

Science Targets - Grade 8

Earth and Space Science	Environmental Science	History and Nature	Life Science	Physical Science	Science as a Process
___ I can explain how fossils form.	___ I can find the needs that must be met by an organism's surroundings.	___ I can explore the use of science as a tool that can help investigate and answer questions about life, physical and earth science.		___ I can tell about the structure of an atom.	___ I can communicate results in a variety of ways.
___ I can identify three kinds of fossils.	___ I can find biotic and abiotic parts of a habitat.	___ I can explain how classroom scientific investigations relate to established scientific principles.		___ I can tell about the elements in terms of their atoms.	___ I can describe how collaboration can be a useful way to solve scientific problems.
___ I can explain what fossils tell about organisms and environments of the past.	___ I can tell about the levels of organization within an ecosystem	___ I can explain that scientific investigations involve the common elements of systematic observations , the careful collection of relevant evidence, logical reasoning and innovation in developing hypotheses and explanations.		___ I can explain how models are useful in understanding atoms.	___ I can explain that different kinds of scientific questions may lead to different types of scientific investigations.
___ I can state the law of superposition.	___ I can tell about methods for determining the size of a population.	___ I can trace the development of an invention, theory, or discovery to demonstrate the dynamic nature of science.		___ I can explain how Mendeleev discovered the pattern that lead to the periodic table.	___ I can use appropriate steps to create a plan using the scientific method.
___ I can tell how geologists determine the relative age of rocks.	___ I can explain the causes of changes in a population.	___ I can describe how people use science and technology in their professions.		___ I can tell about how the organization of the periodic table is used to predict the properties of elements.	___ I can carry out various investigations using the appropriate steps of the scientific method.
___ I can explain how index fossils are useful to geologists.	___ I can find factors that limit population growth.	___ I can describe the advantages and disadvantages which accompany the existing technology or the introduction of a new technology.		___ I can list the physical properties of metals.	___ I can collect data and make observations by analyzing trends in various collections at an age-appropriate level.
___ I can explain what happens during radioactive decay.	___ I can explain how an organism's adaptations help it to survive.	___ I can describe how the use of science and technology can help solve an individual or community problem.		___ I can explain how the reactivity of metals changes across the periodic table.	___ I can use appropriate metric measurements and tools to collect and organize data.
___ I can tell about what can be learned from radioactive dating.	___ I can tell about the major kinds of interactions among organisms in an ecosystem.	___ I can describe contributions to the advancement of science made by people of different cultures, and different times in history.		___ I can explain how the elements that follow uranium are produced.	___ I can formulate a hypothesis to create a written plan for investigation.

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___ I can explain why the geologic time scale is used to show Earth's history.	___ I can tell about three types of symbiotic relationships.			___ I can tell about the properties of nonmetals.	___ I can build and create models to make observations and predict an outcome.
___ I can tell about the different units of the geologic time scale.	___ I can tell about the differences between primary and secondary succession.			___ I can tell how metalloids are useful	___ I can identify and predict cause-effect relationships within a system.
___ I can state when the Earth was formed.	___ I can name and tell about the energy roles that organisms play in an ecosystem.			___ I can name the properties of acids and bases.	___ I can explain how scientific knowledge changes as new knowledge is acquired and previous theories are modified.
___ I can explain how Earth's physical features developed during the Precambrian time.	___ I can explain how energy moves through an ecosystem.			___ I can tell about where acids and bases are commonly used.	___ I can describe the relationship between evidence and explanations at an age-appropriate level.
___ I can tell about what early Precambrian organisms were like.	___ I can tell about how much energy is available at each level of an energy pyramid.			___ I can explain what pH tells you about a solution.	___ I can explain that the same experiment must have comparable results.
___ I can tell about the major events in the Paleozoic Era.	___ I can name and tell about the process involved in the water cycle.				___ I can explain that new scientific ideas can emerge from unexpected findings.
___ I can tell about the major events in the Mesozoic Era.	___ I can explain how carbon and oxygen are recycled in an ecosystem.				
___ I can tell about the major events in the Cenozoic Era.	___ I can define and tell about the nitrogen cycle.				
___ I can explain how geologists learn about Earth's inner structures.	___ I can explain how the movement of the continents has affected the distribution of species.				
___ I can tell about the characteristics of Earth's crust, mantle, and core.	___ I can name three ways that organism dispersal occurs.				
___ I can explain how heat is transferred.	___ I can name and tell about factors that can limit the dispersal of a species.				
___ I can tell about what causes convection currents.	___ I can name the six major biomes found on Earth.				

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___ I can tell about convection currents in Earth's mantle.	___ I can name and tell about the factors that determine the type of biome found in an area.				
___ I can explain Alfred Wegener's hypothesis about the continents.	___ I can name and tell about the two major types of aquatic ecosystems.				
___ I can list the evidence used by Wegener to support his hypothesis.	___ I can tell about how organisms are adapted to each of the aquatic habitats.				
___ I can explain why other scientists of Wegener's day rejected his hypothesis.	___ I can tell about the general categories of environmental issues.				
___ I can list the evidence for sea-floor spreading.	___ I can tell about how decisions makers balance opposing needs and concerns.				
___ I can explain the process of sea-floor spreading.	___ I can tell about how forests can be managed as renewable resources.				
___ I can tell about the process of subduction.	___ I can explain the value of biodiversity.				
___ I can explain the theory of plate tectonics.	___ I can find factors that affect biodiversity.				
___ I can tell about the three types of plate boundaries.	___ I can name some human activities that threaten biodiversity.				
___ I can explain how stress in the Earth's crust changes the Earth's surface.	___ I can list some ways to protect biodiversity.				
___ I can tell about where faults are usually found and why they form.	___ I can find reasons why medical researchers want to protect biodiversity.				
___ I can find the land features that result from plate movements.	___ I can explain why many rainforest plants are sources of medicines.				

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___ I can tell about how the energy of an earthquake travels through the Earth.	___ I can tell about how people use land.				
___ I can tell about the scales used to measure the strength of an earthquake.	___ I can tell about the structure of fertile soil.				
___ I can explain how scientists locate the epicenter of an earthquake.	___ I can find problems that occur when soil is not properly managed.				
___ I can explain how a seismograph works.	___ I can name three methods of solid waste disposal.				
___ I can tell about how geologists monitor faults.	___ I can find ways people can help control the solid waste problem.				
___ I can explain how seismographic data is useful.	___ I can explain how hazardous wastes can be safely disposed of.				
___ I can tell about the kinds of damage an earthquake can cause.	___ I can explain why fresh water is a limited resource.				
___ I can give suggestions to increase earthquake safety and reduce earthquake damage.	___ I can tell about the major sources of water pollution.				
___ I can show where Earth's volcanic regions are located and explain why they are found there.	___ I can tell about how water pollution can be reduced.				
___ I can explain how hot spot volcanoes form.	___ I can tell about the causes of smog and acid rain.				
___ I can tell about some physical and chemical properties of matter.	___ I can tell about the causes of indoor air pollution.				
___ I can explain why some liquids flow more easily than others.	___ I can explain the key to reducing air pollution.				

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___ I can explain what factors determine the viscosity of magma.	___ I can tell about how human activities have damaged the ozone layer.				
___ I can explain what happens when a volcano erupts.	___ I can pick out ways that human activities may be linked to global climate changes.				
___ I can tell about the two types of volcanic eruption.	___ I can explain how fuels provide energy.				
___ I can tell about a volcano's stages of activity.	___ I can name three major fossil fuels.				
___ I can list the landforms that lava and ash create.	___ I can explain why fossil fuels are considered nonrenewable resources.				
___ I can explain how the magma that hardens beneath Earth's surface creates landforms.	___ I can explain the forms of energy provided by the sun.				
___ I can find other distinct features that occur in volcanic areas.	___ I can tell about various renewable sources of energy.				
___ I can define a mineral.	___ I can tell about what happens during a nuclear fission reaction.				
___ I can explain how minerals are identified.	___ I can explain how a nuclear power plant produces electricity.				
___ I can explain how minerals form from magma and lava.	___ I can tell about what takes place in a nuclear fusion reaction.				
___ I can explain how minerals form from water solutions.	___ I can name ways to ensure that there will be enough energy for the future.				
___ I can tell about how minerals are used.	___ I can show ways individuals can conserve energy.				
___ I can explain how ores are processed to obtain metals.					

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___ I can list the characteristics used to identify rocks.					
___ I can pick out and describe the three major groups of rocks.					
___ I can find the characteristics used to classify igneous rocks.					
___ I can tell about ways in which igneous rocks are useful.					
___ I can tell about how sedimentary rocks form.					
___ I can list and describe the three major types of sedimentary rocks.					
___ I can explain how sedimentary rocks are useful.					
___ I can tell about the formation of coral reefs.					
___ I can explain how limestone deposits from coral reefs provide information about Earth's history.					
___ I can tell about the conditions under which metamorphic rocks form.					
___ I can tell about the ways in which geologists classify metamorphic rocks.					
___ I can explain how metamorphic rocks are used.					
___ I can tell about the rock cycle.					
___ I can explain the role of plate tectonics in the rock cycle.					