

21st CENTURY

1st Grade Science

CONTENT STANDARDS AND OBJECTIVES FOR WEST VIRGINIA SCHOOLS (2520.3)

The First Grade Science objectives build on the process skills and add data gathering and reporting. Through a spiraling, inquiry-based program of study, all students will demonstrate scientific literacy and the use of 21st century skills in the fields of biology, chemistry, physics, and earth and space sciences. The subject matter is delivered through a coordinated, integrated approach with an emphasis on the development of the major science themes of systems, changes, and models. Students will engage in active inquiries, investigations and hands-on activities for a minimum of 50% of the instructional time to develop conceptual understanding and research/laboratory skills. Safety instruction is integrated in all activities. First Grade Science continues the excitement of learning about the natural world and allows the beginning of experimentation and data collection to emphasize the tools of science and the properties of matter.

The West Virginia Standards for 21st Century Learning include the following components: 21st Century Content Standards and Objectives and 21st Century Learning Skills and Technology Tools.

All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and content standards and objectives.

First Grade

Grade 1	Science
Standard 1:	Nature of Science
SC.S.1.1	Students will <ul style="list-style-type: none">demonstrate an understanding of the history and nature of science as a human endeavor encompassing the contributions of diverse cultures, scientists, and careers.demonstrate the abilities and understanding necessary to do scientific inquiry.demonstrate the ability to think and act as scientists by engaging in active inquiries and investigations, while incorporating hands-on activities.

Performance Descriptors SC.PD.1.1				
Distinguished	Above Mastery	Mastery	Partial Mastery	Novice
First grade students at the distinguished level relate science discoveries to their world; use science content to explain environmental changes; use a variety of communication techniques to explain the reason for classifying.	First grade students at the above mastery level relate scientist's discoveries to their own lives; develop a hypothesis to explain environmental changes; use a variety of communication techniques to explain the reason for classifying; use oral communication to explain classification systems.	First grade students at the mastery level discuss scientists' lives and discoveries; question environmental changes; compare information by using a classification system; use a variety of communication techniques to safely collect and record information.	First grade students at the partial mastery level discuss scientists' lives; identify environmental changes; safely collect and record information.	First grade students at the novice level listen to a story about a scientist; observe environmental changes; sort objects.
Objectives	Students will			
SC.O.1.1.01	ask questions about themselves and their world.			
SC.O.1.1.02	discuss the lives and discoveries of scientists after listening to stories about their lives and discoveries.			
SC.O.1.1.03	demonstrate curiosity, initiative and creativity by questioning observations of changes in the environment (e.g., life cycles, motion of celestial objects, or sun and shadow).			
SC.O.1.1.04	use scientific instruments and everyday materials to investigate the natural world (e.g., hand lens, balance, magnets, thermometer, seeds, or rocks).			
SC.O.1.1.05	use safe and proper techniques for handling, manipulating and caring for science materials (e.g., follow safety rules, maintain a clean work area, or treat living organisms humanely).			
SC.O.1.1.06	collect, record and compare information using a variety of classification systems (e.g., ordering, sorting, or sequencing) and using a variety of communication techniques (e.g., sketches, pictographs, or models).			

Grade 1	Science
Standard 2:	Content of Science
SC.S.1.2	<p>Students will</p> <ul style="list-style-type: none"> demonstrate knowledge, understanding and applications of scientific facts, concepts, principles, theories and models as delineated in the objectives. demonstrate an understanding of the interrelationships among physics, chemistry, biology and the earth and space sciences. apply knowledge, understanding and skills of science subject matter/concepts to daily life experiences.

Performance Descriptors SC.PD.1.2				
Distinguished	Above Mastery	Mastery	Partial Mastery	Novice
First grade students at the distinguished level categorize living and nonliving objects; construct diagrams to represent life cycles of various plants and animals; investigate properties of magnetism; explain how water changes state; compare and contrast the buoyancy of materials; plan a recycling project; discuss factors that affect change in an objects motion; explore pitch and volume of sound; predict weather changes and its effect on living things; compare and contrast changes in the earth and sky; draw a diagram representing land and water features; describe possible outcomes due to polluted air.	First grade students at the above mastery compare and contrast living and nonliving objects; sequence life cycles of living organisms; demonstrate properties of magnetism; predict the buoyancy of objects in water; identify materials that can be recycled; compare the force and motion of objects; compare and contrast sounds; compare changes in the weather to its effect on living things; identify and explain the changes in earth and sky; identify land and water features on a diagram; list air pollutants.	First grade students at the mastery level classify objects as living and non-living; describe needs, growth changes and life cycles in living organisms; classify objects as magnetic or nonmagnetic; recognize that water can change states and investigate buoyancy of objects in water; recognize that materials can be recycled; describe changes in an object's motion; demonstrate that sounds are produced by vibrations; record changes in weather and its effect on living things; discuss the importance of celestial objects and their movement; using models, compare land and water features; investigate properties of soil; and discuss the important uses of air.	First grade students at the partial mastery level identify living and nonliving objects; list changes in life cycles; explore and discuss magnetic properties of matter; name water in its three states; identify changes in an object's motion; identify that sound is produced by vibrations; identify changes in weather; identify the movement of the sun and moon; identify land and water features; name parts in soil; list uses of air.	First grade students at the novice level list living and nonliving objects; name basic needs of living things; recognize that some objects are magnetic; identify liquids and solids; name an object that vibrates; observe changes in weather; identify the sun, moon and stars; identify land and water features; observe soil; name an important use of air.
Objectives	Students will			
SC.O.1.2.01	classify objects as living or non-living.			
SC.O.1.2.02	identify that most living things need water, food, light and air.			
SC.O.1.2.03	describe changes in life cycle of living organisms.			
SC.O.1.2.04	identify the parts of growing plants as they develop.			
SC.O.1.2.05	depict movement of living things in air, water and on land. (e.g., birds flying, fish swimming, or worms burrowing in soil).			
SC.O.1.2.06	recognize that materials are composed of smaller parts that may be seen with a magnifier.			
SC.O.1.2.07	recognize that materials can be recycled and used again, sometimes in different forms.			
SC.O.1.2.08	recognize that water can change from one form to another and give examples of changes.			
SC.O.1.2.09	predict and investigate the buoyancy of objects in water.			
SC.O.1.2.10	classify objects as magnetic or non-magnetic.			
SC.O.1.2.11	observe and record shadows at different times of the day.			
SC.O.1.2.12	describe the changes in the motion of objects (e.g., slowing down, speeding up, or curving).			
SC.O.1.2.13	demonstrate that sounds are produced by vibrations.			
SC.O.1.2.14	observe, identify and record changes in weather and effects on living organisms.			
SC.O.1.2.15	recognize that the sun, moon, and stars appear to move.			
SC.O.1.2.16	observe and discuss the importance of objects in the day and night sky.			
SC.O.1.2.17	use a model to compare land and water features on the Earth.			
SC.O.1.2.18	identify important uses of air.			
SC.O.1.2.19	investigate and compare the properties of soil (e.g., sand, clay, or humus).			

Grade 1	Science			
Standard 3:	Application of Science			
S.C.S.1.3	Students will <ul style="list-style-type: none"> • identify how the parts of a system interact, • recognize and use models as representations of real things, • demonstrate the ability to distinguish between natural and man-made objects, • Listen and be tolerant of different viewpoints while working in collaborative groups, and • demonstrate the ability to evaluate the impact of different points of view on health, population, resources and environment practices. 			
Performance Descriptors SC.PD.1.3				
Distinguished	Above Mastery	Mastery	Partial Mastery	Novice
First grade students at the distinguished level describe and identify how parts of a system interact; construct and describe a model; compare and contrast natural and man-made objects; demonstrate tolerance of different points of view; engage and involve the community in conservation practices.	First grade students at the above mastery describe and identify how parts of a system interact; construct a model as representations of real things; classify man-made and natural items; demonstrate tolerance of different points of view; engage in conservation practices.	First grade students at the mastery level identify how parts of a system interact; recognize and use models as representations of real things; distinguish between natural and man-made objects; demonstrate tolerance of different points of view; engage in conservation practices.	First grade students at the partial mastery level list parts of a system; recognize and use models; name a natural and a man-made object; work in collaborative groups; list conservation practices.	First grade students at the novice level name a system; recognize models; name a natural or man-made object; name a conservation practice.
Objectives	Students will			
SC.O.1.3.01	identify that systems are made of parts that interact with one another.			
SC.O.1.3.02	use models as representations of real things.			
SC.O.1.3.03	distinguish between natural and man-made objects.			
SC.O.1.3.04	listen to and be tolerant of different viewpoints while working in collaborative groups.			
SC.O.1.3.05	develop respect and responsibility for the environment by engaging in conservation practices (e.g., recycling, or trash clean-up).			