

Curriculum Map - Science - Science 6

Unit	Benchmarks
Trimester 1	
Early life to Fungi <i>(updated 12/17/23)</i>	SC.5.N.1.1(A) Define a problem, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigations of various types such as: systematic observations, experiments requiring the identification of variables, collecting and organizing data, interpreting data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions. SC.5.N.1.2(A) Explain the difference between an experiment and other types of scientific investigation. SC.5.N.1.3(A) Recognize and explain the need for repeated experimental trials. SC.5.N.1.4(A) Identify a control group and explain its importance in an experiment. SC.5.N.1.6(A) Recognize and explain the difference between personal opinion/interpretation and verified observation. SC.5.N.2.1(A) Recognize and explain that science is grounded in empirical observations that are testable; explanation must always be linked with evidence. SC.5.N.2.2(A) Recognize and explain that when scientific investigations are carried out, the evidence produced by those investigations should be replicable by others. SC.6.L.14.3(A) Recognize and explore how cells of all organisms undergo similar processes to maintain homeostasis, including extracting energy from food, getting rid of waste, and reproducing. SC.6.L.14.6(A) Compare and contrast types of infectious agents that may infect the human body, including viruses, bacteria, fungi, and parasites. SC.6.L.15.1(A) Analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains. SC.6.N.1.1(A) Define a problem from the sixth grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions. SC.6.N.1.2(A) Explain why scientific investigations should be replicable. SC.6.N.1.4(A) Discuss, compare, and negotiate methods used, results obtained, and explanations among groups of students conducting the same investigation. SC.6.N.1.5(A) Recognize that science involves creativity, not just in designing experiments, but also in creating explanations that fit evidence. SC.6.N.2.2(A) Explain that scientific knowledge is durable because it is open to change as new evidence or interpretations are encountered. SC.6.N.3.1(A) Recognize and explain that a scientific theory is a well-supported and widely accepted explanation of nature and is not simply a claim posed by an individual. Thus, the use of the term theory in science is very different than how it is used in everyday life. SC.7.L.15.3(A) Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species. SC.5.N.1.5(I) Recognize and explain that authentic scientific investigation frequently does not parallel the steps of "the scientific method." SC.6.L.14.2(I) Investigate and explain the components of the scientific theory of cells (cell theory): all organisms are composed of cells (single-celled or multi-cellular), all cells come from pre-existing cells, and cells are the basic unit of life. SC.6.N.1.3(I) Explain the difference between an experiment and other types of scientific investigation, and explain the relative benefits and limitations of each. SC.6.N.2.1(I) Distinguish science from other activities involving thought. SC.6.N.2.3(I) Recognize that scientists who make contributions to scientific knowledge come from all kinds of backgrounds and possess varied talents, interests, and goals. SC.6.N.3.2(I) Recognize and explain that a scientific law is a description of a specific relationship under given conditions in the natural world. Thus, scientific laws are different from societal laws. SC.6.N.3.3(I) Give several examples of scientific laws. SC.6.N.3.4(I) Identify the role of models in the context of the sixth grade science benchmarks. SC.7.L.15.1(I) Recognize that fossil evidence is consistent with the scientific theory of evolution that living things evolved from earlier species. SC.7.L.15.2(I) Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms.
Unit	Benchmarks
Trimester 2	

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<p>Plants and Animals <i>(updated 11/13/23)</i></p>	<p>SC.5.L.14.2(A) Compare and contrast the function of organs and other physical structures of plants and animals, including humans, for example: some animals have skeletons for support -- some with internal skeletons others with exoskeletons -- while some plants have stems for support.</p> <p>SC.5.L.15.1(A) Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.</p> <p>SC.6.L.14.3(A) Recognize and explore how cells of all organisms undergo similar processes to maintain homeostasis, including extracting energy from food, getting rid of waste, and reproducing.</p> <p>SC.6.L.14.4(A) Compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles.</p> <p>SC.8.L.18.1(A) Describe and investigate the process of photosynthesis, such as the roles of light, carbon dioxide, water and chlorophyll; production of food; release of oxygen.</p> <p>SC.8.L.18.2(A) Describe and investigate how cellular respiration breaks down food to provide energy and releases carbon dioxide.</p> <p>SC.5.L.17.1(I) Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.</p> <p>SC.6.L.14.2(I) Investigate and explain the components of the scientific theory of cells (cell theory): all organisms are composed of cells (single-celled or multi-cellular), all cells come from pre-existing cells, and cells are the basic unit of life.</p> <p>SC.6.N.1.1(I) Define a problem from the sixth grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.</p> <p>SC.6.N.1.2(I) Explain why scientific investigations should be replicable.</p> <p>SC.6.N.1.4(I) Discuss, compare, and negotiate methods used, results obtained, and explanations among groups of students conducting the same investigation.</p> <p>SC.6.N.1.5(I) Recognize that science involves creativity, not just in designing experiments, but also in creating explanations that fit evidence.</p> <p>SC.6.N.2.1(I) Distinguish science from other activities involving thought.</p> <p>SC.6.N.2.2(I) Explain that scientific knowledge is durable because it is open to change as new evidence or interpretations are encountered.</p> <p>SC.6.N.2.3(I) Recognize that scientists who make contributions to scientific knowledge come from all kinds of backgrounds and possess varied talents, interests, and goals.</p> <p>SC.6.N.3.1(I) Recognize and explain that a scientific theory is a well-supported and widely accepted explanation of nature and is not simply a claim posed by an individual. Thus, the use of the term theory in science is very different than how it is used in everyday life.</p> <p>SC.6.N.3.2(I) Recognize and explain that a scientific law is a description of a specific relationship under given conditions in the natural world. Thus, scientific laws are different from societal laws.</p> <p>SC.6.N.3.3(I) Give several examples of scientific laws.</p> <p>SC.6.N.3.4(I) Identify the role of models in the context of the sixth grade science benchmarks.</p> <p>SC.7.L.15.2(I) Explore the scientific theory of evolution by recognizing and explaining ways in which genetic variation and environmental factors contribute to evolution by natural selection and diversity of organisms.</p> <p>SC.7.L.15.3(I) Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.</p> <p>SC.8.N.4.1(I) Explain that science is one of the processes that can be used to inform decision making at the community, state, national, and international levels.</p> <p>SC.8.N.4.2(I) Explain how political, social, and economic concerns can affect science, and vice versa.</p>
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Unit	Benchmarks
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Trimester 3

<p>Environmental Science <i>(updated 11/13/23)</i></p>	<p>SC.5.L.15.1(A) Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.</p> <p>SC.5.L.17.1(A) Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.</p> <p>SC.6.E.7.7(A) Investigate how natural disasters have affected human life in Florida.</p> <p>SC.6.N.1.1(A) Define a problem from the sixth grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.</p> <p>SC.7.L.15.3(A) Explore the scientific theory of evolution by relating how the inability of a species to adapt within a changing environment may contribute to the extinction of that species.</p>
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SC.7.L.17.1(A)

Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

SC.7.L.17.2(A)

Compare and contrast the relationships among organisms such as mutualism, predation, parasitism, competition, and commensalism.

SC.7.L.17.3(A)

Describe and investigate various limiting factors in the local ecosystem and their impact on native populations, including food, shelter, water, space, disease, parasitism, predation, and nesting sites.

SC.5.E.7.5(I)

Recognize that some of the weather-related differences, such as temperature and humidity, are found among different environments, such as swamps, deserts, and mountains.

SC.5.E.7.6(I)

Describe characteristics (temperature and precipitation) of different climate zones as they relate to latitude, elevation, and proximity to bodies of water.

SC.6.E.7.6(I)

Differentiate between weather and climate.

SC.6.E.7.8(I)

Describe ways human beings protect themselves from hazardous weather and sun exposure.

SC.6.E.7.9(I)

Describe how the composition and structure of the atmosphere protects life and insulates the planet.

SC.6.L.15.1(I)

Analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains.

SC.6.N.1.2(I)

Explain why scientific investigations should be replicable.

SC.6.N.1.3(I)

Explain the difference between an experiment and other types of scientific investigation, and explain the relative benefits and limitations of each.

SC.6.N.1.4(I)

Discuss, compare, and negotiate methods used, results obtained, and explanations among groups of students conducting the same investigation.

SC.6.N.1.5(I)

Recognize that science involves creativity, not just in designing experiments, but also in creating explanations that fit evidence.

SC.6.N.2.1(I)

Distinguish science from other activities involving thought.

SC.6.N.2.2(I)

Explain that scientific knowledge is durable because it is open to change as new evidence or interpretations are encountered.

SC.6.N.3.1(I)

Recognize and explain that a scientific theory is a well-supported and widely accepted explanation of nature and is not simply a claim posed by an individual. Thus, the use of the term theory in science is very different than how it is used in everyday life.

SC.6.N.3.2(I)

Recognize and explain that a scientific law is a description of a specific relationship under given conditions in the natural world. Thus, scientific laws are different from societal laws.

SC.8.N.4.1(I)

Explain that science is one of the processes that can be used to inform decision making at the community, state, national, and international levels.