

Eads Elementary School Science Standards 4thGrade

SCIENCE STANDARD #1

Students understand the processes of scientific investigation and design, conduct, communicate about, and evaluate such investigations.

Ref.	Expectation	P	PP	NI	US
4.1.a.	Tell what question they are going to answer or problem they will solve in an investigation.				
4.1.b.	Predict what they think will happen and tell why.				
4.1.c.	Generate questions during and after an investigation based on their observations, data, or variables.				
4.1.d.	Suggest a simple investigation to answer one of the questions generated.				
4.1.e.	Use everyday objects to show how the Earth, Sun, and Moon move with respect to each other.				
4.1.f.	Use two or more words to describe an object or situation.				
4.1.g.	Use more than one sense when making observations.				
4.1.h.	Draw and label pictures that include relevant details as well as the main characteristics.				
4.1.i.	Record observations (using pictures, words, or numbers) on charts with existing column headings.				
4.1.j.	Make two-column charts and label column headings.				
4.1.k.	Plot data on a bar graph using their data.				
4.1.l.	Use observations and graphs to answer questions related to the investigation.				
4.1.m.	Compare results with their prediction and answer the question they set out to answer.				
4.1.n.	Tell what happened when they did an investigation.				

SCIENCE STANDARD #2

PHYSICAL SCIENCE: Students know and understand common properties, forms, and changes in matter and energy. **Properties of Substances:** In fourth grade, students learn that substances have properties and these properties can be used to identify them..

Ref.	Expectation	P	PP	NI	US
4.2.a.	Name several examples of properties of substances (solids and liquids).				
4.2.b.	Realize that powders are solids.				
4.2.c.	Sort properties into two groups—those that change and those that don't.				
4.2.d.	Compare the properties of two or more substances.				
4.2.e.	Give examples of how to use properties to distinguish one substance from another.				
4.2.f.	Use a completed data table to identify a substance.				
4.2.g.	Explain why it is usually necessary to use more than one property to identify a substance.				
4.2.h.	Tell how liquids can be used to distinguish solids (eg: sugar dissolves in water but corn starch does not).				

4.2.i.	Test at least three properties to identify a solid.				
4.2.j.	Observe and draw the crystals that remain after the liquid evaporates from a mixture.				
4.2.k.	Know that a mixture is formed when two substances are combined and can be separated again.				
4.2.l.	Observe and describe what happens when different kinds of solids (eg: water, vinegar, cabbage juice).				
4.2.m.	Explain what remains after the water evaporates from a mixture.				
4.2.n.	Explain what is meant by the term “dissolve.”				
4.2.o.	Give evidence that when a solid dissolves, it is still there even if it can't be seen.				

SCIENCE STANDARD #3:

LIFE SCIENCE: Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environments. **Food and Food Chains:** In fourth grade, students learn that energy, in the form of food, is passed from one organism to another. They also learn that humans have specialized structures which allow us to use the energy in food.

Ref.	Expectations	P	PP	NI	US
4.3.a.	Recall that animals need food, water, air, and shelter in order to live.				
4.3.b.	Describe examples of predator-prey relationships.				
4.3.c.	Realize that every animal eats other plants and/or animals and is eaten by other animals.				
4.3.d.	Know that plants get their energy from the Sun and animals get their energy by eating.				
4.3.e.	Use evidence from classroom investigations to show that an animal eats only particular foods.				
4.3.f.	Group organisms (herbivores, carnivores, omnivores) based on the types of food they eat.				
4.3.g.	Know that animals use food for growth as well as for energy.				
4.3.h.	Draw a food chain that includes the Sun and three organisms.				
4.3.i.	Use an example to explain how a change in the types of plants that grow in a particular location can affect the animals in that location.				
4.3.j.	Explain that a food chain shows how energy is transferred from the Sun to plants and then to animals.				
4.3.k.	Explain that some of the parts inside our body work together to break down food so the organism can use it for matter and energy.				
4.3.l.	Name the four main parts of the digestive system (mouth, esophagus, stomach, intestine).				
4.3.m.	Sketch the digestive system, showing the shape of the parts and placing them in the correct order.				
4.3.n.	Explain that the purpose of the digestive system is to break down bites of food into pieces that are extremely tiny—too small to recognize.				
4.3.o.	Explain that the nutrients in foods that our bodies need are absorbed by the body; the wastes leave the body through the anus.				
4.3.p.	Know that it is important to eat a variety of foods, including lots of fruits and vegetables, but few sweets.				
4.3.q.	Name examples of fruits and vegetables.				

4.3.r.	Name examples of foods that are high in sugar but low in important nutrients.				
4.3.s.	Match beak shape with type of food or foot shape with habitat.				
4.3.t.	Give examples of specific characteristics (involving beaks or feet) that allow a bird to meet its needs.				
4.3.u.	Draw the mouth of an insect as viewed when magnified.				
4.3.v.	Describe different types of insect mouths.				
4.3.w.	Explain how shape of an insect mouth provides clues about what the insect eats.				

SCIENCE STANDARD #4:

EARTH AND SPACE SCIENCE: Students know and understand the processes and interactions of Earth’s systems and the structure and dynamics of Earth and other objects in space. Day and Night Skies: In fourth grade, students learn the names and patterns to the movements of objects that can be viewed in the day and night skies with the unaided eye.

Ref.	Expectation	P	PP	NI	US
4.4.a.	Locate the Moon in the day as well as in the night sky.				
4.4.b.	Sequence pictures of the phases of the Moon using evidence from their observations.				
4.4.c.	Locate at least two constellations in the sky and/or on a simple sketch (eg: Big Dipper, Orion).				
4.4.d.	Explain what is meant by the term constellation (a pattern of stars in the sky that does not change).				
4.4.e.	Know which objects that can be seen in the night sky compared with those that are seen during the day.				
4.4.f.	Tell that the Sun appears to move from east to west over the course of a day.				
4.4.g.	Indicate the location of the Sun on a drawing that shows an object and its shadow.				
4.4.h.	Explain how a shadow can be used to understand the motion of the Sun.				
4.4.i.	Use a model or drawing to show how the Earth turns with respect to the Sun resulting in day and night.				
4.4.j.	Decide if it would be day or night in Colorado based on drawings of the Earth and the Sun.				
4.4.k.	Use a model to show how the Earth moves with respect to the Sun resulting in a year.				
4.4.l.	Make a drawing that shows the Sun, Earth, and its Moon, and other planets as being “clumped” and the stars as being much more distant.				
4.4.m.	Show the Sun as being at the center of the solar system with the planets (including Earth) circling the Sun.				
4.4.n.	Describe the solar system as consisting of the Sun, the Earth, and its Moon, and eight other planets.				
4.4.o.	Know the names of the planets.				
4.4.p.	Explain the destination and purpose of a recent space exploration event.				
4.4.q.	Know that astronauts have landed on the Moon and explored its surface.				
4.4.r.	Realize that astronauts have gone to the Moon but no further.				

SCIENCE STANDARD #5:

Students know and understand interrelationships among science, technology, and human activity and how they can affect the world.

Ref.	Expectations	P	PP	NI	US
4.5.a.	Realize that astronauts and those people who plan space flights must understand the movement of objects in space.				

SCIENCE STANDARD #6:

Students understand that science involves a particular way of knowing and understand common connections among scientific disciplines.

Ref.	Expectations	P	PP	NI	US
4.6.a.	Realize that some properties of substances never change.				
4.6.b.	Describe the changes in the appearance of the Moon that they observed with what a book or other reference says about phases of the Moon.				
4.6.c.	Describe the path the Sun follows when it moves across the sky and explain that this pattern is likely to continue far into the future.				
4.6.d.	Identify the nine planets and the Sun as being the main parts of the solar system.				
4.6.e.	Name the four main parts of the digestive system and describe the main function of each part.				
4.6.f.	Explain how models are the same, yet different from, the real thing.				

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