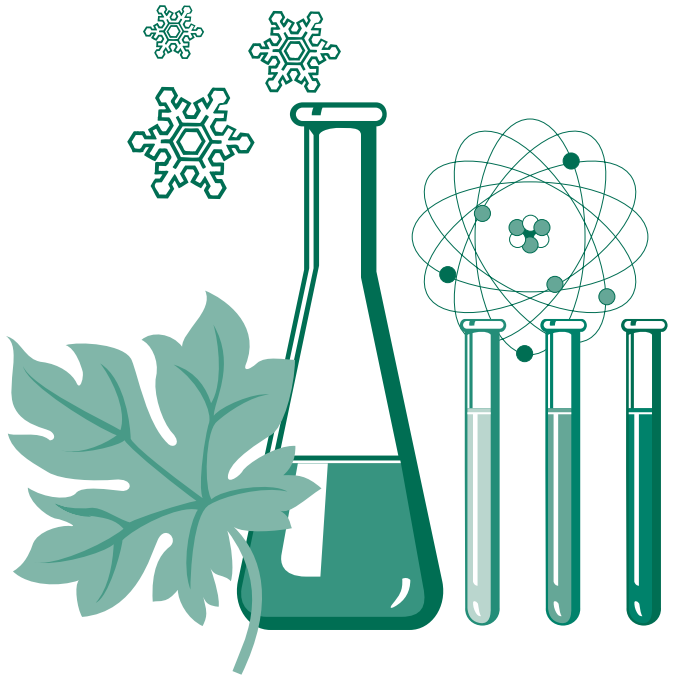

Science Standards of Learning Curriculum Framework

Grade Four

Commonwealth of Virginia
Board of Education
Richmond, Virginia

Grade Four
Science Strand

Scientific Investigation, Reasoning, and Logic

This strand represents a set of systematic inquiry skills that defines what a student should be able to do when conducting activities and investigations. The various skill categories are described in the "Investigate and Understand" section of the Introduction to the *Science Standards of Learning*, and the skills in science standard 4.1 represent more specifically what a student should be able to do as a result of science experiences in fourth grade. Across the grade levels, the skills in the "Scientific Investigation, Reasoning, and Logic" strand form a nearly continuous sequence of investigative skills. (Please note Appendix, "Science Skills, Scope, & Sequence.") It is important that the classroom teacher understands how the skills in standard 4.1 are a key part of this sequence (i.e., K.1, K.2, 1.1, 2.1, 3.1, 4.1, 5.1, and 6.1). The fourth grade curriculum should ensure that skills from preceding grades are continuously reinforced and developed. It is also important to note that 25 percent of items on the third and fifth grade SOL assessments measure the skills defined in this strand.

Standard 4.1

The student will plan and conduct investigations in which

a) distinctions are made among observations, conclusions, inferences, and predictions;
b) hypotheses are formulated based on cause-and-effect relationships;
c) variables that must be held constant in an experimental situation are defined;
d) appropriate instruments are selected to measure linear distance, volume, mass, and temperature;
e) appropriate metric measures are used to collect, record, and report data;
f) data are displayed using bar and basic line graphs;
g) numerical data that are contradictory or unusual in experimental results are recognized; and
h) predictions are made based on data from picture graphs, bar graphs, and basic line graphs.

Understanding the Standard

The skills described in standard 4.1 are intended to define the "investigate" component of all of the other fourth grade standards (4.2–4.8). The intent of standard 4.1 is that students will continue to develop a range of inquiry skills and achieve proficiency with those skills in the context of the concepts developed at the fourth grade. Standard 4.1 does not require a discrete unit on scientific investigation because the inquiry skills that make up the standard should be incorporated in all the other fourth grade standards. It is also intended that by developing these skills, students will achieve greater understanding of scientific inquiry and the nature of science as well as more fully grasp the content-related concepts.

Standard 4.1

Overview	Essential Knowledge, Skills, and Processes
The concepts developed in this standard include the following: • To communicate an observation accurately, one must provide a clear description of exactly what is observed and nothing more. Those conducting investigations need to understand the difference between *what is seen* and what inferences, conclusions, or interpretations can be drawn from the observation. • An *inference* is a conclusion based on evidence about events that have already occurred. Accurate observations and evidence are necessary to draw realistic and plausible conclusions. • A scientific *prediction* is a forecast about what *may* happen in some future situation. It is based on the application of scientific principles and factual information. • Systematic investigations require standard measures (metric), consistent and reliable tools, and organized reporting of data. The way the data are displayed can make it easier to uncover important information. This can assist in making reliable scientific forecasts of future events. • An *experiment* is a fair test driven by a hypothesis. A fair test is one in which only one variable is compared. A *hypothesis* is a prediction about the relationship between variables.	In order to meet this standard, it is expected that students should be able to • differentiate among simple observations, conclusions, inferences, and predictions, and correctly apply the terminology in oral and written work. This requires students to comprehend the basic terminology and apply it in novel situations related to fourth grade SOL concepts. • analyze a set of 20 or fewer objects, measures, or pictures; classify them into basic categories to organize the data (descriptive or numerical); and construct bar graphs and line graphs depicting the distribution of those data. • use millimeters, centimeters, meters, kilometers, milliliters, liters, grams, and kilograms in measurement. • choose the appropriate instruments, including centimeter rulers, meter sticks, graduated cylinders, beakers, scales and balances, and Celsius thermometers, for making basic metric measures. • make predictions based on picture graphs, bar graphs, and basic line graphs.

Standard 4.1 (continued)

Overview	Essential Knowledge, Skills, and Processes
• In order to conduct an experiment, one must recognize all of the potential variables or changes that can affect its outcome. • A *manipulated variable* is the factor in an experiment that is altered by the experimenter. • A *responding variable* is the factor in an experiment that changes as a result of the manipulated variable.	• create a plausible hypothesis, stated in terms of cause and effect, from a set of basic observations that can be tested. This requires a student to comprehend what "cause and effect" is and to be able to apply that idea in new situations. The application should occur in terms of fourth grade SOL-related concepts or other concrete situations. Hypotheses should be stated in terms such as: "If the water temperature is increased, then the amount of sugar that can be dissolved in it will increase." • analyze the variables in a simple experiment, and decide which must be held constant (not allowed to change) in order for the investigation to represent a fair test. This requires students to comprehend what "variables" are and to apply that idea in new situations related to fourth grade SOL-related concepts. Variables are either manipulated or responding. • judge which, if any, data in a simple set of results (generally 10 or fewer in number) appear to be considerably outside the expected range. Students should be able to determine the significance of unusual data.

Grade Four
Science Strand

Force, Motion, and Energy

This strand focuses on student understanding of what force, motion, and energy are and how the concepts are connected. The major topics developed in this strand include magnetism, types of motion, simple and compound machines, and energy forms and transformations, especially electricity, sound, and light. This strand includes science standards K.3, 1.2, 2.2, 3.2, 4.2, 4.3, 5.2, 5.3, 6.2, and 6.3.

Standard 4.2

The student will investigate and understand characteristics and interaction of moving objects. Key concepts include

a) motion is described by an object's direction and speed;
b) forces cause changes in motion;
c) friction is a force that opposes motion; and
d) moving objects have kinetic energy.

Understanding the Standard

This standard is introduced in first grade and prepares students for a more in-depth study of energy in eighth grade. This standard focuses on the characteristics of moving objects. Key concepts include the effect of forces, such as friction, on moving objects. It is intended that students will actively develop scientific investigation, reasoning, and logic skills (4.1) in the context of the key concepts presented in this standard.

Standard 4.2

Overview	Essential Knowledge, Skills, and Processes
The concepts developed in this standard include the following: • The position of an object can be described by locating it relative to another object or to the background. • Tracing and measuring an object's position over time can describe its motion. • *Speed* describes how fast an object is moving. • Energy may exist in two states: kinetic or potential. • *Kinetic energy* is the energy of motion. • A *force* is any push or pull that causes an object to move, stop, or change speed or direction. • The greater the force, the greater the change in motion will be. The more massive an object, the less effect a given force will have on the object. • *Friction* is the resistance to motion created by two objects moving against each other. Friction creates heat. • Unless acted on by a force, objects in motion tend to stay in motion and objects at rest remain at rest.	In order to meet this standard, it is expected that students should be able to • describe the position of an object. • collect and display in a table and line graph time and position data for a moving object. • explain that speed is a measure of motion. • interpret data to determine if the speed of an object is increasing, decreasing, or remaining the same. • identify the forces that cause an object's motion. • describe the direction of an object's motion: up, down, forward, backward. • infer that objects have kinetic energy. • design an investigation to determine the effect of friction on moving objects.

Standard 4.3

The student will investigate and understand the characteristics of electricity. Key concepts include

a) conductors and insulators;
b) basic circuits (open/closed, parallel/series);
c) static electricity;
d) the ability of electrical energy to be transformed into heat, light, and mechanical energy;
e) simple electromagnets and magnetism; and
f) historical contributions in understanding electricity.

Understanding the Standard

This standard focuses on the characteristics of electricity as related to circuits and circuit components, magnetism, static charges, and historical contributions important to the understanding of electricity. As electrical energy is an integral part of modern civilization (e.g., powering our computers; lighting, heating and cooling our homes and businesses; and making the information age possible), it is critical that students begin to understand basic electricity concepts. This standard will be the basis for a more in-depth study in the eighth grade. It is intended that students will actively develop scientific investigation, reasoning, and logic skills (4.1) in the context of the key concepts presented in this standard.

Standard 4.3

Overview	Essential Knowledge, Skills, and Processes
The concepts developed in this standard include the following: • A continuous flow of negative charges (electrons) creates an electric *current*. The pathway taken by an electric current is a *circuit*. Closed circuits allow the movement of electrical energy. Open circuits prevent the movement of electrical energy. • Electrical energy moves through materials that are *conductors* (metals). *Insulators* (rubber, plastic, wood) do not conduct electricity well. • Among conducting materials, energy passes more or less easily because of the material's resistance. • In a series circuit, there is only one pathway for the current, but in a parallel circuit there are two or more pathways for it. • Rubbing certain materials together creates static electricity. • *Lightning* is the discharge of static electricity in the atmosphere. • Electrical energy can be transformed into heat, light, or mechanical energy. • Certain iron-bearing metals attract other such metals (also nickel and cobalt). • Lines of force extend from the poles of a magnet in an arched pattern defining the area over which magnetic force is exerted.	In order to meet this standard, it is expected that students should be able to • apply the terms *insulators*, *conductors*, *open* and *closed* in describing electrical circuits. • differentiate between an open and closed electric circuit. • use the dry cell symbols (–) and (+). • create and diagram a functioning series circuit using dry cells, wires, switches, bulbs, and bulb holders. • create and diagram a functioning parallel circuit using dry cells, wires, switches, bulbs, and bulb holders. • differentiate between a parallel and series circuit. • create a diagram of a magnetic field using a magnet. • compare and contrast a permanent magnet and an electromagnet. • explain how electricity is generated by a moving magnetic field. • design an investigation using static electricity to attract or repel a variety of materials. • explain how static electricity is created and occurs in nature. • construct a simple electromagnet using a wire, nail, or other iron-bearing object, and a dry cell.

Standard 4.3 (continued)

Overview	Essential Knowledge, Skills, and Processes
• An electric current creates a magnetic field, and a moving magnetic field creates an electric current. • A current flowing through a wire creates a magnetic field. Wrapping a wire around certain iron-bearing metals (iron nail) and creating a closed circuit is an example of a simple electromagnet. • Benjamin Franklin, Michael Faraday, and Thomas Edison made important discoveries about electricity.	• design and perform an investigation to determine the strength of an electromagnet. (The manipulated variable could be the number of coils of wire and the responding variable could be the number of paperclips the magnet can attract.) • describe the contributions of Ben Franklin, Michael Faraday, and Thomas Edison to the understanding and harnessing of electricity.

Grade Four
Science Strand

Life Processes

This strand focuses on the life processes of plants and animals and the specific needs of each. The major topics developed in the strand include basic needs and life processes of organisms, their physical characteristics, orderly changes in life cycles, behavioral and physical adaptations, and survival and perpetuation of species. This strand includes science standards K.6, 1.4, 1.5, 2.4, 3.4, and 4.4.

Standard 4.4

The student will investigate and understand basic plant anatomy and life processes. Key concepts include

a) the structures of typical plants (leaves, stems, roots, and flowers);
b) processes and structures involved with reproduction (pollination, stamen, pistil, sepal, embryo, spore, and seed);
c) photosynthesis (sunlight, chlorophyll, water, carbon dioxide, oxygen, and sugar); and
d) dormancy.

Understanding the Standard

This standard focuses on the basic life processes and anatomy of plants. It represents a more in-depth treatment of the plant structures and the processes associated with plant reproduction. Photosynthesis is introduced in this standard. Closely related standards from previous grades include K.6, 1.4, and 2.4. This standard also is closely connected with concepts presented in science standard 4.5. It is intended that students will actively develop scientific investigation, reasoning, and logic skills (4.1) in the context of the key concepts presented in this standard.

Standard 4.4

Overview	Essential Knowledge, Skills, and Processes
The concepts developed in this standard include the following: • For many typical green plants, there are anatomical structures that perform certain basic functions. For example, roots anchor the plants and take water and nutrients from the soil. Plant stems provide support and allow movement of water and nutrients. • The plant kingdom can be divided into two general groups: those that produce seeds and those that produce spores. • Many seed-producing plants have roots, stems, leaves, and flowers. The stamen and pistil are reproductive parts of the flower. The sepals are the small leaves that form the housing of the developing flower. • Pollination is part of the reproductive process of flowering plants. Pollination is the process by which pollen is transferred from the stamens to the stigma. • Some plants reproduce with spores. These include ferns and mosses. • Green plants produce their own food through the process of photosynthesis. Green plants use chlorophyll to produce food (sugar), using carbon dioxide, water, nutrients, and sunlight. Leaves are the primary food producing part of these plants. • Oxygen is produced during photosynthesis. • Dormancy is a period of suspended life processes brought on by changes in the environment.	In order to meet this standard, it is expected that students should be able to • create a model/diagram illustrating the parts of a flower (stamen, pistil, sepal, ovary, ovuole, seed) and explain the functions of those parts. • analyze a common plant: identify the roots, stems, leaves, and flowers, and explain the function of each. • create a model/diagram illustrating the reproductive processes in typical flowering plants, and explain the processes. • compare and contrast different ways plants are pollinated. • explain that ferns and mosses reproduce with spores rather than seeds. • explain the process of photosynthesis, using the following terminology: *sunlight*, *chlorophyll*, *water*, *carbon dioxide*, *oxygen*, and *sugar*. • design an investigation to determine the relationship between the presence of sunlight and plant growth. • explain the role of dormancy for common plants.

Grade Four
Science Strand

Living Systems

This strand begins in second grade and builds from basic to more complex understandings of a system, both at the ecosystem level and at the level of the cell. The concept of kingdoms of living things and a general classifying of organisms are also presented. The other major topics developed in the strand include the types of relationships among organisms in a food chain, different types of environments and the organisms they support, and the relationship between organisms and their nonliving environment. This strand includes science standards 2.5, 3.5, 3.6, 4.5, 5.5, and 6.7.

Standard 4.5

The student will investigate and understand how plants and animals in an ecosystem interact with one another and the nonliving environment. Key concepts include

a) behavioral and structural adaptations;
b) organization of communities;
c) flow of energy through food webs;
d) habitats and niches;
e) life cycles; and
f) influence of human activity on ecosystems.

Understanding the Standard

This standard focuses on the relationships among plants, animals, and the nonliving environment and brings together several elements of both Life Processes and Living Systems. This standard assumes students have a basic understanding that all living things are interrelated and dependent in some way on other living things and their environment. Plants and animals in ecological systems live in a web of interdependence in which each species contributes to the functioning of the overall system. Organisms live in a habitat to which they are structurally and behaviorally adapted. Certain conditions within environments determine which organisms and communities succeed there. This standard builds upon previous standards 1.5, 2.4, 2.5. 3.4, 3.5 and 3.6. It is intended that students will actively develop scientific investigation, reasoning, and logic skills (4.1) in the context of the key concepts presented in this standard.

Standard 4.5

Overview	Essential Knowledge, Skills, and Processes
The concepts developed in this standard include the following: • Organisms have structural adaptations, or physical attributes, that help them meet a life need. • Organisms also have behavioral adaptations, or certain types of activities they perform, which help them meet a life need. • The organization of communities is based on the utilization of the energy from the sun within a given ecosystem. The greatest amount of energy in a community is in the producers. • Within a community, organisms are dependent on the survival of other organisms. Energy is passed from one organism to another. • The organization of a community is defined by the interrelated niches within it. • The sun's energy cycles through ecosystems from producers through consumers and back into the nutrient pool through decomposers. • An organism's habitat provides food, water, shelter, and space. The size of the habitat depends on the organism's needs.	In order to meet this standard, it is expected that students will be able to • distinguish between structural and behavioral adaptations. • investigate and infer the function of basic adaptations and provide evidence for the conclusion. • understand that adaptations allow an organism to succeed in a given environment. • explain how different organisms use their unique adaptations to meet their needs. • describe why certain communities exist in given habitats. • illustrate the food webs in a local area and compare and contrast the niches of several different organisms within the community. • compare and contrast the differing ways an organism interacts with its surroundings at various stages of its life cycle. Specific examples include a frog and a butterfly. • differentiate among positive and negative influences of human activity on ecosystems.

Standard 4.5 (continued)

Overview	Essential Knowledge, Skills, and Processes
• A *niche* is the function that an organism performs in the food web of that community. A niche also includes everything else the organism does and needs in its environment. No two types of organisms occupy exactly the same niche in a community. • During its life cycle, an organism's role in the community — its niche — may change. For example, what an animal eats, what eats it, and other relationships will change. • Humans can have a major impact on ecosystems. • Habitat is the place or kind of place in which an animal or plant naturally lives.	

Grade Four
Science Strand

Interrelationships in Earth/Space Systems

This strand focuses on student understanding of how Earth systems are connected and how the Earth interacts with other members of the solar system. The topics developed include shadows; relationships between the sun and the Earth; weather types, patterns, and instruments; properties of soil; characteristics of the ocean environment; and organization of the solar system. This strand includes science standards K.7, 1.6, 2.6, 3.7, 4.6, 5.6, and 6.8.

Standard 4.6

The student will investigate and understand how weather conditions and phenomena occur and can be predicted. Key concepts include

a) weather measurements and meteorological tools (air pressure – barometer, wind speed – anemometer, rainfall – rain gauge, and temperature – thermometer); and
b) weather phenomena (fronts, clouds, and storms).

Understanding the Standard

This standard focuses on weather conditions and a more technical understanding of the tools and methods used to forecast future atmospheric conditions. Weather is introduced in science standard 2.6. It is intended that students will actively develop scientific investigation, reasoning, and logic skills (4.1) in the context of the key concepts presented in this standard.

Standard 4.6

Overview	Essential Knowledge, Skills, and Processes
The concepts developed in this standard include the following: • *Temperature* is the measure of the amount of heat energy in the atmosphere. • *Air pressure* is due to the weight of the air and is determined by several factors including the temperature of the air. • A *front* is the boundary between air masses of different temperature and humidity. • Cirrus, stratus, cumulus, and cumulo-nimbus clouds are associated with certain weather conditions. • *Cumulus clouds* are fluffy and white with flat bottoms. They usually indicate fair weather. However, when they get larger and darker on the bottom, they produce thunderstorms. • *Stratus clouds* are smooth, gray clouds that cover the whole sky (block out direct sunlight). Light rain and drizzle are usually associated with stratus clouds. • *Cirrus clouds* are feathery clouds. They are associated with fair weather. Cirrus clouds often indicate that rain or snow will fall within several hours. • Extreme atmospheric conditions create various kinds of storms such as thunderstorms, hurricanes, and tornadoes. • Different atmospheric conditions create different types of precipitation.	In order to meet this standard, it is expected that students will be able to • use a thermometer to compare air temperatures over a period of time. • analyze the changes in air pressure occurring over time, using a barometer, and predict what the changes mean in terms of changing weather patterns. • differentiate between the types of weather associated with high and low pressure air masses. Illustrate and label high and low pressure air masses and warm and cold fronts. • differentiate between cloud types (cirrus, stratus, cumulus, and cumulo-nimbus clouds) and the associated weather. • compare and contrast the formation of different types of precipitation (rain, snow, sleet, and hail). • recognize a variety of storm types, describe the weather conditions associated with each, and explain when they occur (thunderstorms, hurricanes, and tornadoes). • analyze and report information about temperature and precipitation on weather maps. • measure wind speed, using an anemometer. • measure precipitation with a rain gauge.

Standard 4.6 (continued)

Overview	Essential Knowledge, Skills, and Processes
• Meteorologists gather data by using a variety of instruments. • Meteorologists use data to predict weather patterns. • A *barometer* measures air pressure. • An *anemometer* measures wind speed. • A *rain gauge* measures precipitation. • A *thermometer* measures the temperature of the air.	• design an investigation in which weather data are gathered using meteorological tools and charted to make weather predictions.

Grade Four
Science Strand

Earth Patterns, Cycles, and Change

This strand focuses on student understanding of patterns in nature, natural cycles, and changes that occur both quickly and slowly over time. An important idea represented in this strand is the relationship among Earth patterns, cycles, and change and their effects on living things. The topics developed include noting and measuring changes, weather and seasonal changes, the water cycle, cycles in the Earth-moon-sun system, and change in the Earth's surface over time. This strand includes science standards K.8, K.9, 1.7, 2.7, 3.8, 3.9, 4.7, and 5.7.

Standard 4.7

The student will investigate and understand the relationships among the Earth, moon, and sun. Key concepts include

a) the motions of the Earth, moon, and sun (revolution and rotation);
b) the causes for the Earth's seasons and phases of the moon;
c) the relative size, position, age, and makeup of the Earth, moon, and sun; and
d) historical contributions in understanding the Earth-moon-sun system.

Understanding the Standard

This standard focuses on the Earth-moon-sun system and includes knowledge related to the motions of this system and the results of our unique position in it. This includes the presence of an atmosphere, liquid water, and life. The standard is built on concepts developed in science standards K.7, 1.6, and 3.8 and that will be further expanded in 6.8. A more in-depth study of the Earth's makeup is in standard 5.7. It is intended that students will actively develop scientific investigation, reasoning, and logic skills (4.1) in the context of the key concepts presented in this standard.

Standard 4.7

Overview	Essential Knowledge, Skills, and Processes
The concepts developed in this standard include the following: • The Earth completes one revolution around the sun every 365 days. The moon revolves around the Earth about once every month. • Due to its axial tilt, the Earth experiences seasons during its revolution around the sun. • The phases of the moon are caused by its position relative to the Earth and the sun. The phases of the moon include the new, waxing crescent, first quarter, waxing gibbous, full, waning gibbous, last quarter, and waning crescent. • The sun is an average-sized yellow star, about 110 times the diameter of the Earth. The sun is approximately 4.6 billion years old. • Our moon is a small rocky satellite, having about one-quarter the diameter of the Earth and one-eightieth its mass. It has extremes of temperature, virtually no atmosphere, no water, and no life. • The Earth is one of nine planets that revolve around the sun and comprise the solar system. The Earth, the third planet from the sun, is one of the four rocky inner planets. It is about 150 million kilometers from the sun. (The emphasis is placed on the Earth, rather than the other planets.)	In order to meet this standard, it is expected that students will be able to • differentiate between rotation and revolution. • describe how the Earth's axial tilt causes the seasons. • model the formation of the eight moon phases, sequence the phases in order, and describe how the phases occur. • describe the major characteristics of the sun, including its approximate size, color, age, and overall composition. • create and describe a model of the Earth-moon-sun system with approximate scale distances and sizes. • compare and contrast an Earth-centered to the sun-centered model of the solar system. • analyze the differences in what Aristotle, Ptolemy, Copernicus, and Galileo observed and what influenced their conclusions. • compare and contrast the surface conditions of the Earth, moon, and sun. • describe a contribution of the NASA Apollo missions to our understanding of the moon.

Standard 4.7 (continued)

Overview	Essential Knowledge, Skills, and Processes
• The Earth is a geologically active planet with a surface that is constantly changing. Unlike the other three inner planets (see previous bullet), it has large amounts of life-supporting water and an oxygen-rich atmosphere. The Earth's protective atmosphere blocks out most of the sun's damaging rays. • Our understanding of the solar system has changed from an Earth-centered model of Aristotle and Ptolemy to the sun-centered model of Copernicus and Galileo. • The NASA Apollo missions added greatly to our understanding of the moon. • Our understanding of the sun, moon, and the solar system continues to change with new scientific discoveries.	

Resources

This strand focuses on student understanding the role of resources in the natural world and how people can utilize those resources in a sustainable way. An important idea represented in this strand is the concept of management of resource use. This begins with basic ideas of conservation and proceeds to more abstract consideration of costs and benefits. The topics developed include conservation of materials, soil and plants as resources, energy use, water, Virginia's resources, and how public policy impacts the environment. This strand includes science standards K.10, 1.8, 2.8, 3.10, 3.11, 4.8, and 6.9.

Standard 4.8

The student will investigate and understand important Virginia natural resources. Key concepts include

a) watershed and water resources;
b) animals and plants;
c) minerals, rocks, ores, and energy sources; and
d) forests, soil, and land.

Understanding the Standard

Virginia has a rich variety of natural resources. These provide the raw materials for our daily lives and sustain our economy. Natural resources are finite and must be used wisely to insure their continued availability. This concept of natural resources is introduced in 1.8 and extended in 6.9. It is intended that students will actively develop scientific investigation, reasoning, and logic skills (4.1) in the context of the key concepts presented in this standard.

Standard 4.8

Overview	Essential Knowledge, Skills, and Processes
The concepts developed in this standard include the following: • Virginia is rich in a wide variety of natural resources, including forests, arable (farmable) land, coal, sand and aggregates (rocks), wildlife and aquatic organisms, clean water and air, and beautiful scenery. • A watershed is an area over which surface water (and the materials it carries) flows to a single collection place. The Chesapeake Bay watershed covers approximately half of Virginia's land area. The other two major watershed systems are the Gulf of Mexico and the North Carolina Sounds. • Virginia's water resources include groundwater, lakes, reservoirs, rivers, bays, and the Atlantic Ocean. • Virginia has a great variety of plant and animal resources. • Natural and cultivated forests are a widespread resource in Virginia. • Virginia's soil and land support a great variety of life, provide space for many economic activities, and offer a variety of recreational opportunities.	In order to meet this standard, it is expected that students will be able to • compare and contrast natural and man-made resources. • distinguish among rivers, lakes, and bays; describe characteristics of each; and name an example of each in Virginia. • create and interpret a model of a watershed. Evaluate the statement: "We all live downstream." • identify watershed addresses. • recognize the importance of Virginia's mineral resources, including coal, limestone, granite, and sand and gravel. • appraise the importance of natural and cultivated forests in Virginia. • describe a variety of soil and land uses important in Virginia.