**K-5 Science Essential Standards**

Kindergarten

Forces and Motion:

* Understand the positions and motions of objects and organisms observed in the environment.

Matter, Properties, and Change:

* Understand how objects are described based on their physical properties and how they are used.

Earth Systems, Structures, and Processes:

* Understand change and observable patterns of weather that occur from day to day and throughout the year.

Structures and Functions of Living Organisms:

* Compare characteristics of animals that make them alike and different from other animals and nonliving things.

1st Grade

Forces and Motion:

* Understand how forces (pushes or pulls) affect the motion of an object.

Earth in the Universe:

* Recognize the features and patterns of the earth/moon/sun system as observed from Earth.

Earth Systems, Structures, and Processes:

* Understand the physical properties of Earth materials that make them useful in different ways.

Ecosystems:

* Understand the characteristics of various environments and behaviors of humans that enable plants and animals to survive.

Molecular Biology:

* Summarize the needs of living organisms for energy and growth.

2nd Grade

Forces and Motion:

* Understand the relationship between sound and vibrating objects.

Matter, Properties and Change:

* Understand the properties of solids and liquids and the changes they undergo.

Earth Systems, Structures and Processes:

* Understand patterns of weather and factors that affect weather.

Structures and Functions of Living Organisms:

* Understand animal life cycles.

Evolution and Genetics:

* Remember that organisms differ from or are similar to their parents based on the characteristics of the organism.

3rd Grade

Forces and Motion:

* Understand motion and factors that affect motion

Matter, Properties and Change:

* Understand the structure and properties of matter before and after they undergo a change.

Energy: Conservation and Transfer:

* Recognize how energy can be transferred from one object to another.

Earth in the Universe:

* Recognize the major components and patterns observed in the earth/moon/sun system.

Earth Systems, Structures and Processes:

* Compare the structures of the Earth’s surface using models or three-dimensional diagrams.

Structures and Functions of Living Organisms:

* Understand human body systems and how they are essential for life: protection, movement and support.

Ecosystems:

* Understand how plants survive in their environments.

4th Grade

Forces and Motion:

* Explain how various forces affect the motion of an object.

Matter, Properties and Change:

* Understand the composition of matter before and after they undergo a change or interaction.

Energy: Conservation and Transfer:

* Recognize that energy takes various forms that may be grouped based on their interaction with matter.

Earth in the Universe:

* Explain the causes of day and night and phases of the moon.

Earth History:

* Understand the use of fossils and changes in the surface of the earth as evidence of the history of Earth and its changing life forms.

Ecosystems:

* Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in changing habitats.

Molecular Biology

* Understand food and the benefits of vitamins, minerals and exercise.

5th Grade

Forces and Motion:

* Understand force, motion and the relationship between them.

Matter, Properties and Change:

* Understand the interactions of matter and energy and the changes that occur.

Energy: Conservation and Transfer:

* Explain how the properties of some materials change as a result of heating and cooling.

Earth Systems, Structures and Processes:

* Understand weather patterns and phenomena, making connections to the weather in a particular time and place.

Structures and Functions of Living Organisms:

* Understand how structures and systems of organisms (to include the human body) perform functions necessary for life.

Ecosystems:

* Understand the interdependence of plants and animals with their ecosystem.

Evolution and Genetics:

* Understand why organisms differ from or are similar to their parents based on the characteristics of the organism.