of motion)
- When two objects collide there is an action- reaction relationship. (Newton's 3rd Law of motion)

