Delta Science Modules

Grades K-6

Correlation with

New Mexico
Science Content Standards, Benchmarks, and Performance Standards

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May 2005

New Mexico
Science Content Standards, Benchmarks, and Performance Standards

Kindergarten

Strand I: Scientific Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.	1. Use observation and questioning skills in science inquiry (e.g., What happens when something is pushed or pulled?). 2. Ask and answer questions about surroundings and share findings with classmates. 3. Record observations and data with pictures, numbers, and symbols.	**All DSM modules have students observe, question, and record observations. See for example:** Observing an Aquarium Activity 3-6, Activity 8-10 - T.G. Pages 31-68; Pages 79-108	Finding the Moon Activity 6, 7, & 12 - T.G. Pages 55-70; Pages 99-104 From Seed to Plant Activity 5, 8, & 11 - T.G. Pages 45-52; Pages 67-72; Pages 85-90 Investigating Water Activity 5, 6, 7, 9, & 12 - T.G. Pages 41-62; Pages 73-80; Pages 95-100
Use scientific thinking and knowledge and communicate findings.	Communicate observations and answer questions about surroundings.	In all DSM II Modules recommended for Kindergarten, students interact with a partner or in groups of four and all activities have Activity Sheets on which students communicate explanations, descriptions, and responses to questions, or collect data about the investigation. For evidence, refer to the Activity Sheets at the end of the referenced Teacher Guides. From Seed to Plant	Observing an Aquarium Finding the Moon Sunshine and Shadows Investigating Water Properties
Use mathematical skills and vocabulary to analyze data, understand patterns	Observe and describe the relative sizes and characteristics of objects (e.g., bigger, brighter, louder, smellier).	Finding the Moon Activity 5 - T.G. Pages 47-54	From Seed to Plant Activity 7 - T.G. Pages 59-66 Investigating Water Activity 1 & 2 - T.G. Pages 13-26

and relationships, and communicate findings.			Observing an Aquarium Activity 6 - T.G. Pages 57-68 Properties Activity 3 & 6 - T.G. Pages 25-32; 47-52

Strand II: Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Recognize that matter has different forms and properties.	1. Observe that objects are made of different types of materials (e.g., metal, plastic, cloth, wood). 2. Observe that different materials have different properties (e.g., color, odor).	Properties Activity 11 & 12 - T.G. Pages 81-94 Properties This Module (13 activities) is a multi-sensory study of properties in which students describe, sort, and classify objects (solids) by size, color, shape, texture, weight, buoyancy, and magnetism. They also investigate the properties of liquids and gases. T.G. Pages 13-11; DSM III Science Reader pgs. 3-13	
Know that energy is needed to get things done and that energy has different forms.	1. Observe how energy does things (e.g., batteries, the sun, wind, electricity).	From Seed to Plant Activity 11 - T.G. Pages 85-90; DSM III Science Reader pgs. 8 & 12	Sunshine and Shadows DSM III Science Reader pg. 2
Identify forces and describe the motion of objects.	1. Observe that things move in many different ways (e.g., straight line, vibration, circular). 2. Know that the position and motion of an object (direction or speed) are changed by pushing or pulling it.	Sunshine and Shadows Activity 1, 4, 5, 6 & 10 - T.G. Pages 13-18; 33-56; 77-82; DSM III Science Reader pgs. 3, 8-9, & 14 Properties Activity 11 - T.G. Pages 81-86	Investigating Water Activity 3, T.G. Pages 27-34 Observing an Aquarium Activity 8 & 9 - T.G. Pages 79-96

Strand II: Content of Science

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Benchmark	***Performance Standards***	***Publisher Citation***	
Know that living things have diverse forms, structures, functions, and habitats.	1. Identify major structures of common living organisms (e.g., stems, leaves, and roots of plants; arms, wings, and legs of animals). 2. Observe that differences exist among individual living organisms (e.g., plants, animals) of the same kind.	From Seed to Plant Activity 3, 4, 5, 9, 10, 12 & 13 - T.G. Pages 33-52; 73-84; DSM III Science Reader pgs. 2-11; 14-15 Observing an Aquarium Activity 8, 9, & 10 - T.G. Pages 79-108; DSM III Science Reader pgs. 4-5; 10-11	Observing an Aquarium Activity 3, 4, 5, & 6 - T.G. Pages 31-68; DSM III Science Reader pgs. 6-9 From Seed to Plant Activity 1, 2, 4, 7, & 12, - T.G. Pages 15-20; 21-32; 39-44; 59-66; 91-96; DSM III Science Reader pgs. 2, 14 & 15
Know that living things have similarities and differences and that living things change over time.	1. Observe and describe similarities and differences in the appearance and behavior of living organisms (e.g., plants, animals). 2. Observe that living organisms (e.g., plants, animals) closely resemble their parents.	Observing an Aquarium Activity 3, 6, 8, 9, & 10 - T.G. Pages 21-32; 57-68; 79-108; DSM III Science Reader pgs. 4-5; 10-11 Observing an Aquarium Activity 10 - T.G. Pages 97-108; DSM III Science Reader pgs. 10 –11	From Seed to Plant Activity 1, 2, 4, 7, & 12 - T.G. Pages 15-20; 21-32; 39-44; 59-66; 91-96; DSM III Science Reader pgs. 2, 14 & 15 From Seed to Plant Activity 13 - T.G. Pages 97-104; DSM III Science Reader pgs. 10 –11
Know the parts of the human body and their functions.	1. Use the senses (e.g., sight, hearing, smell, taste, touch) to observe surroundings, and describe the observations. 2. Identify the parts of the human body (e.g., legs, arms, head, hands) and the functions of these parts.	Properties Activity 1, 2, 5, 7, 8 & 9 - T.G. Pages 13-24; 40-46; 53-74; DSM III Science Reader pgs. 3-4	Investigating Water Activity 1 & 6 - T.G. Pages 13-20; 47-54

Strand II: Content of Science

Standard III (Earth and Space Science): Understand the structure of the Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Benchmark	***Performance Standards***	***Publisher Citation***	
Know the structure of the solar system and the objects in the universe.	1. Observe that there are many objects in the night sky and that some are brighter than others. 2. Describe the location and movements of objects in the sky (e.g., stars, sun, moon).	Finding the Moon Activity 1, 3 & 4 - T.G. Pages 13-20; 29-46; Delta III Science Reader pgs. 2-10 Sunshine and Shadows Activity 1, 4, & 6 - T.G. Pages 13-18; 33-42; 49-56; DSM III Science Reader pgs. 8-9	Finding the Moon Activity 3 - T.G. Pages 29-38
Know the structure and formation of Earth and its atmosphere and the processes that shape them.	1. Observe that changes in weather occur from day to day and season to season. 2. Observe that the sun warms the land and water and they warm the air.	Sunshine and Shadows - DSM III Science Reader pgs. 12-13 Sunshine and Shadows - DSM III Science Reader pgs. 2-3	

Strand III: Science and Society

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Describe how science influences decisions made by individuals and societies.	1. Recognize that germs exist and may cause disease. 2. Describe how science helps provide products we use every day (e.g., gasoline for cars, electricity for lights, refrigerators, TVs, gas or electricity for heating and cooking).	Observing an Aquarium Activity 11 - T.G. Pages 106-116 "Connections" Science Extension and Science, Technology and Society	Investigating Water Activity 12 - T.G. Pages 95-100

First Grade

Strand I: Scientific Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.	1. Make observations, develop simple questions, and make comparisons of familiar situations (e.g., What does the seed look like when it starts to grow?).	All DSM modules have students conduct scientific investigations and students must identify questions and are guided to "discover" the answers or operationally define a relationship. Some Grades K-1 examples include: From Seed to Plant Activity 1, 3, 6, 9 & 11 - T.G. Pages 15-20; 33-38; 53-58; 73-78; 85-90	Finding the Moon Activity 1, 3, 4, & 5 - T.G. Pages 13-20; & 39-54 Observing An Aquarium Activity 4, 5, 6, 9 & 10 - T.G. Pages 39-68; 89-108 Investigating Water Activity 2, 3, 4, 8, 9, 10 & 11 - T.G. Pages 21-40; 73-94
	2. Describe relationships between objects (e.g., above, next to, below) and predict the results of changing the relationships (e.g., When that block moves, what will happen to the one next to it?).	From Seed to Plant Activity 6-8 - T.G. Pages 53-72	Investigating Water Activity 3, 4, 5, 8, & 10 - T.G. Pages 27-46; 63-72; 81-88 Observing an Aquarium Activity 8 & 9 - T.G. Pages 79-96 Finding the Moon Activity 3, 4, & 9 - T.G. Pages 29-38; 39-46; & 77-84 Sunshine and Shadows Activity 4, 6, 8, & 9 - T.G. Pages 77-84; 49-56; 67-76
Use scientific thinking and knowledge and communicate findings.	Know that simple investigations do not always turn out as planned.	Finding the Moon Activity 5 - T.G. Pages 47-54	Investigating Water Activity 5, 6, 7, 9 & 10 - T.G. Pages 41-62; 73-88 From Seed to Plant Activity 9 & 12 - T.G. Pages 73-78; 91-96 Properties Activity 6, 10 & 11 - T.G. Pages 47-52; 75-80; 81-86 Sunshine and Shadows Activity 3, 7, & 10 - T.G. Pages 81-86; 57-66; 77-82

Use mathematical skills and vocabulary to analyze data, understand patterns and relationships, and communicate findings.	Use numbers and mathematical language (e.g., "addition" instead of "add to," "subtraction" instead of "take away") to describe phenomena	In science quantative data collection is learned and used. However, evidence of this number concept would be better addressed in a mathematics program.	In science quantative data collection is learned and used. However, evidence of this number concept would be better addressed in a mathematics program.

Strand II: Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Benchmark	***Performance Standards***	***Publisher Citation***	
Recognize that matter has different forms and properties.	1. Observe that the three states of matter (i.e., solids, liquids, and gases) have different properties (e.g., water can be liquid, ice, or steam). 2. Describe simple properties of matter (e.g., hardness, flexibility, transparency).	Properties Activity 7, 8 & 9 - T.G. Pages 53-74; DSM III Science Reader pgs. 5, 9 – 13 & 15 Properties Activity 2, 3, 4, 5, 6, 12 & 13 - T.G. Pages 19-52; 87-100	
Know that energy is needed to get things done and that energy has different forms.	1. Observe and describe how energy produces changes (e.g., heat melts ice, gas makes car go uphill, electricity makes TV work).	Investigating Water Activity 9 & 10 - T.G. Pages 73-88; DSM III Science Reader pgs. 4-10	From Seed to Plant Activity 11 - T.G. Pages 85-90; DSM III Science Reader pgs. 8 & 12 Properties - DSM III Science Reader pg. 15
Identify forces and describe the motion of objects.	1. Describe ways to make things move, what causes them to stop, and what causes a change of speed, or change of direction. 2. Observe that gravity makes things fall to the ground unless something holds them up.	Force and Motion (Recommended for Grades 2-3) Activity 1, 2 & 4 - T.G. Pages 13-30; 41-48; DSM III Science Reader pgs. 2-4; Force and Motion (Recommended for Grades 2-3) - Delta III Science Reader pg. 2	

Strand II: Content of Science

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Benchmark	***Performance Standards***	***Publisher Citation***
Know that living things have diverse forms, structures, functions and habits.	1. Know that living organisms (e.g., plants, animals) have needs (e.g., water, air, food, sunlight). 2. Know that living organisms (e.g., plants, animals) inhabit various environments and have various external features to help them satisfy their needs (e.g., leaves, legs, claws).	This standard is repeated from above.
Know that living things have similarities and differences and that living things change over time.	1. Describe the differences and similarities among living organisms (e.g., plants, animals). 2. Observe that living organisms (e.g., plants, animals) have predictable but varied life cycles.	This standard is repeated from above.

Strand II: Content of Science

Standard III (Earth and Space Science): Understand the structure of the Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems

Benchmark	***Performance Standards***	***Publisher Citation***	
Know the structure of the solar system and the objects in the universe.	1. Observe the changes that occur in the sky as day changes into night and night into day.	<u>Finding the Moon</u> Activity 3 - T.G. Pages 29-38	
	2. Describe the basic patterns of objects as they move through the sky: • sun appears in the day • moon appears at night but can sometimes be seen during the day • sun and moon appear to move across the sky • moon appears to change shape over a month.	<u>Sunshine and Shadows</u> Activity 1, 4, 5, 6 & 10 - T.G. Pages 13-18; 33-56; 77-82; DSM III Science Reader pgs. 3, 8-9, & 14	<u>Finding the Moon</u> Activity 3, 4, 9 & 10 - T.G. Pages 29-46; 77-92; DSM III Science Reader pgs. 6-10
	3. Recognize that the sun, moon, and stars all appear to move slowly across the sky.	<u>Finding the Moon</u> Activity 3 - T.G. Pages 29-38	
Know the structure and formation of	1. Know that simple tools can be used to measure weather conditions (e.g.,	<u>Weather Watching</u> (Recommended for Grades 2-3)	

Earth and its atmosphere and the processes that shape them.	thermometer, wind sock, hand held anemometer, rain gauge) and that measurements can be recorded from day to day and across seasons. 2. Know that there are different climates (e.g., desert, arctic, rainforest).	Activity 2, 3, 4, 5 & 7 – T.G. Pages 21-50; 61-68; DSM III Science Reader pgs. 6-7	

Strand III: Science and Society

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark	***Performance Standards***	***Publisher Citation***
Describe how science influences decisions made by individuals and societies.	1. Know that germs can be transmitted by touching, breathing, and coughing, and that washing hands helps prevent the spread of germs. 2. Describe how science has assisted in creating tools (e.g., plows, knives, telephones, cell phones, computers) to make life easier and more efficient. 3. Describe how tools and machines can be helpful, harmful, or both (e.g., bicycles, cars, scissors, stoves). 4. Know that men and women of all ethnic and social backgrounds practice science and technology.	In the DSM Teacher Guides teachers are reminded to have children wash their hands after handling organisms and materials. Communicable diseases is best addressed in a good health curriculum Investigating Water Activity 12 - T.G. Pages 95-100 Force and Motion (Recommended for Grades 2-3) Activity 12 - T.G. Pages 111-118; DSM III Science Reader pgs. 6-9, 12 & 14 Sunshine and Shadows - DSM III Science Reader pgs. 12 Finding the Moon - T.G. Pages 99-104; “Connections” Science and Careers

Second Grade

Strand I: Scientific Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Benchmark	*Performance Standards*	*Publisher Citation*	
		Introduced	***Practiced***
Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.	1. Conduct simple investigations (e.g., measure the sizes of same kind of plants that are grown in sunlight or shade).	All DSM modules have students conduct scientific investigations and students must identify questions and are guided to "discover" the answers or operationally define a relationship. Some examples include: Classroom Plants Activity 6 & 11 - T.G. Pages 43-52; 79-86	Force and Motion Activity 4 & 7 - T.G. Pages 41-48; 65-72 Plant and Animal Population Activity 1 - T.G. Pages 7-14 Sink or Float? Activity 1 & 8 - T.G. Pages 7-14; 61-68 Soil Science Activity 2 & 5 - T.G. Pages 21-28; 45-50
	2. Use tools to provide information not directly available through only the senses (e.g., magnifiers, rulers, thermometers).	Classroom Plants Activity 5 - T.G. Pages 37-42	Plant and Animal Populations Activity 9 - T.G. Pages 67-74 Sink or Float? Activity 9, 10, 11 & 12 - T.G. Pages 69-98 Soil Science Activity 12 - T.G. Pages 107-114 States of Matter Activity 5 - T.G. Pages 41-50 Force and Motion Activity 1, 3, 6, 7, 8, & 11 - T.G. Pages 13-22; 31-40; 67-82; 101-110
	3. Make predictions based on observed patterns as opposed to random guessing.	Plant and Animal Populations Activity 10 & 11 - T.G. Pages 75-90	Soil Science Activity 3 - T.G. Pages 29-36 States of Matter

	4. Follow simple instructions for a scientific investigation.	<u>Force and Motion</u> Activity 3, 4, 7, & 11 - T.G. Pages 31-40; 41-48; 65-72; 101-110	Activity 3 & 4 - T.G. Pages 27-40 <u>Weather Watching</u> Activity 6 - T.G. Pages 51-60 <u>Butterflies and Moths</u> Activity 3, 7 & 8 - T.G. Pages 31-38; 61-78 <u>Soil Science</u> Activity 2, 5, 11 & 12 - T.G. Pages 21-28; 45-50; 91-106 <u>Weather Watching</u> Activity 2, 4, 5 - T.G. Pages 21-28; 37-50
Use scientific thinking and knowledge and communicate findings.	1. Understand that in doing science it is often helpful to work with a team and share findings.	Delta Science Modules encourage and promote cooperative learning strategies. The quantity of materials included in each kit allows small groups of students (2 or 4) to investigate and record observations and report what he or she has learned. The interaction between team members is an integral part of each activity and the nature of the Activity Sheets promotes the collection and reporting of data by group or by individuals.	
	2. Make accurate observations and communicate findings about investigations.	Science Process Skills are defined as the skills used to take in information (through the senses) and processing the information using cognitive, language and mathematical skills. Evidence of the employment of the skills (e.g. observe and communicate) can be found in the DSM III Teacher Guides on pgs. X and 3 and in the Student Objectives of DSM II & III. The following are only a few of many references: <u>Plant and Animal Life Cycles</u> Activity 3, 4, 6, 7 & 9 - T.G. Pages 24-38; 47-62; 71-78	<u>Weather Watching</u> Activity 3 - T.G. Pages 29-36 <u>States of Matter</u> Activity 4 & 6 - T.G. Pages 35-40; Pages 51-56

			Classroom Plants Activity 2 & 4 - T.G. Pages 15-20; 29-36
Use mathematical skills and vocabulary to analyze data, understand patterns and relationships, and communicate findings.	1. Record observations on simple charts or diagrams. 2. Measure length, weight, and temperature with appropriate tools and express those measurements in accurate mathematical language.	Using a variety of methods to display data and present findings is a common practice for students using the DSM program. A Student Activity Worksheet on which data is reported accompanies every activity. Some examples include**:** Classroom Plants: - Activity 10, Activity Sheet 10, Parts A and B; & Activity 11, Activity Sheet 11, Parts A and B States of Matter: - Activity 6 & 7 – T.G. Pages 51-64	Weather Watching: - Activity 3, Activity Sheet 3, Parts A and B; Activity 11, Activity Sheet 11, Parts A and B Weather Watching: - Activity 2 & 3 – T. G. Pages 21-36

Strand II: Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Benchmark	***Performance Standards***	***Publisher Citation***
Recognize that matter has different forms and properties.	1. Observe that properties of substances can change when they are mixed, cooled, or heated (e.g., salt dissolves in water, ice melts). 2. Describe the changes that occur when substances are heated or cooled and change from one state of matter to another (i.e., solid, liquid, and gas).	States of Matter Activity 4, 5, 7, 8, 9, 10 & 11 - T.G. Pages 35-50; 57-98 States of Matter Activity 4, 5, 7, 8, 9, 10 & 11 – T.G. Pages 35-50; 57-98; Delta III Science Reader pgs. 7-10 Sink or Float? Activity 7, TG pgs 55-60 Weather Watching Activity 6 & &, TG pages 50-68 Delta III Science Reader pages 4-5
Know that energy is needed to get things done and that energy has different forms.	1. Describe how heat can be produced (e.g., burning, rubbing, mixing some substances). 2. Know that heat moves more rapidly in thermal conductors (e.g., metal pan) than in insulators (e.g., plastic handle). 3. Describe the usefulness of some forms of energy (e.g., electricity, sunlight, wind, sound) and how energy (e.g., heat, light,)	Force and Motion Activity 4 - T.G. Pages 41-49 States of Matter Activity 5, 6, & 7 - T.G. Pages 41-64; DSM III Science Reader pg. 9 Force and Motion - DSM III Science Reader pg. 14

	can affect common objects (e.g., sunlight warms dark objects, heat melts candles). 4. Observe that sound is made by vibrating objects and describe it by its pitch and loudness. 5. Recognize that moving objects carry energy.	Sound (Recommended for grades 3-4) Activity 1, 2, 3, 6,7, 8, & 11 - T.G. Pages 13-36; 51-72; 91-98; DSM III Science Reader pgs. 2-3; 6-7
Identify forces and describe the motion of objects.	1. Describe how the strength of a push or pull affects the change in an object's motion (e.g., how a big or small push affects how high a swing rises). 2. Observe that electrically charged materials and magnets attract and repel each other, and observe their effects on other kinds of materials.	Force and Motion Activity 1 & 2 - T.G. Pages DSM III Science Reader pgs. 2-3 Weather Watching - DSM III Science Reader pg. 13 Magnets (Recommended for Grades 3-4) Activity 2, 3, 4, 9 & 11 - T.G. Pages 19-34; 59-64; 71-76; DSM III Science Reader pgs. 2-6 & 10

Strand II: Content of Science

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Benchmark	***Performance Standards***	***Publisher Citation***
Know that living things have diverse forms, structures, functions, and habitats.	1. Observe that diversity exists among individuals within a population. 2. Observe and describe various shapes of fungi. 3. Know that bacteria and viruses are germs.	Butterflies and Moths Activity 1, 2, 4,5, 9 & 10 - T.G. 15-30; 39-52; 79-96; DSM III Science Reader pgs. 4-12 Plant & Animal Populations Activity 3, 4, 5 & 6 – TG pages 23-52
Know that living things have similarities and differences and that living things change over time.	1. Explain that stages of the life cycle are different for different animals (e.g., mouse, cat, horse, butterfly, frog). 2. Observe that many characteristics of the offspring of living organisms (e.g., plants or animals) are inherited from their parents.	Plant and Animal Populations Activity 5 & 7 - T.G. Pages 37-42; 43-60 Butterflies and Moths Activity 11 - T.G. Pages 97-104 DSM iii Science Reader pgs. 8-13 Butterflies and Moths Activity 5, 6, 9, & 11 - T.G. Pages 47-60; 79-88; 97-104 Plant and Animal Populations Activity 2, 4, 5, 6, & 11 - T.G. Pages 15-22; 29-

	3. Observe how the environment influences some characteristics of living things (e.g., amount of sunlight required for plant growth).	52; 83-90 Classroom Plants Activity 3, 4, & 5 - T.G. Pages 21-42
Know the parts of the human body and their functions.	1. Identify a variety of human organs (e.g., lungs, heart, stomach, brain). 2. Know that various nutrients are required for specific parts and functions of the body (e.g., milk for bones and teeth, protein for muscles, sugar for energy). 3. Identify the functions of human systems (e.g., respiratory, circulatory, digestive).	Using Your Senses Activity 1, 5, 9, & 10 - T.G. Pages 13-22; 45-52; 75-88; DSM III Science Reader pgs. 4-11

Strand II: Content of Science

Standard III (Earth and Space Science): Understand the structure of the Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Benchmark	***Performance Standards***	***Publisher Citation***
Know the structure of the solar system and the objects in the universe.	1. Observe that the phase of the moon appears a little different every day but looks the same again after about four weeks. 2. Observe that some objects in the night sky are brighter than others. 3. Know that the sun is a star.	Finding the Moon (Recommended for Grades K-1) Activity 4, 9 & 10 - T.G. Pages 39-46; 77-92 Solar System (Recommended for Grades 3-4) Activity 1, 2, & 11 - T.G. Pages 13-26; 93-100 Solar System (Recommended for Grades 3-4) Activity 1, 2, & 11 - T.G. Pages 13-26; 93-100
Know the structure and formation of Earth and its atmosphere and the processes that shape them.	1. Know that rocks have different shapes and sizes (e.g., boulders, pebbles, sand) and that smaller rocks result from the breaking and weathering of larger rocks. 2. Understand that rocks are made of materials with distinct properties. 3. Know that soil is made up of weathered rock and organic materials, and that soils differ in their capacity to support the growth of plants.	Earth Movements (Recommended for Grades 3-4) Activity 3 - T.G. Pages 29-38; DSM III Science Reader pgs. 15 Earth Movements (Recommended for Grades 3-4) Activity 3 - T.G. Pages 29-38; DSM III Science Reader pgs. 15 Soil Science Activity 1, 2,3, 4, & 8 - T.G. Pages 15-44; Pages 69-80; DSM III Science Reader pgs. 2-3, & 7-8

	4. Recognize the characteristics of the seasons.	Weather Watching Activity 1 - T.G. Pages 13-20; DSM III Science Reader pgs. 8-10

Strand III: Science and Society

Standard III: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark	***Performance Standards***	***Publisher Citation***	
Describe how science influences decisions made by individuals and societies.	1. Describe ways to prevent the spread of germs (e.g., soap, bleach, cooking). 2. Know that science has ways to help living things avoid sickness or recover from sickness (e.g., vaccinations, medicine) and adult supervision is needed to administer them. 3. Know that some materials are better than others for making particular things (e.g., paper, cardboard, plastic, metal, fiberglass, wood). 4. Understand that everybody can do science, invent things, and formulate ideas. 5. Know that science has discovered many things about objects, events, and nature and that there are many more questions to be answered.	Sink or Float? Activity 11 - T.G. Pages 83-90 Sink or Float? Activity 6 & 12 - T.G. Pages 47-54; 91-98 DSM modules provide the opportunity for teachers to address this standard.	Classroom Plants Activity 1 - T.G. Pages 7-14 States of Matter Activity 5 - T.G. Pages 41-50 Plant and Animal Populations Activity 9 - T.G. Pages 67-74

Third Grade

Strand I: Scientific Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.	1. Make new observations when discrepancies exist between two descriptions of the same object or phenomenon to improve accuracy. 2. Recognize the difference between data and opinion. 3. Use numerical data in describing and comparing objects, events, and measurements. 4. Collect data in an investigation and analyze those data. 5. Know that the same scientific laws govern investigations in different times and places (e.g., gravity, growing plants).	Sink or Float? Activity 2, 3, 6, 7, 8 & 12 - T.G. Pages 15-28; 47-68; 91-98 It is the goal of science instruction in Delta Science Module to collect data through actual interaction with materials, equipment, students and concepts and to use data to support evidence rather than opinion. These are just a few examples where this process is applied. Sound Activity 9, 10 - T.G. Pages 73-90 Force and Motion Activity 1, 4, & 9 - T.G. Pages 13-22; 41-48; 83-90 Sound Activity 3, 5, 7, 10 & 11 - T.G. Pages 29-36; 45-50; 83-98	Soil Science Activity 3, 4, 10 & 11 - T.G. Pages 21-36; 91-106 Using Your Senses Activity 2, 4, 7, & 12 - T.G. Pages 23-30; 37-44; 61-66; 97-104 Electrical Circuits Activity 3, 4, 8, & 9 - T.G. Pages 27-44; 63-76 Water Cycle Activity 10 - T.G. Pages 85-90 Solar System Activity 12 - T.G. Pages 101-110 Magnets Activity 1 - T.G. Pages 13-18 States of Matter Activity 1, 2, & 11 - T.G. Pages 13-26; 89-98 Weather Watching Activity 3, 5, 8 & 11 - T.G. Pages 89-98; 45-50; 69-76; 101-108 Weather Instruments Activity 1, 3, 4, 5, 6, 11 & 1 - T.G. Pages 13-22; 31-58; 89-102 Water Cycle Activity 4 & 5 - T.G. Pages 39-52 Food Chains and Webs Activity 7, 8 & 9 - T.G. Pages 59-80
Use scientific thinking and knowledge and	1. Use a variety of methods to present data and findings.	Using a variety of methods to display data and present findings is a common practice for students	Weather Watching: - Activity 3, Activity Sheet 3, Parts A and B; Activity 11, Activity Sheet 11, Parts A and B

communicate findings.		using the DSM II program. A Student Activity Worksheet on which data is reported accompanies every activity. Some examples include: Classroom Plants: - Activity 10, Activity Sheet 10, Parts A and B; & Activity 11, Activity Sheet 11, Parts A and B	Sound: - Activity 2, Activity Sheet 2; Activity 3, Activity Sheet 3; Activity 7, Activity Sheet 7; Activity 8, Activity Sheet 8; Activity 9, Activity Sheet 9; Activity 10, Activity Sheet 10 & Activity 11, Activity Sheet Parts A and B Weather Instruments: - Activity 3, Activity Sheet 3; Activity 7, Activity Sheet 7; Activity 9, Activity Sheet 9 Plant and Animal Life Cycles: - Activity 7, Activity Sheet 7; Activity 12, Activity Sheet 12, Parts A and B
	2. Understand that predictions are based on observations, measurements, and cause-and-effect relationships.	Plant and Animal Populations Activity 10 & 11 - T.G. Pages 75-90	Soil Science Activity 3 - T.G. Pages 29-36 States of Matter Activity 3 & 4 - T.G. Pages 27-40 Weather Watching Activity 6 - T.G. Pages 51-60 Water Cycle Activity 5 & 13 - T.G. Pages 45-52; 107-114

Strand II: Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Benchmark	***Performance Standards***	***Publisher Citation***	
Recognize that matter has different forms and properties.	1. Identify and compare properties of pure substances and mixtures (e.g., sugar, fruit juice). 2. Separate mixtures based on properties (e.g., by size or by substance; rocks and sand, iron filings and sand, salt and sand).	Soil Science Activity 1, 4 & 7 – T.G. Pages 15-20; 37-44; 59-68; DSM III Science Reader pgs. 7-8 Magnets Activity 5 - T.G. Pages 35-40; "Connections" Science Extension	States of Matter - DSM III Science Reader pg. 11 Sink or Float? Activity 7 - T.G. Pages 55-60
Know that energy is needed to get things done and that energy has different forms.	1. Understand that light is a form of energy and can travel through a vacuum. 2. Know that light travels in a straight line until it strikes an object and then it is reflected, refracted, or absorbed.		

	3. Measure energy and energy changes (e.g., temperature changes).	Weather Watching Activity 2 & 3 - T.G. Pages 21-36; DSM III Science Reader pgs.	Weather Instruments Activity 1 & 6 - T.G. Pages 13-22; 51-58; DSM III Science Reader pg. 3 States of Matter Activity 6 & 7 - T.G. Pages 51-64
	4. Construct charts or diagrams that relate variables associated with energy changes (e.g., melting of ice over time.)	States of Matter Activity 4, 5, 6, & 7 - T.G. Pages 35-64	Weather Watching Activity 2 & 3 - T.G. Pages 21-36 Weather Instruments Activity 1 & 6 - T.G. Pages 13-22; 51-58
Identify forces and describe the motion of objects.	1. Recognize that magnets can produce motion by attracting some materials (e.g., steel) and have no effect on others (e.g., plastics).	Magnets Activity 1 & 2 - T.G. Pages 13-24; DSM III Science Reader pgs. 2-3	
	2. Describe how magnets have poles (N and S) and that like poles repel each other while unlike poles attract.	Magnets Activity 1 & 2 - T.G. Pages 13-24; DSM III Science Reader pgs. 2-3	
	3. Observe that some forces produce motion without objects touching (e.g., magnetic force on nails).	Magnets Activity 2, 3, 4, 9 & 11 - T.G. Pages 19-34; 59-64; 71-76; DSM III Science Reader pgs. 2-3, 4-5	
	4. Describe motion on different time scales (e.g., the slow motion of a plant toward light, the fast motion of a tuning fork).	Earth Movements Activity 5, 9 & 11 - T.G. Pages 47-54; 79-86; 97-104; DSM III Science Reader pgs. 6-8	Sound Activity 2 & 3 - T.G. Pages 13-28; DSM III Science Reader pgs. 4-5

Strand II: Content of Science

Standard II (Life Science): Understand the properties, structure and processes of living things and the interdependence of living things and their environments.

Benchmark	***Performance Standards***	***Publisher Citation***	
Know that living things have diverse forms, structures, functions, and habitats.	1. Know that an adaptation in physical structure or behavior can improve an organism's chance for survival (e.g., horned toads, chameleons, cacti, mushrooms).	Food Chains and Webs Activity 5, 6, 7 & 8 - T.G. Pages 47-72; DSM III Science Reader pgs. 4-5	Butterflies and Moths Activity 3, 7 & 8 - T.G. Pages 31-38; 61-78; DSM III Science Reader pgs. 4-5 Classroom Plants Activity 4, 10, & 11 - T.G. Pages 29-36; 71-86 Plant and Animal Populations

	2. Observe that plants and animals have structures that serve different functions (e.g., shape of animals' teeth). 3. Classify common animals according to their observable characteristics (e.g., body coverings, structure). 4. Classify plants according to their characteristics (e.g., tree leaves, flowers, seeds).	Classroom Plants Activity 6, 7, 8 & 9 - T.G. Pages 43-70 Butterflies and Moths Activity 2, 5 & 12 - T.G. Pages 23-30; 47-52; 105-110; DSM III Science Reader pgs. 4-7 Classroom Plants Activity 1, 2, 9, 10 & 11 - T.G. Pages 7-20; 65-86	Activity 10 & 11 - T.G. Pages 75-90 Dinosaurs and Fossils Activity 6, 7, 8, 9, & 10 - T.G. Pages 47-82; DSM III Science Reader pgs. 6-11 Plant and Animal Population Activity 6 & 7 - T.G. Pages 43-60 Dinosaurs and Fossils Activity 8, 9 & 10 - T.G. Pages 61-82; DSM III Science Reader pgs.6-11 Food Chains and Webs Activity 4, 5 & 6 - T.G. Pages 39-58; DSM III Science Reader pgs. 4-5 Butterflies and Moths Activity 2, 5 & 12 - T.G. Pages 23-30; 47-52; 105-110 Plant and Animal Life Cycles Activity 8 & 11 - T.G. Pages 63-70; 85-90 Plant and Animal Populations Activity 10 & 11 - T.G. Pages 75-90 Food Chains and Webs Activity 4, 5 & 6 - T.G. Pages 39-58; DSM III Science Reader pgs. 4-6
Know that living things have similarities and differences and that living things change over time.	1. Identify how living things cause changes to the environments in which they live, and that some of these changes are detrimental to the organism and some are beneficial. 2. Know that some kinds of organisms that once lived on Earth have become extinct (e.g., dinosaurs) and that others resemble those that are alive today (e.g., alligators, sharks).	Food Chains and Webs Activity 7, 8, & 9 - T.G. Pages 59-80; DSM III Science Reader pgs. 10, 12 & 14 Dinosaurs and Fossils Activity 1,8 & 10 - T.G. Pages 13-20; 61-66; 75-82; DSM III Science Reader pgs. 2-3, 6-11 & 12	Soil Science Activity 9, 10 & 11 - T.G. Pages 81-106;DSM III Science Reader pgs. 10-11; 14-15
Know the parts of the human body and their functions.	1. Know that bacteria and viruses are germs that affect the human body. 2. Describe the nutrients needed by the		

	human body.		

Strand II: Content of Science

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Benchmark	***Performance Standards***	***Publisher Citation***	
Know the structure of the solar system and the objects in the universe.	1. Describe the objects in the solar system (e.g., sun, Earth and other planets, moon) and their features (e.g., size, temperature).	Solar System Activity 1 & 6 - T.G. Pages 13-20; 51-58; DSM III Science Reader pgs. 2-13	
	2. Describe the relationships among the objects in the solar system (e.g., relative distances, orbital motions).	Solar System Activity 2, 3, 4, 7 & 8 - T.G. Pages 21-42; 59-72; DSM III Science Reader pgs. 2-12	
	3. Observe that the pattern of stars stays the same as they appear to move across the sky nightly.	Solar System Activity 12 - T.G. Pages 101-110	
	4. Observe that different constellations can be seen in different seasons.	Solar System Activity 12 - T.G. Pages 101-110	
	5. Know that telescopes enhance the appearance of some distant objects in the sky (e.g., the moon, planets).	Solar System - DSM III Science Reader pg. 15	
Know the structure and formation of Earth and its atmosphere and the processes that shape them.	1. Know that Earth's features are constantly changed by a combination of slow and rapid processes that include the action of volcanoes, earthquakes, mountain building, biological changes, erosion, and weathering.	Earth Movements Activity 5, 6, 7, 8, 9, 10 & 11 - T.G. Pages 47-104; DSM III Science Reader pgs. 6-13	Soil Science Activity 5, 6 & 12 - T.G. Pages 45-58; 107-114; DSM III Science Reader pgs. 4-6, & 9
	2. Know that fossils are evidence of earlier life and provide data about plants and animals that lived long ago.	Dinosaurs and Fossils Activity 2 - T.G. Pages 21-28; DSM III Science Reader pgs. 4-5, 13-15	Earth Movements Activity 3 - T.G. Pages 29-38; DSM III Science Reader pg. 6
	3. Know that air takes up space, is colorless, tasteless, and odorless, and exerts a force.	Weather Instruments Activity 2 - T.G. Pages 23-30; DSM III Science Reader pg. 4	

	4. Identify how water exists in the air in different forms (e.g., in clouds and fog as tiny droplets; in rain, snow, and hail) and changes from one form to another through various processes (e.g., freezing/condensation, precipitation, evaporation).	Water Cycle Activity 4, 5, 6, 7, 8, 9, 12, & 13 - T.G. Pages 45-84; 99-114	Weather Watching Activity 6 & 7 - T.G. Pages 51-68; DSM III Science Reader pgs. 4-5 Weather Instruments Activity 7, 8, 9 & 11 - T.G. Pages 59-80; 89-96; DSM III Science Reader pgs. 2, 6-8 & 13

Strand III: Science and Society

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark	***Performance Standards***	***Publisher Citation***	
Describe how science influences decisions made by individuals and societies.	1. Describe how food packaging (e.g., airtight containers, date) and preparation (heating, cooling, salting, smoking, drying) extend food life and the safety of foods (e.g., elimination of bacteria). 2. Know that science produces information for the manufacture and recycling of materials (e.g., materials that can be recycled [aluminum, paper, plastic] and others that cannot [gasoline]). 3. Know that naturally occurring materials (e.g., wood, clay, cotton, animal skins) may be processed or combined with other materials to change their properties. 4. Know that using poisons can reduce the damage to crops caused by rodents, weeds, and insects, but their use may harm other plants, animals, or the environment.	Magnets Activity 9 - T.G. Pages 59-64 Soil Science Activity 11 - T.G. Pages 99-106	Electrical Circuits Activity 10 & 11 - T.G. Pages 77-88 Food Chains and Webs - DSM III Science Reader pg. 12

Fourth Grade

Strand I: Scientific Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Use scientific methods to observe, collect, record, analyze, predict, interpret, and determine reasonableness of data.	1. Use instruments to perform investigations (e.g., timers, balances) and communicate findings. 2. Differentiate observation from interpretation and understand that a scientific explanation comes in part from what is observed and in part from how the observation is interpreted. 3. Conduct multiple trials to test a prediction, draw logical conclusions, and construct and interpret graphs from measurements. 4. Collect data in an investigation using multiple techniques, including control groups, and analyze those data to determine what other investigations could be conducted to validate findings.	Hands-on Science" is the nature of Delta Science Modules thus, the success of the lessons is dependent on developmentally-appropriate observations and use of data-gathering tools to provide evidence of scientific phenomena. Examples of how these are used can be found in the following references: <u>Weather Instruments</u> Activity 1, 2, 3, 4, 5, 6, 8 & 11 - T.G. Pages 13-58; 67-74; 89-96; DSM III Science Reader pgs. 3-9, 12-14 <u>Food Chains and Webs</u> Activity 8, 9, & 12 - T.G. Pages 67-80; 97-102 It is intended for students to complete activity sheets (for data collection) individually and discussed collectively. This grants opportunities to achieve multiple trials and discuss differences in data among students or student	<u>Dinosaurs and Fossils</u> Activity 3, & 4 - T.G. Pages 29-40; DSM III Science Reader pgs. 4-5 <u>Earth Movements</u> Activity 2, 6, 7 & 9 - T.G. Pages 21-28; 55-70; 79-86 <u>Solar System</u> Activity 3, 4, & 9 - .G. Pages 27-42; 73-82; DSM III Science Reader pg. 15 <u>Water Cycle</u> Activity 2, 3, 4, 6, 8 & 10 - T.G. Pages 23-44; 53-60; 69-76; 85-90 <u>Plant and Animal Life Cycles</u> Activity 7 & 12 - T.G. Pages 53-62; 91-98 <u>Dinosaurs and Fossils</u>

		groups using the same/similar Water Cycle Activity 12 - T.G. Pages 99-106	Activity 5,7,10, & 11 - T.G. Pages 41-46; 55-60; 75-90 Earth Movements Activity 3, 4, 7 & 9 - T.G. Pages 29-46; 63-70; 79-86 Electrical Circuits Activity 5 & 9 - T.G. Pages 45-50; 71-76
Use scientific thinking and knowledge and communicate findings.	1. Communicate ideas and present findings about scientific investigations that are open to critique from others. 2. Describe how scientific investigations may differ from one another (e.g., observations of nature, measurements of things changing over time). 3. Understand how data are used to explain how a simple system functions (e.g., a thermometer to measure heat loss as water cools).	Delta Science Modules encourage and promote cooperative learning strategies. The quantity of materials included in each kit allows small groups of students (2 or 4) to investigate and record observations and report what he or she has learned. The interaction between team members is an integral part of each activity and the nature of the Activity Sheets promotes the collection and reporting of data by group or by individuals. Earth Movements Activity 3, 4, 5, 6, & 7 – T.G. Pages 29-69 Earth Movements Activity 2, 3, 4 & 5 - T.G. Pages 21-54	Electrical Circuits Activity 1, 2, 3, 4, 9, & 11 - T.G. Pages 19-44; 71-76; 83-88 Food Chains and Webs Activity 7 & 9 - T.G. Pages 59-66; 73-80 Water Cycle Activity 11 & 12 - T.G. Pages 91-106
Use mathematical skills and vocabulary to analyze data, understand patterns and relationships, and communicate findings.	1. Conduct multiple trials using simple mathematical techniques to make and test predictions.	Delta Science Modules encourage and promote cooperative learning strategies. The quantity of materials included in each kit allows small groups of students (2 or 4) to investigate and record observations and report what he or she has learned. The Activity Sheets promotes the collection and reporting of data by group or by individuals often involves simple	Dinosaurs and Fossils Activity 6 & 7 - T.G. Pages 47-60 Food Chains and Webs Activity 8 - T.G. Pages 67-72 Plant and Animal Life Cycles Activity 7 & 9 - T.G. Pages 53-62; 71-78

	2. Use mathematical equations to formulate and justify predictions based on cause-and-effect relationships. 3. Identify simple mathematical relationships in a scientific investigation (e.g., the relationship of the density of materials that will or will not float in water to the density of water.)	calculations. The following references support this application. Weather Instruments Activity 6 & 12 - T.G. Pages 51-58; 97-102 Magnets Activity 4 & 10 - T.G. Pages 29-34; 65-70 Solar System Activity 4, 5, 7, & 8 - T.G. Pages 35-50; 59-72	Water Cycle Activity 4 - T.G. Pages 39-44 Food Chains and Webs Activity 3 - T.G. Pages 31-38 Dinosaurs and Fossils Activity 4, 5, 6, & 11 - T.G. Pages 35-54; 83-90

Strand II: Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Benchmark	***Performance Standards***	***Publisher Citation***	
Recognize that matter has different forms and properties.	1. Know that changes to matter may be chemical or physical and when two or more substances are combined, a new substance may be formed with properties that are different from those of the original substances (e.g., white glue and borax, cornstarch and water, vinegar and baking soda). 2. Know that materials are made up of small particles (atoms and molecules) that are too small to see with the naked eye. 3. Know that the mass of the same amount of material remains constant whether it is together, in parts, or in a different state.	Water Cycle Activity 4, 8, 12 & 13 - T.G. Pages 39-44; 69-76; 99-114; DSM III Science Reader pgs. 8-9 Electrical Circuits - Delta III Science Reader Pages 3-5	
Know that energy is needed to get things done and that energy has different forms.	1. Identify the characteristics of several different forms of energy and describe how energy can be converted from one form to another (e.g., light to heat, motion to heat, electricity to heat, light, or motion).	Electrical Circuits - Activity 1, 3, 4 & 8; Delta III Science Reader pgs. 2-3; 4-6, 11 & 14-15	

	2. Recognize that energy can be stored in many ways (e.g., potential energy in gravity or springs, chemical energy in batteries). 3. Describe how some waves move through materials (e.g., water, sound) and how others can move through a vacuum (e.g., x-ray, television, radio). 4. Demonstrate how electricity flows through a simple circuit (e.g., by constructing one).	Electrical Circuits Activity 1, 3 & 4 - T.G. Pages 13-20; 27-44 Sound Activity 2, 3, 4, 7, 10 & 11 - T.G. Pages 21-44; 59-66; 83-98; DSM III Science Reader pgs. 2-3; 5-8 Electrical Circuits Activity 1, 2, 3, 4, 5 & 12 - T.G. Pages 13-50; 89-94; DSM III Science Reader pgs. 4-7	Weather Instruments Activity 5 - T.G. Pages 43-50; "Connections" Science, Technology, and Society Earth Movements Activity 11 & 12 - T.G. Pages 97-110; Delta III Science Reader pgs. 9, 10 & 14
Identify forces and describe the motion of objects.	1. Know that energy can be carried from one place to another by waves (e.g., water waves, sound waves), by electric currents, and by moving objects. 2. Describe the motion of an object by measuring its change of position over a period of time. 3. Describe that gravity exerts more force on objects with greater mass (e.g., it takes more force to hold up a heavy object than a lighter one). 4. Describe how some forces act on contact and other forces act at a distance (e.g., a person pushing a rock versus gravity acting on a rock).	Sound Activity 2, 3 & 5 - T.G. Pages 21-36; 45-50;DSM III Science Reader pgs. 2-3, 5, 6-8 Weather Instruments Activity 5 - T.G. Pages 43-50; DSM III Science Reader pg. 5 Simple Machines (Recommended for Grades 5-6) Activity 1 - T.G. Pages 13-18;DSM III Science Reader pgs. 2-3 Magnets Activity 4, 5, & 6 - T.G. Pages 29-46;DSM III Science Reader pgs. 2-3	Electrical Circuits Activity 1, 3, 4, 5, 6 & 7 - T.G. Pages 13-20; 27-62; DSM III Science Reader pgs. 2-7 & 10

Strand II: Content of Science

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Know that living things have diverse	1. Explain that different living organisms have distinctive structures and body systems	Food Chains and Webs Activity 4, 5 & 6 - T.G. Pages 39-	Plant and Animal Life Cycles Activity 8 & 11 - T.G. Pages 63-70; 85-90

forms, structures, functions, and habitats.	that serve specific functions (e.g., walking, flying, swimming). 2. Know that humans and other living things have senses to help them detect stimuli, and those sensations (e.g., hunger) and stimuli (e.g., changes in the environment) influence the behavior of organisms. 3. Describe how roots are associated with the intake of water and soil nutrients and green leaves are associated with making food from sunlight (photosynthesis). 4. Describe the components of and relationships among organisms in a food chain (e.g., plants are the primary source of energy for living systems). 5. Describe how all living things are made up of smaller units that are called cells.	58; DSM III Science Reader pgs. 4-5 Food Chains and Webs Activity 4, 5, 6, 7 & 8 - T.G. Pages 39-72; DSM III Science Reader pgs. 4-5 Food Chains and Webs Activity 1, 2 & 3 T.G. Pages 15-38;DSM III Science Reader pgs. 6 & 9 Food Chains and Webs Activity 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12 - T.G. Pages 23-102; DSM III Science Reader pgs. 2-10, 14 & 15	Dinosaurs and Fossils Activity 8, 9 & 10 - T.G. Pages 61-82; DSM III Science Reader pgs.6-11
Know that living things have similarities and differences and that living things change over time.	1. Know that in any particular environment some kinds of plants and animals survive well, some survive less well, and others cannot survive at all. 2. Know that a change in physical structure or behavior can improve an organism's chance of survival (e.g., a chameleon changes color, a turtle pulls its head into its shell, a plant grows toward the light). 3. Describe how some living organisms have developed characteristics from generation to generation to improve chances of survival (e.g., spines on cacti, long beaks on hummingbirds, good eyesight on hawks).	Food Chains and Webs Activity 3, 5, 6, & 7 - T.G. Pages 31-38; Pages 47-66; DSM III Science Reader pgs. 2-3, 10 & 15 Food Chains and Webs Activity 7 - T.G. Pages 59-66; DSM III Science Reader pgs. 4 & 5 Food Chains and Webs Activity 7 - T.G. Pages 59-66; DSM III Science Reader pgs. 4 & 5	Dinosaurs and Fossils Activity 5 - T.G. Pages 41-46;DSM III Science Reader pgs. 12
Know the parts of the human body and their functions.	1. Know that the human body has many parts that interact to function as systems (e.g., skeletal, muscular) and describe the parts and their specific functions in selected systems (e.g., the nose, lungs, and diaphragm in the respiratory system). 2. Recognize that the human body is organized from cells, to tissues, to organs, to systems, to the organism.	You and Your Body (Recommended for Grades 5-6) Activity 1, 2, 4, 5, 6, 7 & 8 - T.G. Pages 13-26; 33-66;DSM III Science Reader pgs. 4-11 You and Your Body (Recommended for Grades 5-6) - DSM III Science Reader pgs. 2-3	

Strand II: Content of Science

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Benchmark	***Performance Standards***	***Publisher Citation***	
Know the structure of the solar system and the objects in the universe.	1. Understand that the number of stars visible through a telescope is much greater than the number visible to the naked eye. 2. Know that there are various types of telescopes that use different forms of light to observe distant objects in the sky. 3. Know that the pattern of stars (e.g., constellations) stays the same although they appear to move across the sky nightly due to Earth's rotation.	Solar System Activity 11 & 12 - Pages 93-110; DSM III Science Reader pg 15 Solar System Activity 11 - "Connections" Science Challenge & Science, Technology and Society; DSM III Science Reader pg. 15 Solar System Activity 12 - T.G. Pages 101-110	
Know the structure and formation of Earth and its atmosphere and the processes that shape them.	1. Know that the properties of rocks and minerals reflect the processes that shaped them (i.e., igneous, metamorphic, and sedimentary rocks). 2. Describe how weather patterns generally move from west to east in the United States. 3. Know that local weather information describes patterns of change over a period of time (e.g., temperature, precipitation symbols, cloud conditions, wind speed/direction).	Earth Movements Activity 3 - T.G. Pages 29-38; DSM III Science Reader pg. 15 Weather Forecasting (Recommended for Grades 5-6) Activity 6, 7, & 8 - T.G. Pages 49-68; DSM III Science Reader pgs. 6-7 Weather Instruments Activity 12 - T.G. Pages 51-66;DSM III Science Reader pgs. 12 & 13	

Strand III: Science and Society

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Describe how science influences decisions made by individuals and societies.	1. Know that science has identified substances called pollutants that get into the environment and can be harmful to living things. 2. Know that, through science and technology, a wide variety of materials not appearing in nature have become available (e.g., steel, plastic, nylon, fiber optics). 3. Know that science has created ways to store and retrieve information (e.g., paper and ink, printing press, computers, CD ROMs) but that these are not perfect (e.g., faulty programming, defective hardware). 4. Know that both men and women of all races and social backgrounds choose science as a career.	Pollution (Recommended for Grades 5-6) Activity 4, 5, 6, 7, 9 & 10 Pollution (Recommended for Grades 5-6) Activity 1 - T.G. Pages 13-18 In the Delta III Science Reader feature People in Science contains historical biographies of famous scientists and inventors. It also focuses on careers in science. Guidance for reading, discussions and writing opportunities can be found in the Delta Science Reader Section of the Teacher Guide. See the following specific examples: Solar System Activity 3 - T.G. Pages 27-34; "Connections" Science and Careers	Weather Instruments - Delta III Science Reader pgs. 12-13 Electrical Circuits - Delta III Science Reader pgs. 13 (electrician)

Fifth Grade

Strand I: Scientific Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.	1. Plan and conduct investigations, including formulating testable questions, making systematic observations, developing logical conclusions, and communicating findings. 2. Use appropriate technologies (e.g., calculators, computers, balances, spring scales, microscopes) to perform scientific tests and to collect and display data. 3. Use graphic representations (e.g., charts, graphs, tables, labeled diagrams) to present data and produce explanations for investigations. 4. Describe how credible scientific investigations use reproducible elements including single variables, controls, and appropriate sample sizes to produce valid scientific results. 5. Communicate the steps and results of a scientific investigation.	Color and Light Activity 1, 6, 8, 9, & 12 - T.G. Pages 13-20; 53-60; 69-84; 101-108 Color and Light Activity 1 - T.G. Pages 13-18;Teacher Resources Pg. 138 In all DSM III's recommended for Grade 5 students are provided with Activity Sheets on which they collect and display data in the form of graphs and tables as responses to questions about the investigation. For evidence, refer to the Activity Sheets at the end of the referenced Teacher Manuals. Some specific references include: Electromagnetism Activity 9 & 11 - T.G. Pages 51-56; 65-70 Electromagnetism Activity 6 - T.G. Pages 7-10 You and Your Body Activity 3 & 5 – T.G. Pages 41-48	Electromagnetism Activity 1, 2, 5, & 10 - T.G. Pages 7-14; Pages 25-30; Pages 57-64 Erosion Activity 10 & 11 - T.G. Pages 67-80 Flight and Rocketry Activity 1, 3, 5, 6, 9, & 11 - T.G. Pages 13-22; 33-44; 55-64; 111-120 Oceans Activity 6, & 10 - T.G. Pages 65-74; 113-124 Rocks and Minerals Activity 6, & 10 - T.G. Pages 47-54; 77-84 Simple Machines Activity 4, 5, 6, & 9 - Pages 33-56; 71-76 Electromagnetism Activity 7, 8, 9, & 10 - T.G. Pages 37-64 Simple Machines Activity 1, 2, 3, 5, 7, 8 & 9 - T.G. Pages 13-32; 39-48; 57-76; Teacher Resources Pg. 119 Flight and Rocketry Activity 3 & 5 - T.G. Pages 45-64 Pollution Activity 7, 8 & 10 - T.G. Pages 53-64; 71-76 Rocks and Minerals Activity 4, 5 & 6 - T.G. Pages 35-54 Pollution Activity 10 – T.G. Pages 71-76 Erosion Activity 7 – T.G. Pages 59-66 Flight and Rocketry

			Activity 5 –T.G. pages 55-64
Understand the processes of scientific investigation and how scientific inquiry results in scientific knowledge.	1. Understand that different kinds of investigations are used to answer different kinds of questions (e.g., observations, data collection, controlled experiments). 2. Understand that scientific conclusions are subject to peer and public review.	The following references are examples of different kinds of investigations within the same module. Color and Light Activity 3 & 10 - T.G. Pages 29-36; 85-92 Pollution Activity 12 - T.G. Pages 83-88	Electromagnetism Activity 6 & 10 - T.G. Pages 31-36; 57-64
Use mathematical ideas, tools, and techniques to understand scientific knowledge.	1. Use appropriate units to make precise and varied measurements. 2. Use mathematical skills to analyze data. 3. Make predictions based on analyses of data, observations, and explanations. 4. Understand the attributes to be measured in a scientific investigation and describe the units, systems, and processes for making the measurement.	Appropriate metric measures are used throughout DSM to collect, record and report data. Some representative references include: Simple Machines Activity 1, 3, 4, 6, 8 & 11 - T.G. Pages 13-18; 25-38; 49-56; 65-70; 83-90 Simple Machines Activity 1, 3, 4, 6, 8 & 11 - T.G. Pages 13-18; 25-38; 49-56; 65-70; 83-90 Pollution Activity 10 - T.G. Pages 71-76 Simple Machines Activity 1 & 2 - T.G. Pages 13-24	Oceans: Activity 6, 7, & 8 - T.G. Pages 65-98 Weather Forecasting Activity 2, 3, 5, 6 & 8 - T.G. Pages 19-32; 41-54; 63-68 You and Your Body: Activity 1, 2 & 6 - T.G. Pages 13-26; 49-54 You and Your Body: Activity 1, 2 & 6 - T.G. Pages 13-26; 49-54 Weather Forecasting Activity 2, 3, 5, 6 & 8 - T.G. Pages 19-32; 41-54; 63-68 Weather Forecasting Activity 7, 8, & 10 - T.G. Pages 55-68; 75-80 Rocks and Minerals Activity 3, 4, 5, & 6 - T.G. Pages 29-54

Strand II: Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Benchmark	***Performance Standards***	***Publisher Citation***	
Know the forms and properties of matter and how matter interacts.	1. Describe properties (e.g., relative volume, ability to flow) of the three states of matter. 2. Describe how matter changes from one phase to another (e.g., condensation, evaporation). 3. Know that matter is made up of particles (atoms) that can combine to form molecules and that these particles are too small to see with the naked eye. 4. Know that the periodic table is a chart of the pure elements that make up all matter. 5. Describe the relative location and motion of the particles (atoms and molecules) in each state of matter. 6. Explain the relationship between temperature and the motion of particles in each state of matter.	Pollution Activity 5, 6, 7 & 9 - T.G. Pages 39-58, 65-70; DSM III Science Reader pgs. 9-12 Water Cycle (Recommended for Grade 4) Activity 4, 5, 6, 7, 8, 9, 12 & 13 - T.G. Pages 45-84; 99-114; DSM III Science Reader pgs. 7-12 Flight and Rocketry Activity 1 - T.G. Pages 13-22 Flight and Rocketry Activity 1 - T.G. Pages 13-22 Flight and Rocketry Activity 1 - T.G. Pages 13-22	Oceans Activity 1, 2, & 3 - T.G. Pages 13-42;DSM III Science Reader pg. 3 Erosion Activity 6 & 7 - T.G. Pages 41-54
Explain the physical processes involved in the transfer, change, and conservation of energy.	1. Know that heat is transferred from hotter to cooler materials or regions until both reach the same temperature. 2. Know that heat is often produced as a by-product when one form of energy is converted to another form (e.g., when machines or organisms convert stored energy into motion). 3. Know that there are different forms of energy. 4. Describe how energy can be stored and converted to a different form of energy (e.g., springs, gravity) and know that machines and living things convert stored energy to motion and heat.	States of Matter (Recommended for Grades 3-4) Activity 6 & 7 - T.G. Pages 51-64 Simple Machines Activity 3 - T.G. Pages 25-32 Simple Machines Activity 2 - T.G. Pages 19-24;DSM III Science Reader pgs. 2-3 Simple Machines Activity 2 - T.G. Pages 19-24;DSM III Science Reader pgs. 2-3	Flight and Rocketry Activity 3 & 12 - T.G. Pages 33-44; 121-130 Earth Movements Activity 4 - T.G. Pages 39-46 Electromagnetism Activity 5 & 6 – T.G. Pages 25-36 Electromagnetism 5 & 6 – T.G. – Pages 25-36
Describe and explain forces that	1. Understand how the rate of change of position is the velocity of an object in motion.	Flight and Rocketry Activity 9 - T.G. Pages 91-98	

produce motion in objects.	2. Recognize that acceleration is the change in velocity with time. 3. Identify forces in nature (e.g., gravity, magnetism, electricity, friction). 4. Understand that when a force (e.g., gravity, friction) acts on an object, the object speeds up, slows down, or goes in a different direction. 5. Identify simple machines and describe how they give advantage to users (e.g., levers, pulleys, wheels and axles, inclined planed, screws, wedges.)	Flight and Rocketry Activity 2 - T.G. Pages 23-32 Flight and Rocketry Activity 2 - T.G. Pages 23-32 Simple Machines Activity 2, 4, 5, 7, 8, 9, 10, 11 & 12 - T.G. Pages 19-24; 33-48; 57-96;DSM III Science Reader pgs. 4-10	

Strand II: Content of Science

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Benchmark	***Performance Standards***	***Publisher Citation***	
Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.	1. Identify the components of habitats and ecosystems (producers, consumers, decomposers, predators). 2. Understand how food webs depict relationships between different organisms. 3. Know that changes in the environment can have different effects on different organisms (e.g., some organisms move, some survive, some reproduce, some die). 4. Describe how human activity impacts the environment.	Oceans Activity 11 - T.G. Pages 125-134; DSM III Science Reader pgs. 12-13 Food Chains and Webs (Recommended for Grades 3-4) Activity 11 & 12 - T.G. Pages 89-102; DSM III Science Reader pgs. 7-8 Pollution Activity 5, 6, 7, 9 & 10 - T.G. Pages 39-58, 71-76 Pollution Activity 1, 4, 5, 6, 7, 9, 10, 11 & 12 - T.G. Pages 13-18, 31-58; 65-88	
Understand how traits are passed	1. Know that plants and animals have life cycles that include birth, growth and	Plant and Animal Life Cycles (Recommended for Grades 3-	

from one generation to the next and how species evolve.	development, reproduction, and death and that these cycles differ for different organisms. 2. Identify characteristics of an organism that are inherited from its parents (e.g., eye color in humans, flower color in plants) and other characteristics that are learned or result from interactions with the environment. 3. Understand that heredity is the process by which traits are passed from one generation to another.	4) Activity 2, 3, 5, 7, 9, 10, 11 & 12 - T.G. Pages 15-32; 39-46; 53-62; 71-98; DSM III Science Reader pgs. 2-13 <u>Plant and Animal Life Cycles</u> (Recommended for Grades 3-4) Activity 5 & 10 - T.G. Pages 39-46; 79-84; DSM III Science Reader pgs. 2 & 10	
Understand the structure of organisms and the function of cells in living systems.	1. Understand that all living organisms are composed of cells from one to many trillions, and that cells are usually only visible through a microscope. 2. Know that some organisms are made of a collection of similar cells that cooperate (e.g., algae) while other organisms are made of cells that are different in appearance and function (e.g., corn, birds). 3. Describe the relationships among cells, tissues, organs, organ systems, whole organisms, and ecosystems.	<u>You and Your Body</u> - DSM III Science Reader pgs. 2-3 <u>You and Your Body</u> Activity 1, 2, 4, 6 & 7 - Pages 13-26; 33-40; 49-60;DSM III Science Reader pgs. 2-4	

Strand II: Content of Science

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Benchmark	***Performance Standards***	***Publisher Citation***	
Describe how the concepts of energy, matter, and force can be used to explain the observed behavior of the solar system, the universe, and their structures.	1. Know that many objects in the universe are huge and are separated from one another by vast distances (e.g., many stars are larger than the sun but so distant that they look like points of light). 2. Understand that Earth is part of a larger solar system, which is part of an even larger galaxy (Milky Way), which is one of many galaxies.	<u>Solar System</u> (Recommended for Grades 3-4) Activity 1, 6, 8, 10 & 11 - T.G. Pages 13-20; 51-58; 65-72; 83-100; DSM III Science Reader pgs. 2, 4-13 <u>Solar System</u> (Recommended for Grades 3-4) Activity 1, 2 & 11 - T.G. Pages 13-26; 93-100	

	3. Know that there have been manned and unmanned journeys to space and to the moon.	Solar System (Recommended for Grades 3-4) Activity 1& 2 - T.G. Pages 13-20; "Connections" Science, Technology and Society; T.G. Pages 21-26; "Connections" Science, Technology and Society	
Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.	1. Understand that water and air relate to Earth's processes, including: • how the water cycle relates to weather • how clouds are made of tiny droplets of water, like fog or steam. 2. Know that air is a substance that surrounds Earth (atmosphere), takes up space, and moves, and those temperature fluctuations and other factors produce wind currents. 3. Know that most of Earth's surface is covered by water, that most of that water is salt water in oceans, and that fresh water is found in rivers, lakes, underground sources, and glaciers. 4. Recognize that the seasons are caused by Earth's motion around the sun and the tilt of Earth's axis of rotation.	Weather Forecasting Activity 3, 7, 9 & 10 - T.G. Pages 25-32; 55-62; 69-80; DSM III Science Reader pgs. 4-5, & 7 Weather Forecasting Activity 4 & 5 - T.G. Pages 33-48;DSM III Science Reader pgs. 2 & 4-6 Oceans Activity 1 - T.G. Pages 13-22; DSM III Science Reader pg. 2	

Strand III: Science and Society

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Explain how scientific discoveries and inventions have changed individuals and societies.	1. Describe the contributions of science to understanding local or current issues (e.g., watershed and community decisions regarding water use). 2. Describe how various technologies have affected the lives of individuals (e.g., transportation, entertainment, health).	Pollution Activity 5 - T.G. Pages 39-46, "Connections" Science and Social Studies; DSM III Science Reader pgs. 9-11, 12 & 14 Pollution Activity 4 - T.G. Pages 31-38; "Connections" Science,	

		Technology and Society; DSM III Science Reader pgs. 8 & 15	

Sixth Grade

Strand I: Scientific Thinking and Practice

Standard I: Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

Benchmark	***Performance Standards***	***Publisher Citation***	
		Introduced	***Practiced***
Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate findings.	1. Construct appropriate graphs from data and develop qualitative and quantitative statements about the relationships between variables being investigated.	In all DSM III's recommended for Grade 6 students are provided with Activity Sheets on which they collect and display data in the form of graphs and tables as responses to questions about the investigation. For evidence, refer to the Activity Sheets at the end of the referenced Teacher Manuals. Some specific references include: <u>Electromagnetism</u> Activity 9 & 11 - T.G. Pages 51-56; 65-70	
	2. Examine the reasonableness of data supporting a proposed scientific explanation.	The DSM II & III Teacher Guides guide teachers to collect class data which would help students analyze data to support an accurate scientific explanation. The following are just a few representations. <u>Pollution</u> Activity 10 & 12 - T.G. Pages 13-20; 89-94	<u>Weather Forecasting</u> Activity 11 – T.G. Pages 81-86
	3. Justify predictions and conclusions based on data.	<u>Color and Light</u> Activity 2, 9, & 13 - T.G. Pages 19-28; 77-84; 109-116	<u>Electromagnetism</u> Activity 1 & 2 - T.G. Pages 7-14 <u>Erosion</u> Activity 10 & 11 - T.G. Pages 67-80
Understand the processes of scientific investigation and how scientific inquiry	1. Understand that scientific knowledge is continually reviewed, critiqued, and revised as new data become available.	<u>Pollution</u> Activity 9 - "Connections" Science, Technology, and Society <u>Electromagnetism</u>	<u>Weather Forecasting</u> DSM III Science Reader pgs. 7, 11, & 14 <u>Flight and Rocketry</u>

how scientific inquiry results in scientific knowledge.	2. Understand that scientific investigations use common processes that include the collection of relevant data and observations, accurate measurements, the identification and control of variables, and logical reasoning to formulate hypotheses and explanations. 3. Understand that not all investigations result in defensible scientific explanations.	Activity 6 – T.G. Pages 43-48 Weather Forecasting Activity 11 - T.G. Pages 87-94	Activity 5 - - T.G. Pages 65-72
Use mathematical ideas, tools, and techniques to understand scientific knowledge.	1. Evaluate the usefulness and relevance of data to an investigation. 2. Use probabilities, patterns, and relationships to explain data and observations.	The DSM II & III Teacher Guides guide teachers to collect class data that would help students analyze data to asses its usefulness and relevance to support a scientific explanation. The following are just a few representations. Pollution Activity 10 & 12 - T.G. Pages 71-76; 83-88 Color and Light Activity 3, 8, 10 & 12 - T.G. Pages 29-36; 69-76; 85-92; 101-108	Weather Forecasting Activity 11 - T.G. Pages 81-86 Electromagnetism Activity 2 & 5 - T.G. Pages 11-14; 25-30 Erosion Activity 1 & 11 - T.G. Pages 7-14; 73-80 Simple Machines Activity 7 - T.G. Pages 57-64

Strand II: Content of Science

Standard I (Physical Science): Understand the structure and properties of matter, the characteristics of energy, and the interactions between matter and energy.

Benchmark	***Performance Standards***	***Publisher Citation***
Know the forms and properties of matter and how matter interacts.	1. Understand that substances have characteristic properties and identify the properties of various substances (e.g., density, boiling point, solubility, chemical reactivity). 2. Use properties to identify substances (e.g., for minerals: the hardness, streak, color, reactivity to acid, cleavage, fracture). 3. Know that there are about 100 known elements that combine to produce	Oceans Activity 2 & 3 - T.G. Pages 23-42 Rocks and Minerals Activity 3, 4, 5, 6, 7, & 10 - T.G. Pages 29-60; 77-84; DSM III Science Reader pgs. 2-6

	compounds in living organisms and nonliving substances. 4. Know the differences between chemical and physical properties and how these properties can influence the interactions of matter.	<u>Oceans</u> Activity 3 - T.G. Pages 31-42; DSM III Science Reader pgs. 3 <u>Rocks and Minerals</u> Activity 6 - T.G. Pages 47-54;DSM III Science Reader pgs. 3-6, & 11
Explain the physical processes involved in the transfer, change, and conservation of energy.	1. Identify various types of energy (e.g., heat, light, mechanical, electrical, chemical, nuclear). 2. Understand that heat energy can be transferred through conduction, radiation and convection. 3. Know that there are many forms of energy transfer but that the total amount of energy is conserved (i.e., that energy is neither created nor destroyed) 4. Understand that some energy travels as waves (e.g., seismic, light, sound), including: • the sun as source of energy for many processes on Earth • different wavelengths of sunlight (e.g., visible, ultraviolet, infrared) • vibrations of matter (e.g., sound, earthquakes) • different speeds through different materials.	<u>Electromagnetism</u> Activity 6, 8 & 9 - T.G. Pages 31-36; 45-56 <u>Flight and Rocketry</u> Activity 12 - T.G. Pages 121-130;DSM III Science Reader pgs. 3 & 15 <u>Simple Machines</u> Activity 1 - T.G. Pages 13-18; DSM III Science Reader pg. 3 <u>You and Your Body</u> Activity 14 - T.G. Pages 97-102 <u>Oceans</u> Activity 6 - T.G. Pages 65-74
Describe and explain forces that produce motion in objects.	1. Know that every object exerts gravitational force on every other object dependent on the masses and distance of separation (e.g., motions of celestial objects, tides). 2. Know that gravitational force is hard to detect unless one of the objects (e.g., Earth) has a lot of mass.	<u>Flight and Rocketry</u> Activity 2 - T.G. Pages 23-32;DSM III Science Reader pg. 4 <u>Simple Machines</u> Activity 1 - T.G. Pages 13-18; DSM III Science Reader pg. 2 <u>Flight and Rockery</u> DSM III Science Reader pgs. 4 & 7

Strand II: Content of Science

Standard II (Life Science): Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

Benchmark	*Performance Standards*	*Publisher Citation*	
Explain the diverse structures and functions of living things and the complex relationships between living things and their environments.	1. Understand how organisms interact with their physical environments to meet their needs (i.e., food, water, air) and how the water cycle is essential to living systems. 2. Describe how weather and geologic events (e.g., volcanoes, earthquakes) affect the function of living systems. 3. Describe how organisms have adapted to various environmental conditions.	Ocean Activity 10, 11 & 12 - T.G. Pages 113-142; DSM III Science Reader pgs. 12-13 Weather Forecasting Activity 12 - T.G. Pages 87-94 Ocean Activity 10 & 11 - T.G. Pages 113-134; DSM III Science Reader pgs. 12-13	Pollution Activity 10 - T.G. Pages 71-76
Understand how traits are passed from one generation to the next and how species evolve.	1. Understand that the fossil record provides data for how living organisms have evolved. 2. Describe how species have responded to changing environmental conditions over time (e.g., extinction, adaptation).	Rocks and Minerals DSM III Science Reader pgs. 14 & 15 Oceans Activity 10 & 11 - T.G. Pages 113-134; DSM III Science Reader pgs. 12-13	
Understand the structure of organisms and the function of cells in living systems.	1. Explain how fossil fuels were formed from animal and plant cells. 2. Describe the differences between substances that were produced by living organisms (e.g., fossil fuels) and substances that result from nonliving processes (e.g., igneous rocks).	Rocks and Minerals DSM III Science Reader pg. 11 Rocks and Minerals DSM III Science Reader pg. 11	Pollution DSM III Science Reader pg.7

Strand II: Content of Science

Standard III (Earth and Space Science): Understand the structure of Earth, the solar system, and the universe, the interconnections among them, and the processes and interactions of Earth's systems.

Benchmark	*Performance Standards*	*Publisher Citation*	
Describe how the concepts of energy, matter, and force can be used to	**Universe** 1. Describe the objects in the universe, including:		

explain the observed behavior of the solar system, the universe, and their structures.	• billions of galaxies, each containing billions of stars • different sizes, temperatures, and colors of stars in the Milky Way galaxy. **Solar System** 2. Locate the solar system in the Milky Way galaxy. 3. Identify the components of the solar system, and describe their defining characteristics and motions in space, including: • sun as a medium sized star • sun's composition (i.e., hydrogen, helium) and energy production • nine planets, their moons, asteroids. 4. Know that the regular and predictable motions of the Earth-moon-sun system explain phenomena on Earth, including: • Earth's motion in relation to a year, a day, the seasons, the phases of the moon, eclipses, tides, and shadows • moon's orbit around Earth once in 28 days in relation to the phases of the moon.		
Describe the structure of Earth and its atmosphere and explain how energy, matter, and forces shape Earth's systems.	**Structure of Earth** 1. Know that Earth is composed of layers that include a crust, mantle, and core. 2. Know that Earth's crust is divided into plates that move very slowly, in response to movements in the mantle. 3. Know that sedimentary, igneous, and metamorphic rocks contain evidence of the materials, temperatures, and forces that created them. **Weather and Climate** 4. Describe the composition (i.e., nitrogen, oxygen, water vapor) and strata of Earth's atmosphere, and differences between the atmosphere of Earth and those of other planets.	<u>Rocks and Minerals</u> DSM III Science Reader pgs. 2 & 9 <u>Rocks and Minerals</u> Activity 2 – T.G. Pages 21-27; DSM III Science Reader pg. 13 <u>Weather Forecasting</u> Activity 7 & 8 - T.G. Pages 55-68;DSM III Science	

	5. Understand factors that create and influence weather and climate, including: • heat, air movement, pressure, humidity, oceans • how clouds form by condensation of water vapor • how weather patterns are related to atmospheric pressure • global patterns of atmospheric movement (e.g., El Niño) • factors that can impact Earth's climate (e.g., volcanic eruptions, impacts of asteroids, glaciers). 6. Understand how to use weather maps and data (e.g., barometric pressure, wind speeds, humidity) to predict weather. **Changes to Earth** 7. Know that landforms are created and change through a combination of constructive and destructive forces, including: • weathering of rock and soil, transportation, deposition of sediment, and tectonic activity • similarities and differences between current and past processes on Earth's surface (e.g., erosion, plate tectonics, changes in atmospheric composition) • impact of volcanoes and faults on New Mexico geology. 8. Understand the history of Earth and how information about it comes from layers of sedimentary rock, including: • sediments and fossils as a record of a very slowly changing world • evidence of asteroid impact, volcanic and glacial activity.	Reader pgs. 2 & 15 <u>Weather Forecasting</u> Activity 1, 4, 5, 7, 8, 9 & 10 - T.G. Page 18; "Connections" Science Extension**;** 33-48; 55-80 <u>Weather Forecasting</u> Activity 3, 4, 5, 6, 7 & 8 - T.G. Pages 25-68; DSM III Science Reader pgs. 3-7 <u>Erosion</u> Activity 1, 2, 3, 5, 6, 9, 10 & 11 - T.G. Pages 7-28; 35-46; 61-80 <u>Rocks and Minerals</u> Activity 2 - T.G. Pages 21-28; DSM III Science Reader pgs. 13 & 15	<u>Pollution</u> DSM III Science Reader pg.6 <u>Erosion</u> Activity 9 - T.G. Pages 61-66

Strand III: Science and Society

Standard I: Understand how scientific discoveries, inventions, practices, and knowledge influence, and are influenced by, individuals and societies.

Benchmark	***Performance Standards***	***Publisher Citation***	
Explain how scientific discoveries and inventions have changed individuals and societies.	1. Examine the role of scientific knowledge in decisions (e.g., space exploration, what to eat, preventive medicine and medical treatment).	<u>You and Your Body</u> Activity 12 - T.G. Pages 85-90	<u>Pollution</u> Activity 6 & 8 - T.G. Pages 47-52; "Connections" Science and Careers; "Connections" Science Extension T.G. Page 64
	2. Describe the technologies responsible for revolutionizing information processing and communications (e.g., computers, cellular phones, Internet).	<u>Weather Forecasting</u> Activity 7 - "Connections" Science and Social Studies and Science, Technology, and Society DSM III Science Reader pg. 14	<u>Electromagnetism</u> Activity 2 - T.G. Pages 14; "Connections" Science, Technology, and Society