

Third Grade Science - First Six Weeks

Essential Questions: What tools, skills, knowledge, and dispositions are needed to conduct scientific inquiry? How is the earth affected by long-term and short-term geological cycles and the influence of man? How does natural selection explain how organisms have changed over time? Is a given object /animal/ plant living or nonliving?

Grade Level Expectations

EMBEDDED INQUIRY

GLE 0307.Inq.1 Explore different scientific phenomena by asking questions, making logical predictions, planning investigations, and recording data.

GLE 0307.Inq.2 Select and use appropriate tools and simple equipment to conduct an investigation.

GLE 0307.Inq.3 Organize data into appropriate tables, graphs, drawings, or diagrams.

GLE 0307.Inq.4 Identify and interpret simple patterns of evidence to communicate the findings of multiple investigations.

GLE 0307.Inq.5 Recognize that people may interpret the same results in different ways.

GLE 0307.Inq.6 Compare the results of an investigation with what scientists already accept about this question.

EARTH

GLE 0307.7.1 Use information and illustrations to identify the earth's major landforms and water bodies.

GLE 0307.7.2 Recognize that rocks can be composed of one or more minerals.

GLE 0307.7.3 Distinguish between natural and man-made objects.

GLE 0307.7.4 Design a simple investigation to demonstrate how earth materials can be conserved or recycled.

State Performance Indicators

EMBEDDED INQUIRY

SPI 0307.Inq.1 Select an investigation that could be used to answer a specific question.

EARTH

SPI 0307.7.1 Classify landforms and bodies of water according to their geological features and identify them on a map.

[Landforms in the Continental United States](#)

SPI 0307.7.2 Describe how rocks can be classified according to their physical characteristics.

Rocks and Soils

<http://sln.fi.edu/qa97/spotlight1/spotlight1.html>

<http://www.fossweb.com/modulesK-2/PebblesSandandSilt/activities/findearthmaterials.html>

<http://www.fossweb.com/modulesK-2/PebblesSandandSilt/index.html>

SPI 0307.7.3 Identify an object as natural or man-made.

<http://www.crickweb.co.uk/ks1science.html#materials2d>

Resources: Natural to Manmade

SPI 0307.7.4 Determine methods for conserving natural resources.

<http://library.thinkquest.org/15684/>

http://www.ehow.com/how_2163917_conserve-natural-resources.html

<http://www.wi.nrcs.usda.gov/about/challenge.html>

http://www.energyquest.ca.gov/games/energy_test/energy_IQ1.html

http://www.energyquest.ca.gov/games/energy_test/energy_IQ2.html

Checks for Understanding

EMBEDDED INQUIRY

- ✓ **0307.Inq.1** Identify specific investigations that could be used to answer a particular question and identify reasons for this choice.
- ✓ **0307.Inq.2** Identify tools needed to investigate specific questions.
- ✓ **0307.Inq**
 - .3 Maintain a science notebook that includes observations, data, diagrams, and explanations.
- ✓ **0307.Inq.4** Analyze and communicate findings from multiple investigations of similar phenomena to reach a conclusion.

EARTH

- ✓ **0307.7.1** Use a venn diagram to compare and contrast two different landforms or bodies of water.

- ✓ **0307.7.2** Analyze the physical characteristics of different kinds of rocks.
- ✓ **0307.7.3** Use a magnifier to observe, describe, and compare materials to determine if they are natural or man-made.
- ✓ **0307.7.4** Design and evaluate a method for reusing or recycling classroom materials.
- ✓ **0307.7.5** Create a web that demonstrates the link between basic human needs and the earth's resources.

Assessment: performance assessment, rubric, teacher-made tests, observations, oral questioning, journaling

Academic Vocabulary: anemometer, atmosphere, barometer, cirrus, cross section, cumulonimbus, cumulus, conductor, conservation, crystallize, decomposer, endangered, force, heredity, mixture, natural resources, orbit, physical change, pitch/volume, predator/prey, rain gauge, revolution, solar system, stratus, threatened, thriving, water cycle, wind vane

Third Grade Science -Second Six Weeks

Grade Level Expectations

THE UNIVERSE

GLE 0307.6.1 Identify and compare major components of the solar system.

THE ATMOSPHERE

GLE 0307.8.1 Recognize that there are a variety of atmospheric conditions that can be measured.

GLE 0307.8.2 Use tools such as the barometer, thermometer, anemometer, and rain gauge to measure atmospheric conditions.

GLE 0307.8.3 Identify cloud types associated with particular atmospheric conditions.

GLE 0307.8.4 Predict the weather based on cloud observations.

Essential Questions:

What big ideas guide human understanding about the origin and structure of the universe, Earth's place in the cosmos, and observable motions and patterns in the sky? How do the physical characteristics and the chemical makeup of the atmosphere influence surface processes and life on Earth?

State Performance Indicators

THE UNIVERSE

SPI 0307.6.1 Identify the major components of the solar system, i.e., sun, planets, and moons.

http://starchild.gsfc.nasa.gov/docs/StarChild/solar_system_level1/activity/solar_system_shuffle.html At the bottom of this web page you will find a shuffled solar system deck of cards laid out for you. You will also find a description of each object in the deck. Your job is to match the card with the correct description.

http://www.kidsastronomy.com/solar_system.htm

THE ATMOSPHERE

SPI 0307.8.1 Select appropriate tools used for collecting weather data that correspond to the atmospheric condition being measured.

<http://www.weatherwizkids.com/>

SPI 0307.8.2 Match major cloud types with specific atmospheric conditions.

<http://globe.gov/sda-bin/m2h?gl/clouds.men>

http://weathereye.kgan.com/cadet/forecast/figger_cloud.html

<http://sciencera.com/earth-sciences/meteorology/how-to-forecast-weather-by-studying-clouds/>

<http://www.eo.ucar.edu/webweather/cloudmatch.html>

Checks for Understanding

- ✓ Create a model of the solar system depicting the major components and their relative positions and sizes.
- ✓ Use a table to compare and contrast the major solar system components.
- ✓ Select appropriate tools used for collecting weather data that correspond to the atmospheric condition being measured.
- ✓ Identify major cloud types and associate them with particular weather conditions.

Assessment: performance assessment, rubric, teacher-made tests, observations, oral questioning, journaling

Academic Vocabulary: anemometer, atmosphere, barometer, cirrus, cross section, cumulonimbus, cumulus, conductor, conservation, crystallize, decomposer, endangered, force, heredity, mixture, natural resources, orbit, physical change, pitch/volume, predator/prey, rain gauge, revolution, solar system, stratus, threatened, thriving, water cycle, wind vane

Third Grade Science Third Six Weeks

Essential Questions: How are plant and animal cells organized to carry on the process of life? How do living things interact with one another and the non-living elements of their environment? What are the principal mechanisms by which living things reproduce and transmit information between parents and offspring? What are the stages in the life cycle of a given organism? How are you physically like your parents?

Grade Level Expectations

CELLS

GLE 0307.1.1 Use magnifiers to make observations of specific plant and body parts and describe their function.

BIODIVERSITY AND CHANGE

GLE 0307.5.1 Explore the relationship between an organism's characteristics and its ability to survive in a particular environment.

GLE 0307.5.2 Classify organisms as thriving, threatened, endangered, or extinct

INTERDEPENDENCE

GLE 0307.2.1 Categorize things as living or non-living.

GLE 0307.2.2 Explain how organisms with similar needs compete with one another for resources.

HEREDITY

GLE 0307.4.1 Identify the different life stages through which animals pass.

GLE 0307.4.2 Recognize common human characteristics that are transmitted from parents to offspring.

State Performance Indicators

Cells

SPI 0307.1.1 Identify specific parts of a plant and describe their function.
<http://www.graves.k12.ky.us/powerpoints/elementary/> scroll down to "Looking at Plants and Animals" and "The Life Cycle of a Bean Plant"
<http://plants.pppst.com/index.html>

Biodiversity and Change

SPI 0307.5.1 Investigate an organism's characteristics and evaluate how these features enable it to survive in a particular environment.
<http://www.chias.org/online/hoh/adaptation.html>
http://www.ecokids.ca/pub/eco_info/topics/climate/adaptations/index.cfm
<http://www.cwnp.org/adaptations.html>

SPI 0307.5.2 Investigate populations of different organisms and classify them as thriving, threatened, endangered, or extinct.
<http://animals.pppst.com/endangered.html>

SPI 0307.5.3 Match the organism with evidence of its prior existence.

Interdependence

SPI 0307.2.1

Distinguish between living and non-living things.

<http://www.schools.utah.gov/curr/science/sciber00/7th/classify/living/quiz/1.htm>

<http://seplessons.ucsf.edu/node/769>

SPI 0307.2.2

Determine how animals compete for resources such as food, space, water, air, and shelter.

Heredity

SPI 0307.4.1

Select an illustration that shows how an organism changes as it develops.

<http://www.springboardmagazine.com/science/lifecircle.htm>

SPI 0307.4.2

Distinguish between characteristics that are transmitted from parents to offspring and those that are not.

<http://science.pppst.com/dna.html>

Checks for Understanding

- ✓ Use a magnifier to investigate and describe the function of root hairs, stem cross sections, and leaf veins.
- ✓ Use a magnifier to investigate and describe the function of skin pores, hair follicles, finger nails, veins, and cuticles, etc.
- ✓ Create representations of animals that have characteristics necessary to survive in a particular environment.
- ✓ Investigate the connection between an organism's characteristics and its ability to survive in a specific environment.
- ✓ Describe how environmental factors change over place and time.
- ✓ Determine how changes in an environmental variable can affect plants and animals of an area.
- ✓ Construct a diorama that shows plants and animals in an appropriate environment.
- ✓ Identify evidence used to determine the previous existence of an organism.
- ✓ Use a data chart or informational text to classify organisms as thriving, threatened, endangered, or extinct.
- ✓ Use a T-chart to compare and contrast the characteristics of living and non-living things.
- ✓ Label a drawing of an environment to illustrate interrelationships among plants and animals.
- ✓ Construct a diagram to demonstrate how plants, animals, and the environment interact to provide basic life requirements.

- ✓ Sequence diagrams that illustrate various stages in the development of an organism.
- ✓ Create a timeline to depict the changes that occur during an organism's life cycle.
- ✓ Differentiate among the stages in the life cycle of a butterfly, mealworm, frog, and plant.
- ✓ Draw conclusions about the similarities and differences between parents and their offspring.
- ✓ Make a list of human characteristics that are transmitted from parents to their offspring.

Assessment: performance assessment, rubric, teacher-made tests, observations, oral questioning, journaling

Academic Vocabulary: anemometer, atmosphere, barometer, cirrus, cross section, cumulonimbus, cumulus, conductor, conservation, crystallize, decomposer, endangered, force, heredity, mixture, natural resources, orbit, physical change, pitch/volume, predator/prey, rain gauge, revolution, rotation, solar system, stratus, threatened, thriving, water cycle, wind vane

Third Grade Science-Fourth Six Weeks

Essential Questions: What causes objects to move differently under different circumstances? What are the scientific principles that explain gravity and electromagnetism?

Grade Level Expectations

MOTION

GLE 0307.11.1 Explore how the direction of a moving object is affected by unbalanced forces.

GLE 0307.11.2 Recognize the relationship between the mass of an object and the force needed to move it.

GLE 0307.11.3 Investigate how the pitch and the volume of a sound can be changed.

FORCES IN NATURE

GLE 0307.12.1 Explore how magnets attract objects made of certain metals.

State Performance Indicators

MOTION

SPI 0307.11.1 Identify how the direction of a moving object is changed by an applied force.

http://www.bbc.co.uk/schools/scienceclips/ages/6_7/forces_movement.shtml

<http://www.seed.slb.com/labcontent.aspx?id=17210&terms=friction>

SPI 0307.11.2 Demonstrate how changing the mass affects a balanced system.

<http://www.icteachers.co.uk/children/sats/forces.htm>

SPI 0307.11.3 Distinguish between pitch and volume.

<http://www.dosits.org/resources/>

SPI 0307.11.4 Identify how sounds with different pitch and volume are produced.

<http://www.exploratorium.edu/music/>

<http://www.iknowthat.com/com/L3?Area=Science%20Lab> Select **Sound** in the list of labs. The illustration is animated and shows how clapping hands make sound. Next, click on **Exploring Pitch and Volume** near the top of the sound window. Strike the glasses hard and then gently and observe the difference. Now look at the sound waves as you strike different glasses. Click on the **book** in the bottom left corner

to read about sound.

http://www.bbc.co.uk/schools/scienceclips/ages/9_10/index_noflash.shtml

<http://www.smm.org/sound/activity/ssl10.htm>

FORCES IN NATURE

SPI 0307.12.1 Recognize that magnets can move objects without touching them.

<http://www.fossweb.com/modules3-6/MagnetismandElectricity/activities/kitchen.html>

http://www.bbc.co.uk/schools/ks2bitesize/science/physical_processes/magnet_springs/play.shtml

SPI 0307.12.2 Identify objects that are attracted to magnets.

<http://www.fossweb.com/modules3-6/MagnetismandElectricity/activities/kitchen.html>

<http://my.execpc.com/~rhoadley/magattr.htm>

<http://www.quia.com/pop/36671.html>

<http://www.quia.com/rr/42166.html>

[Marvelous Magnets](#)

Checks for Understanding

- ✓ Plan an investigation to illustrate how changing the mass affects a balanced system.
- ✓ Use a variety of materials to produce sounds of different pitch and volume.
- ✓ Classify a variety of taped sounds according to their pitch and volume.
- ✓ Experiment with magnets to determine how distance affects magnetic attraction.
- ✓ Determine that only certain types of objects are attracted to magnets.

Assessment: performance assessment, rubric, teacher-made tests, observations, oral questioning, journaling

Academic Vocabulary: anemometer, atmosphere, barometer, cirrus, cross section, cumulonimbus, cumulus, conductor, conservation, crystallize, decomposer, endangered, force, heredity, mixture, natural resources, orbit, physical change, pitch/volume, predator/prey, rain gauge, revolution, rotation, solar system, stratus, threatened, thriving, water cycle, wind vane

Third Grade Science - Fifth Six Weeks

Essential Questions: What scientific information explains how matter and energy flow through the biosphere? How does the structure of matter influence its physical and chemical behavior? What basic energy related ideas are essential for understanding the dependency of the natural and man-made worlds on energy?

Grade Level Expectations

FLOW OF MATTER AND ENERGY

GLE 0307.3.1 Describe how animals use food to obtain energy and materials for growth and repair

MATTER

GLE 0307.9.1 Design a simple experiment to determine how the physical properties of matter can change over time and under different conditions.

GLE 0307.9.2 Investigate different types of mixtures.

GLE 0307.9.3 Describe different methods to separate mixtures.

ENERGY

GLE 0307.10.1 Investigate phenomena that produce heat.

GLE 0307.10.2 Design and conduct an experiment to investigate the ability of different materials to conduct heat.

State Performance Indicators

FLOW OF MATTER AND ENERGY

SPI 0307.3.1 Identify the basic needs of plants and animals.

http://www.bbc.co.uk/schools/scienceclips/ages/7_8/index_noflash.shtml

http://www.teachersdomain.org/resource/tdc02.sci.life.colt.lp_stayalive/

SPI 0307.3.2 Recognize that animals obtain their food by eating plants and other animals.

[Great PowerPoint with Questions on Animal Groups](#)

[Food Chain Video](#)

[How do plants and animals obtain their food?](#) PowerPoint

[Food Chain Sequencing Game](#)

<http://www.eduweb.com/portfolio/earthsystems/food/foodweb4.html>

http://www.bbc.co.uk/schools/ks2bitesize/science/living_things/food_chains/play.shtml

<http://www.vtaide.com/png/foodchains.htm>

http://www.bbc.co.uk/schools/scienceclips/ages/8_9/habitats.shtml

<http://www.msnuceus.org/membership/storybooks/foodchain.html>

MATTER

SPI 0307.9.1 Describe a substance in terms of its physical properties.

<http://www.bbc.co.uk/schools/ks2bitesize/science/>

http://www.bbc.co.uk/schools/ks2bitesize/science/materials/gases_liquids_solids/play.shtml

<http://www.brainpopjr.com/science/matter/solidliquidsandgases/matching/>

<http://www.harcourtschool.com/activity/mixture/mixture.html>

http://www.bbc.co.uk/schools/scienceclips/ages/9_10/index_noflash.shtml

http://www.bbc.co.uk/schools/scienceclips/ages/8_9/index_noflash.shtml

<http://www.iknowthat.com/com/L3?Area=Science%20Lab>

Select **Matter** in the list of labs. The illustration names the physical state of objects. Next, click on **Water Changes State** near the top of the matter window. Hold down the blue button to lower the temperature of water to freezing, then hold down the red button till water boils. Click on the **book** in the bottom left corner to read about matter.

SPI 0307.9.2 Identify methods for separating different types of mixtures.

<http://www.tutorvista.com/content/chemistry/chemistry-i/elements-compounds/ammonia-and-sand.php>

<http://www.tutorvista.com/content/chemistry/chemistry-i/elements-compounds/sand-and-water.php>

<http://www.quia.com/jg/33882.html>

<http://www.mikecurtis.org.uk/mixtures.htm>

ENERGY

SPI 0307.10.1 Use an illustration to identify various sources of heat energy.

<http://www.reachoutmichigan.org/funexperiments/agesubject/lessons/smores.html>

http://www.energyquest.ca.gov/time_machine/time_machine_categories.php

SPI 0307.10.2 Classify materials according to their ability to conduct heat.

http://www.pelikan.com/pulse/Pulsar/en_US.CMS.displayCMS.47709./a-practical-experiment---teachers-issue_-summer-2002

http://www1.eere.energy.gov/kids/roofus/pizza_box.html

Checks for Understanding

- ✓ **0307.3.1** Label a diagram to illustrate the food relationships that exist between plant and animals.
- ✓ **0307.3.2** Create a chart to show how plants and animals satisfy their energy requirements.
- ✓ **0307.3.3** Identify structures used by different plants and animals to meet their basic energy requirements.
- ✓ **0307.3.2 Use a piece of text to obtain basic information about how plants and animals obtain food.**
- ✓ **0307.9.1** Use physical properties to compare and contrast substances.
- ✓ **0307.9.2** Compare and contrast events that demonstrate evaporation, crystallization, and melting.
- ✓ **0307.9.3** Make predictions and conduct experiments about conditions needed to change the physical properties of particular substances.
- ✓ **0307.9.4** Classify combinations of materials according to whether they have retained or lost their individual properties.
- ✓ **0307.9.5** Investigate different ways to separate mixtures such as filtration, evaporation, settling, or using a sieve.
- ✓ **0307.10.1** Associate the sun's energy with the melting of an ice cube placed in a window.
- ✓ **0307.10.2** Investigate various materials to explore heat conduction.

Assessment: performance assessment, rubric, teacher-made tests, observations, oral questioning, journaling

Academic Vocabulary: anemometer, atmosphere, barometer, cirrus, cross section, cumulonimbus, cumulus, conductor, conservation, crystallize, decomposer, endangered, force, heredity, mixture, natural resources, orbit, physical change, pitch/volume, predator/prey, rain gauge, revolution, rotation, solar system, stratus, threatened, thriving, water cycle, wind vane

Third Grade Science - Sixth Six Weeks

Essential Questions: How do science concepts, engineering skills, and applications of technology improve the quality of life?

Grade Level Expectations

EMBEDDED TECHNOLOGY AND ENGINEERING

GLE 0307.T/E.1 Describe how tools, technology, and inventions help to answer questions and solve problems.

GLE 0307.T/E.2 Recognize that new tools, technology, and inventions are always being developed.

GLE 0307.T/E.3 Identify appropriate materials, tools, and machines that can extend or enhance the ability to solve a specified problem.

GLE 0307.T/E.4 Recognize the connection between scientific advances, new knowledge, and the availability of new tools and technologies.

GLE 0307.T/E.5 Apply a creative design strategy to solve a particular problem generated by societal needs and wants.

State Performance Indicators

SPI 0307.T/E.1 Select a tool, technology, or invention that was used to solve a human problem.

<http://www.mos.org/sln/Leonardo/LeosMysteriousMachinery.html>

http://audio.scienceupdate.com/010321_sciup_rad.mp3 audio only

[Inventions \(grade 3\) pre-assessment, KWL, test, answers, matching worksheet, wkst answers](#)

SPI 0307.T/E.2 Recognize the connection between a scientific advance and the development of a new tool or technology.

<http://www.sciencetoymaker.org/>

<http://www.bbc.co.uk/cbeebies/balamory/games/>

Checks for Understanding

✓ **0307 T/E. 1** Explain how different inventions and technologies impact people and other living organisms.

✓ **0307.T/E 2** Design a tool or a process that addresses an identified problem caused by human activity.

✓ **0307. T/E 3** Determine criteria to evaluate the effectiveness of a solution to a specified problem,

✓ **0307.T/E 4** Evaluate an invention that solves a problem and determine ways to improve the design.

Assessment: performance assessment, rubric, teacher-made tests, observations, oral questioning, journaling

Academic Vocabulary: anemometer, atmosphere, barometer, cirrus, cross section, cumulonimbus, cumulus, conductor, conservation, crystallize, decomposer, endangered, force, heredity, mixture, natural resources, orbit, physical change, pitch/volume, predator/prey, rain gauge, revolution, solar system, stratus, threatened, thriving, water cycle, wind vane

