

Science Curriculum

Grade 5

The Fairfax County Elementary Science Program of Studies is a hands-on, inquiry based curriculum designed to provide students with a basic understanding of scientific investigation as it applies to the concepts of force, motion, and energy; matter; life processes; living systems; resources; Earth patterns, cycles, and change; interrelationships in Earth and space systems. Through science process skills and the practice of experimental design, students will develop abilities to solve problems, communicate, and make connections to science in our everyday world. The program materials include activity-centered units, science trade books, Windows on Science videodiscs, Fresh Science DVDs and specific web sites correlated to each science unit.

SCI.G5

Standard 1

PLAN AND CONDUCT INVESTIGATIONS

The student will plan and conduct investigations.

State Notes:

[Overview](#)

The concepts developed in this standard include the following:

- Systematic investigations require standard measures and consistent and reliable tools. Metric measures are a standard way to make measurements and are recognized around the world.
 - A classification key is an important tool used to help identify objects and organisms. It consists of a branching set of choices organized in levels, with most levels of the key having two choices. Each level provides more specific descriptors, eventually leading to identification.
 - Systematic investigations require organized reporting of data. The way the data are displayed can make it easier to see important patterns, trends, and relationships. Bar graphs and line graphs are useful tools for reporting discrete data and continuous data, respectively.
 - A scientific *prediction* is a forecast about what *may* happen in some future situation. It is based on the application of factual information and principles and recognition of trends and patterns.
 - Estimation is a useful tool for making approximate measures and giving general descriptions. In order to make reliable estimates, one must have experience using the particular unit.
 - Scientific conclusions are based both on verifiable observations (science is empirical) and on inferences.
 - *Observation* is the use of senses to collect information about the environment. *Inference* is the use of prior knowledge and experience to generate conclusions about those observations.
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Benchmark 1.a

Identify Rocks, Minerals and Organisms Using a Classification Key

The student will plan and conduct investigations in which rocks, minerals and organisms are identified using a classification key.

Indicator 1.a.1

Use classification keys to identify rocks, minerals, and organisms

Use classification keys to identify rocks, minerals, and organisms.

Benchmark 1.b

Estimate Length, Mass and Volume

The student will plan and conduct investigations in which estimations of length, mass and volume are made.

Indicator 1.b.1

Make plausible estimations of length, mass and volume

Make plausible estimations of length, mass and volume.

Benchmark 1.c

Select and Use Appropriate Instruments for Quantitative Observations

The student will plan and conduct investigations in which appropriate instruments are selected and used for making quantitative observations of length, mass, volume and elapsed time.



Indicator 1.c.1

Select and use appropriate instruments to make basic measurements

Select and use the appropriate instruments, including centimeter rulers, meter sticks, graduated cylinders, balances, and stopwatches, for making basic measurements.



Indicator 1.c.2

Construct and operate a water drop magnifier

Construct and operate a water drop magnifier.



Indicator 1.c.3

Demonstrate appropriate techniques in using a microscope

Demonstrate appropriate techniques in using a microscope.



Benchmark 1.d

Make Accurate Measurements Using Basic Tools

The student will plan and conduct investigations in which accurate measurements are made using basic tools (thermometer, meter stick, balance, and graduated cylinder).



Indicator 1.d.1

Measure temperature, length, mass, and volume using metric measures

Measure temperature, length, mass, and volume using metric measures. This includes millimeters, centimeters, meters, kilometers, grams, kilograms, milliliters, liters, and degrees Celsius.



Benchmark 1.e

Use Appropriate Graphical Representations for Data

The student will plan and conduct investigations in which data are collected, recorded, and reported using the appropriate graphical representation (graphs, charts, diagrams).



Indicator 1.e.1

Collect, record & report data using charts & tables; Create graphs

Collect, record, and report data, using charts and tables, and translate numerical data into bar or line graphs.



Benchmark 1.f

Make Predictions Using Patterns and Extrapolate Simple Graphical Data

The student will plan and conduct investigations in which predictions are made using patterns, and simple graphical data are extrapolated.



Indicator 1.f.1

Make predictions based on trends in data

Make predictions based on trends in data. This requires the recognition of patterns and trends and determination of what those trends may represent.



Indicator 1.f.2

Use investigational results to extrapolate simple graphical data

Use the results of an investigation to extrapolate simple graphical data.



Benchmark 1.g

Identify Manipulated and Responding Variables

The student will plan and conduct investigations in which manipulated and responding variables are identified.

Indicator 1.g.1



Identify manipulated and responding variables in a simple experiment

Analyze the variables in a simple experiment and identify the manipulated (independent) and responding (dependent) variables.



Benchmark 1.h

Understand the Nature Of Science

The student will plan and conduct investigations in which an understanding of the nature of science is developed and reinforced.



Indicator 1.h.1

Define and make observations and inferences

Define and make observations and inferences.



Indicator 1.h.2

Distinguish between observations and inferences

Distinguish between observations and inferences.



Indicator 1.h.3

Measure, record, identify, collect and organize observations

Measure, record, identify, collect and organize observations.



Indicator 1.h.4

Distinguish between qualitative and quantitative observations

Distinguish between qualitative and quantitative observations.



SCI.G5

Standard 2

UNDERSTAND HOW SOUND IS TRANSMITTED AND USED FOR COMMUNICATION

The student will investigate and understand how sound is transmitted and is used as a means of communication.

State Notes:

[Overview](#)

The concepts developed in this standard include the following:

- Sound is a form of energy produced and transmitted by vibrating matter.
 - Sound travels in waves and can be described by the wavelength and frequency of the waves. A *wave* is a disturbance moving through a medium (solid, liquid, or gas).
 - The *frequency* of sound is the number of vibrations in a given unit of time.
 - Sound is a compression wave moving outward from its source. The *wavelength* of sound is the distance between two compressions.
 - *Pitch* is determined by the frequency of a vibrating object. Objects vibrating faster have a higher pitch than objects vibrating slower.
 - Sound travels more quickly through solids than through liquids and gases because the molecules of a solid are closer together. Sound travels most slowly through gases because the molecules of a gas are farthest apart.
 - Some animals make and hear ranges of sound vibrations different from those that humans can make and hear.
 - Musical instruments vibrate to produce sound.
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Benchmark 2.a

Understand Frequency, Waves, Wavelength and Vibration

The student will investigate and understand frequency, waves, wavelength and vibration.



Indicator 2.a.1

Describe what sound is and how it is formed, affects matter & travels

Use the basic terminology of sound to describe what sound is, how it is formed, how it affects matter, and how it travels.

Indicator 2.a.2



Create and interpret a model or diagram of a compression wave

Create and interpret a model or diagram of a compression wave.



Indicator 2.a.3

Explain why sound waves travel only where there is matter

Explain why sound waves travel only where there is matter to transmit them.



Indicator 2.a.4

Explain the relationship between frequency and pitch

Explain the relationship between frequency and pitch.



Benchmark 2.b

Understand the Ability of Different Media to Transmit Sound

The student will investigate and understand the ability of different media (solids, liquids and gases) to transmit sound.



Indicator 2.b.1

Investigate what factors affect the pitch of a vibrating object

Design an investigation to determine what factors affect the pitch of a vibrating object. This includes vibrating strings, rubber bands, beakers/bottles of air and water, tubes (as in wind chimes) and other common materials.



Indicator 2.b.2

Compare and contrast sound traveling through a solid vs. through air

Compare and contrast sound traveling through a solid with sound traveling through the air. Explain how different media (solid, liquid, and gas) will affect the transmission of sound.



Benchmark 2.c

Identify Uses and Applications of Sound

The student will investigate and understand the uses and applications of sound (voice, sonar, animal sounds and musical instruments).



Indicator 2.c.1

Compare and contrast human sounds and hearing with those of animals

Compare and contrast the sounds (voice) that humans make and hear to that of other animals (i.e. bats, dogs and whales).



Indicator 2.c.2

Compare and contrast how musical instruments make sound

Compare and contrast how different kinds of musical instruments make sound. This includes string instruments, woodwinds, percussion instruments, and brass instruments.



SCI.G5

Standard 3

UNDERSTAND BASIC CHARACTERISTICS OF VISIBLE LIGHT

The student will investigate and understand basic characteristics of visible light and how it behaves.

State Notes:

[Overview](#)

The concepts developed in this standard include the following:

- Visible light is a combination of several different wavelengths of light traveling together. These wavelengths are represented by the colors red, orange, yellow, green, blue, indigo, and violet (ROYGBIV).
- Light waves are characterized by their wavelengths. In the visible spectrum, red has the longest wavelength, and violet has the shortest. Wavelengths get progressively shorter from red to violet.

- Light travels in waves. Compared to sound, light travels extremely fast. It takes light from the sun less than 8½ minutes to travel 150 million kilometers to reach the Earth.
- Unlike sound, light waves travel in straight paths called *rays* and do not need a medium through which to move.
- Light travels in straight paths until it hits an object, where it bounces off (is reflected), is bent (is refracted), passes through the object (is transmitted), or is absorbed as heat.
- The relative terms *transparent*, *translucent*, and *opaque* indicate the amount of light that passes through an object.
- A prism can be used to refract visible light. When the different wavelengths of light in visible light pass through a prism, they are bent at different angles. The colors of light we see are red, orange, yellow, green, blue, indigo, and violet.

Essential Understanding:

N/A

Benchmark 3.a

Understand the Visible Spectrum and Light Waves

The student will investigate and understand the visible spectrum and light waves.

Indicator 3.a.1

Explain the relationships between wavelength and the color of light

Explain the relationships between wavelength and the color of light.

Indicator 3.a.2

Name the colors of the visible spectrum

Name the colors of the visible spectrum.

Indicator 3.a.3

Diagram and label a representation of a light wave

Diagram and label a representation of a light wave, including wavelength, peak and trough.

Indicator 3.a.4

Understand that light waves are transverse waves

Understand that light waves are transverse waves.

Benchmark 3.b

Understand the Refraction of Light Through Water and Prisms

The student will investigate and understand the refraction of light through water and prisms.

Indicator 3.b.1

Use water and prisms to understand the refraction of light

Use water and prisms to understand the refraction of light.

Indicator 3.b.2

Analyze a prism's effect on white light and describe why this occurs

Analyze the effects of a prism on white light and describe why this occurs.

Indicator 3.b.3

Explain why a rainbow occurs

Explain why a rainbow occurs.

Benchmark 3.c

Understand the Reflection of Light From Reflective Surfaces (Mirrors)

The student will investigate and understand the reflection of light from reflective surfaces (mirrors).

Indicator 3.c.1

Use mirrors to understand the reflection of light

Use reflective surfaces (mirrors) to understand the reflection of light.



Indicator 3.c.2

Compare and contrast reflection and refraction

Compare and contrast reflection and refraction using water, prisms and mirrors.



Benchmark 3.d

Understand the Terms Opaque, Transparent and Translucent

The student will investigate and understand the terms opaque, transparent and translucent.



Indicator 3.d.1

Explain the terms transparent, translucent and opaque

Explain the terms *transparent*, *translucent* and *opaque* and give an example of each.



Benchmark 3.e

Understand Historical Contributions in Understanding Light

The student will investigate and understand historical contributions in understanding light.



Indicator 3.e.1

Understand historical contributions in understanding light

Understand historical contributions in understanding light.



SCI.G5

Standard 4

UNDERSTAND THAT MATTER HAS MASS AND IS A SOLID, LIQUID OR GAS

The student will investigate and understand that matter is anything that has mass, takes up space, and occurs as a solid, liquid, or gas.

State Notes:

[Overview](#)

The concepts developed in this standard include the following:

- All matter, regardless of its size, shape, or color, is made of particles (atoms and molecules) that are too small to be seen by the unaided eye.
 - There are more than 100 known elements that make up all matter. The smallest part of an element is an atom.
 - When two or more elements combine to form a new substance, it is called a *compound*. There are many different types of compounds because atoms of elements combine in many different ways (and in different whole number ratios) to form different compounds. Examples include water (H₂O) and table salt (NaCl). The smallest part of a compound is a molecule.
 - A *mixture* is a combination of two or more substances that do not lose their identifying characteristics when combined. A *solution* is a mixture in which one substance dissolves in another.
 - As its temperature increases, many kinds of matter change from a solid to a liquid to a gas. As its temperature decreases, that matter changes from a gas to a liquid to a solid.
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Benchmark 4.a

Understand Atoms, Elements, Molecules and Compounds

The student will investigate and understand atoms, elements, molecules and compounds.



Indicator 4.a.1

Interpret models of atoms, elements, molecules and compounds

Construct and interpret models of atoms, elements, molecules and compounds.



Indicator 4.a.2

Compare and contrast elements and compounds

Compare and contrast elements and compounds.



Indicator 4.a.3

Compare and contrast atoms and molecules

Compare and contrast atoms and molecules.



Benchmark 4.b

Understand Mixtures Including Solutions

The student will investigate and understand mixtures including solutions.



Indicator 4.b.1

Compare and contrast mixtures and solutions

Compare and contrast mixtures and solutions.



Benchmark 4.c

Understand the Effect of Heat on the States of Matter

The student will investigate and understand the effect of heat on the states of matter.



Indicator 4.c.1

Investigate how heat affects the states of matter

Design an investigation to determine how heat affects the states of matter (e.g., water). Include in the design ways information will be recorded, what measures will be made, what instruments will be used, and ways the data will be graphed.



Indicator 4.c.2

Interpret a diagram of molecular activity in gases, liquids and solids

Construct and interpret a sequence of models (diagrams) showing the activity of molecules in all three states of matter.



SCI.G5

Standard 5

UNDERSTAND THAT ORGANISMS ARE MADE OF CELLS & HAVE CHARACTERISTICS

The student will investigate and understand that organisms are made of cells and have distinguishing characteristics.

State Notes:

Overview

- The concepts developed in this standard include the following:
- Living things are made of cells. Cells carry out all life processes. New cells come from existing cells. Cells are too small to be seen with the eye alone. By using a microscope, many parts of a cell can be seen.
- Though plant and animal cells are similar, they are also different in shape and in some of their parts. Plant cells tend to be rectangular, while animal cells tend to be spherical or at times irregular.
- Organisms that share similar characteristics can be organized into groups in order to help understand similarities and differences.
- Living things can be categorized into kingdoms: monerans protists, fungi, plants, and animals.
- Plants can be categorized as vascular (having special tissues to transport food and water — for example, trees and flowering plants) and nonvascular (not having tissues to transport food and water — for example, moss). Most plants are vascular.
- Animals can be categorized as vertebrates (having backbones) or invertebrates (not having backbones).



Benchmark 5.a

Understand Basic Cell Structures and Functions

The student will investigate and understand basic cell structures and functions.



Indicator 5.a.1

Identify the essential structures and functions of plant cells

Identify, draw, label, and describe the essential structures and functions of plant cells. Include the nucleus, cell wall,

cell membrane, vacuole, chloroplasts and cytoplasm.



Indicator 5.a.2

Identify the essential structures and functions of animal cells

Identify, draw, label, and describe the essential structures and functions of animal cells. Include the nucleus, cell membrane, vacuole and cytoplasm.



Indicator 5.a.3

Design an investigation to make observations of cells

Design an investigation to make observations of cells.



Indicator 5.a.4

Compare and contrast plant and animal cells

Compare and contrast plant and animal cells.



Indicator 5.a.5

Prepare slides of living and nonliving things

Prepare slides of living and nonliving things.



Benchmark 5.b

Understand Kingdoms of Living Things

The student will investigate and understand kingdoms of living things.



Indicator 5.b.1

Compare and contrast the distinguishing characteristics of kingdoms

Compare and contrast the distinguishing characteristics of the kingdoms of organisms.



Indicator 5.b.2

Name and describe two common examples of each kingdom

Name and describe two common examples of each kingdom.



Benchmark 5.c

Understand Vascular and Nonvascular Plants

The student will investigate and understand vascular and nonvascular plants.



Indicator 5.c.1

Group plants into vascular and nonvascular categories

Group plants into vascular and nonvascular categories based on their characteristics.



Indicator 5.c.2

Name and describe two examples of vascular and nonvascular plants

Name and describe two common examples of vascular and nonvascular plants.



Benchmark 5.d

Understand Vertebrate and Invertebrate Animals

The student will investigate and understand vertebrate and invertebrate animals.



Indicator 5.d.1

Group animals into vertebrate and invertebrate categories

Group animals into vertebrate and invertebrate categories based on their characteristics.



Indicator 5.d.2

Name and describe two common examples of vertebrates and invertebrates

Name and describe two common examples of vertebrates and invertebrates.



SCI.G5

Standard 6

UNDERSTAND CHARACTERISTICS OF THE OCEAN ENVIRONMENT

The student will investigate and understand characteristics of the ocean environment.

State Notes:

[Overview](#)

The concepts developed in this standard include the following:

- Oceans cover about 70 percent of the surface of the Earth.
- Important features of the ocean floor near the continents are the continental shelf, the continental slope, and the continental rise. These areas are covered with thick layers of sediments (sand, mud, rocks).
- The depth of the ocean varies. Ocean trenches are very deep, and the continental shelf is relatively shallow.
- Ocean water is a complex mixture of gases (air) and dissolved solids (salts, especially sodium chloride). Marine organisms are dependent on dissolved gases for survival. The salinity of ocean water varies in some places depending on rates of evaporation and amount of runoff from nearby land.
- The *basic motions* of ocean water are the waves, currents, and tides.
- Ocean currents, including the Gulf Stream, are caused by wind patterns and the differences in water densities (due to salinity and temperature differences). Ocean currents affect the mixing of ocean waters. This can affect plant and animal populations. Currents also affect navigation routes.
- As the depth of ocean water increases, the temperature decreases, the pressure increases, and the amount of light decreases. These factors influence the type of life forms that are present at a given depth.
- Plant-like plankton (phytoplankton) produce much of the Earth's oxygen and serve as the base of the ocean ecosystem. Plankton flourish in areas where nutrient-rich water upwells from the deep. Phytoplankton are eaten by animal-like plankton, swimming organisms, and those things that live on the ocean bottom.



Benchmark 6.a

Understand Geological Characteristics of the Ocean

The student will investigate and understand geological characteristics (continental shelf, slope and rise) of the ocean environment.



Indicator 6.a.1

Explain the terms continental shelf, slope and rise

Explain the terms continental shelf, slope and rise as they relate to the ocean environment.



Indicator 6.a.2

Label and describe the major features of the ocean floor

Create and interpret a model of the ocean floor and label and describe each of the major features.



Indicator 6.a.3

Describe depth variations associated with ocean features

Research and describe the variation in depths associated with ocean features, including the continental shelf, slope, rise, the abyssal plain, and ocean trenches.



Benchmark 6.b

Understand Physical Characteristics of the Ocean

The student will investigate and understand physical characteristics (depth, salinity, and major currents) of the ocean environment.



Indicator 6.b.1

Explain the terms depth, salinity and major currents

Explain the terms depth, salinity and major currents as they relate to the ocean environment.



Indicator 6.b.2

Investigate the physical characteristics of the ocean

Design an investigation (including models and simulations) related to physical characteristics of the ocean environment (depth, salinity, formation of waves, and currents, such as the Gulf Stream).



Indicator 6.b.3

Interpret graphs of the ocean's physical characteristics

Interpret graphical data related to physical characteristics of the ocean.



Indicator 6.b.4

Explain ocean current formation & describe and locate the Gulf Stream

Explain the formation of ocean currents and describe and locate the Gulf Stream.



Benchmark 6.c

Understand Biological Characteristics of the Ocean

The student will investigate and understand biological characteristics (ecosystems) of the ocean environment.



Indicator 6.c.1

Explain the term ecosystem as it relates to the ocean environment

Explain the term ecosystem as it relates to the ocean environment.



Indicator 6.c.2

Investigate the biological characteristics of the ocean

Design an investigation (including models and simulations) related to biologic characteristics of the ocean environment (ecological relationships).



Indicator 6.c.3

Interpret graphs of the ocean's biological characteristics

Interpret graphical data related to the biological characteristics of the ocean, such as the number of organisms vs. the depth of the water.



Indicator 6.c.4

Analyze the effects of depth, salinity and temperature on marine life

Analyze how the physical characteristics (depth, salinity, and temperature) of the ocean affect where marine organisms can live.



Indicator 6.c.5

Interpret a model of a basic marine food web

Create and interpret a model of a basic marine food web, including floating organisms (plankton), swimming organisms, and organisms living on the ocean bottom.



SCI.G5

Standard 7

UNDERSTAND HOW THE EARTH'S SURFACE IS CONSTANTLY CHANGING

The student will investigate and understand how the Earth's surface is constantly changing.

State Notes:

Overview

The concepts developed in this standard include the following:

- Rocks move and change over time due to heat and pressure within the Earth and to *weathering* and *erosion* at the surface. These and other processes constantly change rock from one type to another.
- Rocks have properties that can be observed, tested, and described. Composition, grain size and textural features, color, and the presence of fossils help with identification. Classification keys (5.1) can aid this process.
- Depending on how rocks are formed, they are classified as *sedimentary* (layers of sediment cemented together), *igneous* (melted and cooled, e.g., lava and

- magma), and *metamorphic* (changed by heat and pressure).
- Scientific evidence indicates the Earth is very ancient — approximately 4.6 billion years old. The age of many rocks can be determined very reliably. Fossils provide information about life and conditions of the past.
 - Scientific evidence indicates that the Earth is composed of four concentric layers — crust, mantle, inner core, and outer core — each with its own distinct characteristics. The outer two layers are composed primarily of rocky material. The innermost layers are composed mostly of iron and nickel. Pressure and temperature increase with depth beneath the surface.
 - The Earth's heat energy causes movement of material within the Earth. Large continent-size blocks (plates) move slowly about the Earth's surface, driven by that heat.
 - Most earthquakes and volcanoes are located at the boundary of the plates (faults). Plates can move together (convergent boundaries), apart (divergent boundaries), or slip past each other horizontally (sliding boundaries, also called strike-slip or transform boundaries).
 - Geological features in the oceans (including trenches and mid-ocean ridges) and on the continents (mountain ranges, including the Appalachian Mountains) are caused by current and past plate movements.
 - Rocks and other materials on the Earth's surface are constantly being broken down both chemically and physically. The products of weathering include clay, sand, rock fragments, and soluble substances. Weathered rock material can be moved by water and wind and deposited as sediment.
 - Humans have varying degrees of impact on the Earth's surface through their everyday activities. With careful planning, the impact on the land can be controlled.
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Benchmark 7.a

Understand the Rock Cycle Including the Identification of Rock Types

The student will investigate and understand the rock cycle including identification of rock types.



Indicator 7.a.1

Label the rock cycle and describe its major processes and rock types

Draw and label the rock cycle and describe the major processes and rock types involved.



Indicator 7.a.2

Compare/contrast the origin of igneous, sedimentary, metamorphic rocks

Compare and contrast the origin of igneous, sedimentary and metamorphic rocks.



Indicator 7.a.3

Identify rock samples using a rock classification key

Identify rock samples (granite, gneiss, slate, limestone, shale, sandstone and coal) using a rock classification key.

Benchmark 7.b

Understand Earth History and Fossil Evidence

The student will investigate and understand Earth history and fossil evidence.



Indicator 7.b.1

Make plausible inferences based on fossil evidence

Make plausible inferences about changes in the Earth over time based on fossil evidence. This includes the presence of fossils of organisms in sedimentary rocks of Virginia found in the Appalachians, Piedmont, and Coastal Plain/Tidewater.

Benchmark 7.c

Understand the Basic Structure of the Earth's Interior

The student will investigate and understand the basic structure of the Earth's interior.



Indicator 7.c.1

Describe the Earth's interior layers and how they affect the surface

Describe the structure of Earth in terms of its major layers — crust, mantle, and inner and outer cores — and how the Earth's interior affects the surface.

Benchmark 7.d

Understand Plate Tectonics (Earthquakes and Volcanoes)

The student will investigate and understand plate tectonics (earthquakes and volcanoes).



Indicator 7.d.1

Understand the three types of plate tectonic boundaries

Differentiate among the three types of plate tectonic boundaries (divergent, convergent, and sliding) and how these relate to the changing surface of the Earth and the ocean floor (5.6).



Indicator 7.d.2

Compare and contrast the origin of earthquakes and volcanoes

Compare and contrast the origin of earthquakes and volcanoes and how they affect the Earth's surface.



Benchmark 7.e

Understand Weathering and Erosion

The student will investigate and understand weathering and erosion.



Indicator 7.e.1

Understand the terms weathering and erosion

Apply the terms weathering and erosion to explain how the Earth's surface is constantly changing. Be able to differentiate between the two processes.



Indicator 7.e.2

Design an investigation to locate weathering and erosion

Design an investigation to locate, chart, and report weathering and erosion at home and on the school grounds. Create a plan to solve erosion problems that may be found.



Indicator 7.e.3

Investigate to find the amount and kinds of rock material in soil

Design an investigation to determine the amount and kinds of weathered rock material found in soil.



Benchmark 7.f

Understand Human Impact on the Earth's Surface

The student will investigate and understand human impact on the Earth's surface.



Indicator 7.f.1

Describe how people change the Earth's surface

Describe how people change the Earth's surface and how negative changes can be controlled.