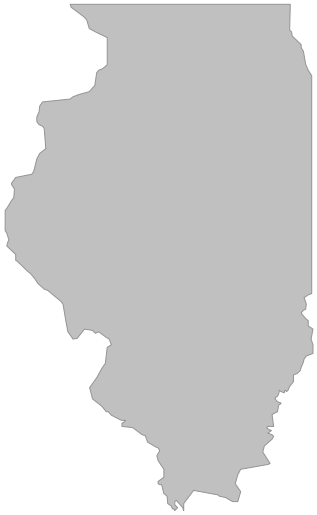
Delta Science Modules Program
Grades K-8

Correlation to

Illinois
Learning Standards
For Science



Delta Education
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Correlation of the Illinois Learning Standards for Science to Delta Science Modules Program

The following is a correlation of the Early Elementary, Late Elementary and Middle/Junior High portions of the Illinois Learning Standards for Science to Delta Science Modules Program. This correlation is to show representative examples of investigations and activities from the DSM program, which address the standards and their benchmarks. A citation does not reflect all of the investigations or activities from DSM that might address a particular benchmark.

July, 2004

STATE GOAL 11: Understand the processes of scientific inquiry and technological design to investigate questions, conduct experiments and solve problems.

Learning Standard A. Know and apply the concepts, principles and processes of scientific inquiry.

Benchmarks – Early Elementary	*DSM Activities/ Investigations*	*Benchmarks – Late Elementary*	*DSM Activities/ Investigations*	*Benchmarks – Middle/Junior High*	*DSM Activities/ Investigations*
11.A.1a Describe an observed event	All DSM modules demonstrate scientific inquiry skills. The following are a few examples: **Sunshine and Shadows** Activity 1 Pages 7-18 **Investigating Water** Activity 5 Pages 41-46 **From Seed to Plant** Activity 3-6 Pages 33-58 **States of Matter** Activity 7 Pages 57-63 **Soil Science** Activity 11 Pages 99-105	**11.A.2a** Formulate questions on a specific science topic and choose the steps needed to answer the questions.	All DSM modules demonstrate scientific inquiry skills. The following are a few examples: **Sink or Float** Activity 5, 7 Pages 53-51, 61-66 **Soil Science** Activity 12 Pages 107-114 **Magnets** Activity 3 and 4 Pages 25-34 **Sound** Activity 10 and 11 Pages 83-98 **Electromagnetism** Activity 6 Pages 43-48 **Pond Life** Activity 8 and 9 Pages 57-67	**11.A.3a** Formulate hypotheses that can be tested by collecting data.	All DSM modules provide students the opportunity to formulate hypotheses that can be tested by collecting data. The following are a few examples: **Pond life** Activity 12 Pages 81-86 **Fungi-Small Wonders** Activity 7 Pages 45-49 **Famous Scientists** Activity 7 Pages 65-75 **Plants in Our World** Activity 3 Pages 19-24

11.A.Ib Develop questions on scientific topics.	**From Seed to Plant** Activity, 6, 8 Pages 33-58, 67-72 **Sunshine and Shadows** Activity 7 Pages 57-63 **Investigating Water** Activity 5 Pages 41-46 **Plant and Animal Populations** Activity 9 Pages 85-93 **Classroom Plants** Activity 5 Pages 47-53	**11.A.2b** Collect data for investigations using scientific process skills including observing, estimating and measuring.	**Plant and Animal Populations** Activity 5-8 Pages 51-83 **Powders and Crystals** Activity 10-12 Pages 71-93 **Electrical Circuits** Activity 6 and 7 Pages 51-62 **Solar Energy** Activity 4 and 5 Pages 27-38 **Pollution** Activity 10 Pages 71-76	**11.A.3b** Conduct scientific experiments that control all but one variable.	**Fungi-Small Wonders** Activity 11 Pages 69-74 **Pond Life** Activity 12 Pages 81-86 **Plants in Our World** Activity 3 Pages 19-24 **Famous Scientists** Activity 7 Pages 65-75
11.A.1c Collect data for investigations using measuring instruments and technologies.	**From Seed to Plant** Activity 3 Pages 33-38 **Properties** Activity 6 Pages 47-52 **Force and Motion** Activity 1 and 2 Pages 13-29 **Length and Capacity**	**11.A.2c** Construct charts and visualizations to display data.	**Earth Movements** Activity 12 Pages 105-110 Sink or Float Activity 9 Pages 75-80 **Powders and Crystals** Activity 5 and 6 Pages 35-48 **Weather Watching** Activity 3 Pages 29-36	**11.A.3c** Collect and record data accurately using consistent measuring and recording techniques and media.	**Solar Energy** Activity 3-6 Pages 21-46 **You and Your Body** Activity 3 Pages 27-31 **Simple Machines** Activity 6 Pages 49-55 **Electrical Circuits** Activity 10 Pages 65-70 **Plants in Our World**

	Activity 5, 6, 11 Pages 37-48, 83-88 **Using Your Senses** Activity 2 Pages 23-30		**Electromagnetism** Activity 6 Pages 43-48 **Solar Energy** Activity 7 and 8 Pages 47-58		Activity 3 Pages 10-24
11.A.1d Record and store data using available technologies.	**Properties** Activity 6 Pages 47-52 **Observing an Aquarium** Activity 4 and 5 Pages 39-55 **From Seed to Plant** Activity 6 Pages 53-58 **Weather Watching** Activity 3 Pages 29-36 **States of Matter** Activity 6 Pages 51-56 **Plant and Animal Populations** Activity 6 and 7 Pages 59-76	**11.A.2d** Use data to produce reasonable explanations.	**Force and Motion** Activity 5, Pages 49-55 **Soil Science** Activity 10 Pages 91-97 **Animal Behavior** Activity 5 and 6 Pages 31-44 **Weather Instruments** Activity 6 Pages 51-57 **Simple Machines** Activity 6 Pages 49-55 **Erosion** Activity 7 Pages 59-66	**11.A.3d** Explain the existence of unexpected results in a data set.	DSM investigations include a class discussion where unexpected results can be explained. For example: **Fungi-Small Wonders** Activity 7 Pages 45-49 **Chemical Interactions** Activity 11 Pages 81-85 **Newton's Toy Box** Activity 7-9, Pages 39-54

11.A.1e Arrange data into logical patterns and describe the patterns.	**Finding the Moon** Activity 3,and 4 Pages 29-46 **From Seed to Plant** Activity 8 Pages 67-72 **Investigating Water** Activity 10 Pages 81-88 **Length and Capacity** Activity 4 Pages 27-36 **Amazing Air** Activity 5 Pages 43-49 **Plant and Animal Populations** Activity 6-8 Pages 59-83	**11.A.2e** Report and display the results of individual and group investigations.	**Force and Motion** Activity 5, pages 49-55 **Soil Science** Activity 10 Pages 91-97 **Animal Behavior** Activity 5 and 6 Pages 31-44 **Weather Instruments** Activity 6 Pages 51-57 **Simple Machines** Activity 6 Pages 49-55 **Erosion** Activity 7 Pages 59-66	**11.A.3e** Use data manipulation tools and quantitative (e.g., mean, mode, simple equations) and representational methods (e.g., simulations, image processing) to analyze measurements.	**Solar Energy** Activity 5 and 6 Pages 33-46 **Electromagnetism** Activity 6 Pages 31-36 **Chemical Interactions** Activity 1 and 2 Pages 7-21 **Electrical Connections** Activity 9 Pages 59-64
11.A.1f Compare observations of individual and group results.	**Observing an Aquarium** Activity 8 and 11 Pages 79-87, 109-116 **Properties** Activity 10 and 11 Pages 75-86 **Investigating Water**			**11.A.3f** Interpret and represent results of analysis to produce findings.	**Solar Energy** Activity 3-6 Pages 21-46 **Pond Life** Activity 12 Pages 81-86 **Chemical Interactions** Activity 1 and 2 Pages 7-21 **Famous Scientists** Activity 1

	Activity 12 Pages 95-100 **Sink or Float** Activity 11 and 12 Pages 89-107 **Classroom Plants** Activity 3-5 Pages 29-53 **Soil Science** Activity 11 and 12 Pages 99-114				Pages 11-19
				11.A.3g Report and display the process and results of a scientific investigation.	**Lenses and Mirrors** Activity 12 Pages 89-94 **Solar Energy** Activity 9 Pages 59-64 **Pond Life** Activity 12 Pages 81-86 **You and Your Body** Activity 3 Pages 27-31

Learning Standard B. Know and apply the concepts, principles and processes of technological design.

Benchmarks – Early Elementary	***DSM Activities/ Investigations***	***Benchmarks – Late Elementary***	***DSM Activities/ Investigations***	***Benchmarks – Middle/Junior High***	***DSM Activities/ Investigations***
11.B.1a Given a simple design problem, formulate possible solutions.	**Sink or Float** Activity 12 Pages 97-103 **Force and Motion** Activity 12, Science Challenge Page 117 **Amazing Air** Activity 12, Reinforcement Page 107 **States of Matter** Activity 5, Science Challenge Page 50	**11.B.2a** Identify a design problem and propose possible solutions.	**Sound** Activity 12 Pages 99-105 **Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **Flight and Rocketry** Activity 5, Reinforcement Page 63	**11.B.3a** Identify an actual design problem and establish criteria for determining the success of a solution.	The following activities can be used to accomplish these technical design benchmarks. **Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **If Shipwrecks Could Talk** Activity 4, Science Extension Page 45 **Newton's Toy Box** Activity 10, Science Challenge Page 58
11.B.1b Design a device that will be useful in solving the problem.	**Sink or Float** Activity 12 Pages 97-103 **Force and Motion** Activity 12, Science Challenge Page 117 **Amazing Air** Activity 12, Reinforcement	**11.B.2b** Develop a plan, design and procedure to address the problem identifying constraints (e.g., time, materials, technology).	**Sound** Activity 12 Pages 99-105 **Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **Flight and Rocketry**	**11.B.3b** Sketch, propose and compare design solutions to the problem considering available materials, tools, cost effectiveness and safety.	**Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **If Shipwrecks Could Talk** Activity 4, Science Extension

	Page 107 **States of Matter** Activity 5, Science Challenge Page 50		Activity 5, Reinforcement Page 63		Page 45 **Newton's Toy Box** Activity 10, Science Challenge Page 58
11B.1c Build the device using the materials and tools provided.	**Sink or Float** Activity 12 Pages 97-103 **Force and Motion** Activity 12, Science Challenge Page 117 **Amazing Air** Activity 12, Reinforcement Page 107 **States of Matter** Activity 5, Science Challenge Page 50	**11.B.2c** Build a prototype of the design using available tools and materials.	**Sound** Activity 12 Pages 99-105 **Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **Flight and Rocketry** Activity 5, Reinforcement Page 63	**11.B.3c** Select the most appropriate design and build a prototype or simulation.	**Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **If Shipwrecks Could Talk** Activity 4, Science Extension Page 45 **Newton's Toy Box** Activity 10, Science Challenge Page 58
11.B.1d Test the device and record results using given instruments, techniques and measurement methods.	**Sink or Float** Activity 12 Pages 97-103 **Force and Motion** Activity 12, Science Challenge Page 117 **Amazing Air** Activity 12, Reinforcement Page 107 **States of Matter** Activity 5, Science	**11.B.2d** Test the prototype using suitable instruments, techniques and quantitative measurements to record data.	**Sound** Activity 12 Pages 99-105 **Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **Flight and Rocketry** Activity 5, Reinforcement Page 63	**11.B.3d** Test the prototype using available materials, instruments and technology and record the data.	**Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **If Shipwrecks Could Talk** Activity 4, Science Extension Page 45 **Newton's Toy Box** Activity 10, Science

	Challenge Page 50				Challenge Page 58
11.B.1e Report the design of the device, the test process and the results in solving a given problem.	Investigating **Sink or Float** Activity 12 Pages 97-103 **Force and Motion** Activity 12, Science Challenge Page 117 **Amazing Air** Activity 12, Reinforcement Page 107 **States of Matter** Activity 5, Science Challenge Page 50	**11.B.2e** Assess test results and the effectiveness of the design using given criteria and noting possible sources of error.	**Sound** Activity 12 Pages 99-105 **Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **Flight and Rocketry** Activity 5, Reinforcement Page 63	**11.B.3e** Evaluate the test results based on established criteria, note sources of error and recommend improvements.	**Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **If Shipwrecks Could Talk** Activity 4, Science Extension Page 45 **Newton's Toy Box** Activity 10, Science Challenge Page 58
		11.B.2f Report test design, test process and test results	**Sound** Activity 12 Pages 99-105 **Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **Flight and Rocketry** Activity 5, Reinforcement Page 63	**11.B.3f** Using available technology, report the relative success of the design based on the test results and criteria.	**Solar Energy** Activity 11 and 12 Pages 71-82 **Simple Machines** Activity 12, Science Challenge Page 98 **If Shipwrecks Could Talk** Activity 4, Science Extension Page 45 **Newton's Toy Box** Activity 10, Science Challenge Page 58

STATE GOAL 12: Understand the fundamental concepts, principles and interconnections of the life, physical and earth/space sciences.

A. Know and apply concepts that explain how living things function, adapt and change.

Benchmarks – Early Elementary	*DSM Activities/ Investigations*	*Benchmarks – Late Elementary*	*DSM Activities/ Investigations*	*Benchmarks – Middle/Junior High*	*DSM Activities/ Investigations*
12.A.1a Identify and describe the component parts of living things (e.g., birds have feathers; people have bones, blood, hair, skin) and their major functions.	**From Seed to Plant** Activity 3, 9, 10 Pages 33-38, 73-84 Reader, Pages 3-9 **Observing an Aquarium** Activity 4 and 5 Pages 39-55 Reader, Pages 4-8 **Plant and Animal Populations** Activity 6 and 7 Pages 59-76 **Butterflies and Moths** Activity 2, Pages 23-30 Reader, Pages 4-5 **Classroom Plants** Activity 6-9 Pages 55-81 Reader, Pages 6-12	**12.A.2a** Describe simple life cycles of plants and animals and the similarities and differences in their offspring.	**Classroom Plants** Reader, Page 5 **Plant and Animal Life Cycles** Activity 2-10 Pages 23-96 Reader, Pages 2-13 **Butterflies and Moths** Activity 1, 6, 9, 11 Pages 15-21, 53-59, 79-87, 97-104 Reader, Pages 3, 8-13 **Insect Life** Activity 7 Pages 47-54	**12.A.3a** Explain how cells function as "building blocks" of organisms and describe the requirements for cells to live.	**You and Your Body** Reader, Pages 2-3 **Plants in Our World** Activity 1 Pages 7-12 **DNA-From Genes to Proteins** Activity 3 and 4 Pages 19-29

12.A.1b Categorize living organisms using a variety of observable features (e.g., size, color, shape, backbone).	**From Seed to Plant** Activity 2 Pages 21-31 Reader, Pages 14-15 **Observing an Aquarium** Activity 5 and 6 Pages 47-67 Reader, Pages 4-8 **Classroom Plants** Activity 9, 11 Pages 81-86, 97-104 Reader, Pages 11-12 **Butterflies and Moths** Activity 12 Pages 105-110 Reader, Pages 4-7	**12.A.2b** Categorize features as either inherited or learned (e.g., flower color or eye color is inherited; language is learned).	**Insect Life** Activity 1, 5 Pages 7-13, 33-39 **Butterflies and Moths** Activity 12 Pages 105-110 **Dinosaurs and Fossils** Activity 10 Pages 75-82 **Pond Life** Activity 8 and 9 Pages 57-67	**12.A.3b** Compare characteristics of organisms produced from a single parent with those of organisms produced by two parents.	**Fungi-Small Wonders** Activity 4 Pages 25-29 **Pond Life** Activity 10 Pages 69-74 **DNA-From Genes to Proteins** Activity 11, Science and Math Page 79
				12.A.3c Compare and contrast how different forms and structures reflect different functions (e.g., similarities and differences among animals that fly, walk or swim; structures of plant cells and animal cells).	**Pond Life** Activity 8-10 Pages 57-74 **Fungi-Small Wonders** Activity 1 and 2 Pages 7-18 **You and Your Body** Activity 1, 2, 4, 7, 8 Pages 13-25, 33-39. 55-66 Reader, Pages 4-11 **Plants in Our World** Activity 2, 4. 11 Pages 13-18, 25-30, 69-75

B. Know and apply concepts that describe how living things interact with each other and with their environment.

Benchmarks – Early Elementary	*DSM Activities/ Investigations*	*Benchmarks – Late Elementary*	*DSM Activities/ Investigations*	*Benchmarks – Middle/Junior High*	*DSM Activities/ Investigations*
12.B.1a Describe and compare characteristics of living things in relationship to their environments.	**Observing an Aquarium** Activity 8 and 9 Pages 79-98 Reader, Pages 6-9 **From Seed to Plant** Activity 11 and 12 Pages 85-96 Reader, Pages 6-7, 14-15 **Classroom Plants** Activity 11 Pages 97-104 Reader, pages 7-11 **Butterflies and Moths** Activity 7 and 8 Pages 61-77 Reader, Pages 6-7, 15	**12.B.2a** Describe relationships among various organisms in their environments (e.g., predator/prey, parasite/host, food chains and food webs).	**Plant and Animal Populations** Activity 10-12 Pages 95-117 Reader, Pages 10-13 **Butterflies and Moths** Activity 8 Pages 71-77 **Food Chains and Webs** Activity 8-12 Pages 67-101 Reader, Pages 4-9 **Pond Life** Activity 11 Pages 75-80	**12.B.3a** Identify and classify biotic and abiotic factors in an environment that affect population density, habitat and placement of organisms in an energy pyramid.	**Pond Life** Activity 3 and 4 Pages 19-34
12.B.1b Describe how living things depend on one another for survival.	**Observing an Aquarium** Activity 3, 5, 7 Pages 31-38, 47-55, 69-78 Reader, Page 12 **From Seed to Plant** Reader, Pages 14-15 **Plant and Animal Populations**	**12.B.2b** Identify physical features of plants and animals that help them live in different environments (e.g., specialized teeth for eating certain foods, thorns for	**Insect Life** Activity 9, 12 Pages 61-66, 79-83 **Butterflies and Moths** Activity 7 and 8 Pages 61-77 Reader, Pages 4-5 **Plant and Animal Life Cycles**	**12.B.3b** Compare and assess features of organisms for their adaptive, competitive and survival potential (e.g., appendages, reproductive rates, camouflage, defensive structures).	**Pond Life** Activity 8-10 Pages 57-74 **Fungi-Small Wonders** Activity 2, 7 Pages 13-18, 45-49 **Plants in Our World** Activity 6, 8, 9, 11 Pages 37-41, 51-61,

	Activity 6, 7, 10-12 Pages 59-76, 95-117 Reader, Pages 10-13	protection, insulation for cold temperature).	Activity 8, 11 Pages 75-82, 97-103 Reader, Pages 7-12 **Classroom Plants** Activity 11 Pages 97-104 **Dinosaurs and Fossils** Activity 8, Pages 61-66 Reader, Pages 6-11		69-75

C. Know and apply concepts that describe properties of matter and energy and the interactions between them.

Benchmarks – Early Elementary	*DSM Activities/ Investigations*	*Benchmarks – Late Elementary*	*DSM Activities/ Investigations*	*Benchmarks – Middle/Junior High*	*DSM Activities/ Investigations*
12.C.1a Identify and compare sources of energy (e.g., batteries, the sun).	**Sunshine and Shadows** Activity 4-7 Pages 33-63 Reader, Pages 2-3 **Finding the Moon** Activity 1 Pages 13-19 **From Seed to Plant** Activity 11 Pages 85-90 **States of Matter** Activity 4 Pages 35-40 **Force and Motion** Reader, Pages 4, 14 **Weather Watching** Reader, Pages 4-5	**12.C.2a** Describe and compare types of energy including light, heat, sound, electrical and mechanical.	**Sound** Activity 1-3 Pages 13-35 Reader Pages 2-8 **Electrical Circuits** Activity 1-4, 9, 10 Pages 13-43, 71-82 **Magnets** Activity 1-3, 11 Pages 13-40, 71-76 Reader, Pages 2-6 **Sound** Reader, Pages 2-8 **Electromagnetism** Activity 1-2, 6-9 Pages 13-23, 43-68	**12.C.3a** Explain interactions of energy with matter including changes of state and conservation of mass and energy.	**Electromagnetism** Activity 1-9 Pages 13-68 Reader, Pages 2-13 **Weather Forecasting** Activity 9 Pages 69-74 **Oceans** Activity 5 Pages 55-63 Reader, Pages 7-10 **Flight and Rocketry** Reader, Pages 10-13 **Electrical Connections** Activity 1-4

			Reader, Pages 2-12 **Color and Light** Activity 1 Pages 13-18 Reader, Pages 2-9		Pages 7-30 **Famous Scientists** Activity 5 and 6, Pages 45-65
12.C.1b Compare large-scale physical properties of matter (e.g., size, shape, color, texture, odor).	**Properties** Activity 3-6 Pages 25-52 Reader, Pages 3-13 **Investigating Water** Activity 4 and 5 Pages 35-46 Reader, Pages 4-11 **Sunshine and Shadows** Activity 8, 9 Pages 65-76 **Amazing Air** Activity 1-3 Pages 7-33 **Sink or Float** Activity 1 Pages 13-19 Reader, Pages 2-8	**12.C.2b** Describe and explain the properties of solids, liquids and gases.	**Looking at Liquids** Activities 1-11 Pages 7-81 **Amazing Air** Activity 1-7 Pages 7-68 **States of Matter** Activity 1-4, 8-10 Pages 13-40, 65-88 Reader, Pages 3-6 **Sink or Float** Reader, Pages 5-6 **Water Cycle** Reader, Pages 8-9	**12.C.3b** Model and describe the chemical and physical characteristics of matter (e.g., atoms, molecules, elements, compounds, mixtures).	**Chemical Interactions** Activity 4, 5, 7, 8 Pages 29-42, 53-64

D. Know and apply concepts that describe force and motion and the principles that explain them.

Benchmarks – Early Elementary	*DSM Activities/ Investigations*	*Benchmarks – Late Elementary*	*DSM Activities/ Investigations*	*Benchmarks – Middle/Junior High*	*DSM Activities/ Investigations*
12.D.1a Identify examples of motion (e.g., moving in a straight line, vibrating, rotating).	**Sunshine and Shadows** Activity 6 and 7 Pages 49-63 Reader, Pages 8-9 **Finding the Moon** Activity 3 Pages 29-37 **Investigating Water** Activity 8 Pages 63-69 **Force and Motion** Activity 1-8 Pages 13-82 Reader, Pages 6-10, 14	**12.D.2a** Explain constant, variable and periodic motions.	**Sound** Activity 2-6 Pages 21-57 Reader, Pages 3-7 **Using Your Senses** Activity 5 and 6 Pages 45-60 Reader, Page 7 **Force and Motion** Activity 4-8 Pages 41-82 Reader, Pages 6-10, 14 **Weather Instruments** Activity 5 Pages 43-50 **Flight and Rocketry** Activity 8-12 Pages 81-130	**12.D.3a** Explain and demonstrate how forces affect motion (e.g., action/reaction, equilibrium conditions, free-falling objects).	**Flight and Rocketry** Activity 2, 6, 8-12 Pages 23-32, 65-72, 81-130 Reader, Pages 2-13 **Simple Machines** Activity 2, 5-8 Pages 19-24, 39-69 Reader, Pages 2-11 **Newton's Toy Box** Activity 1, 3, 7, 8, 10 Pages 7-11, 19-24, 39-49, 55-58 **Famous Scientists** Activity 2 and 3 Pages 21-34
12.D.1b Identify observable forces in nature (e.g., pushes, pulls, gravity, magnetism).	**Properties** Activity 11 Pages 81-86 Reader, Page 8 **Amazing Air** Activity 11 and 12 Pages 95-108 **Force and Motion** Activity 1 and 2 Pages 13-29 Reader, Pages 2-3	**12.D.2b** Demonstrate and explain ways that forces cause actions and reactions (e.g., magnets attracting and repelling; objects falling, rolling and bouncing).	**Force and Motion** Activity 1-8 Pages 13-82 Reader, Pages 3-15 **Amazing Air** Activity 11, 12 Pages 95-108 **Magnets** Activity 1-11 Pages 13-76 Reader, pages 2-5,	**12.D.3b** Explain the factors that affect the gravitational forces on objects (e.g., changes in mass, distance).	**Flight and Rocketry** Activity 2-5 Pages 23-64 Reader, Pages 4-5, 7 **Famous Scientists** Activity 3 Pages 29-34 **Newton's Toy Box** Activity 2-4 Pages 13-29

			10-11 **Simple Machines** Activity 4-8 Pages 33-69 Reader, Pages 4-9 **Electromagnetism** Activity 1-6 Pages 13-48 Reader, Pages 6-9		

E. Know and apply concepts that describe the features and processes of the Earth and its resources.

Benchmarks – Early Elementary	*DSM Activities/ Investigations*	*Benchmarks – Late Elementary*	*DSM Activities/ Investigations*	*Benchmarks – Middle/Junior High*	*DSM Activities/ Investigations*
12.E.1a Identify components and describe diverse features of the Earth's land, water and atmospheric systems.	**Observing an Aquarium** Activity 1-6, 12 Pages 15-67, 117-125 Reader, Pages 14-15 **Finding the Moon** Activity 8 Pages 71-76 **Soil Science** Activity 1-12 Pages 15-114 Reader, Pages 2-9 **Weather Watching** Activity 6-11 Pages 51-108	**12.E.2a** Identify and explain natural cycles of the Earth's land, water and atmospheric systems (e.g., rock cycle, water cycle, weather patterns).	**Water Cycle** Activity 1-9, 11-13 Pages 13-83, 91-114 Reader, Pages 10-12 Weather Instruments Activity 9 Pages 75-80 Reader, Page 6 **Weather Forecasting** Activity 7, 9 Pages 55-61, 69-74 **Rocks and Minerals** Activity 9 and 10 Pages 69-84 Reader, Page 13 **Oceans** Activity 5 Pages 55-63 Reader, Pages 8-10	**12.E.3a** Analyze and explain large-scale dynamic forces, events and processes that affect the Earth's land, water and atmospheric systems (e.g., jetstream, hurricanes, plate tectonics).	**Oceans** Activity 6-8 Pages 65-98 **Weather Forecasting** Activity 7, 12 Pages 55-61, 87-93 Reader, Pages 12-13 **Erosion** Activity 1, 2, 10-12 Pages 13-27, 83-104 Reader, Pages 2-13 **Earth Processes** Activity 1, 3, 5, 7, 8, 14 Pages 7-14, 21-29, 39-46, 55-68, 105-112

12.E.1b Identify and describe patterns of weather and seasonal change.	**Sunshine and Shadows** Reader, Pages 12-1`3 **Weather Watching** Activity 1-12 Pages 13-116 Reader, Pages 2-12	**12.E.2b** Describe and explain short-term and long-term interactions of the Earth's components (e.g., earthquakes, types of erosion).	**Earth Movements** Activity 5-12 Pages 47-110 Reader, Pages 2-13 **Soil Science** Activity 5, 6, 12 Pages 45-58, 107-114 Reader, Pages 4-6, 9 **Erosion** Activity 1, 2, 10-12 Pages 13-27, 83-104 Reader, Pages 2-13	**12.E.3b** Describe interactions between solid earth, oceans, atmosphere and organisms that have resulted in ongoing changes of Earth (e.g., erosion, El Nino).	**Oceans** Reader, Pages 4-10 **Erosion** Activity 1, 2, 9-12 Pages 13-27, 43-57, 83-104 Reader, Pages 2-13 **Earth Processes** Activity 3, 5, 7 Pages 21-29, 39-46, 55-60
12.E.1c Identify renewable and nonrenewable natural resources.	**Investigating Water** Activity 12, Science, Technology, and Society Page 100 **Observing an Aquarium** Activity 11, Science, Technology, and Society Page 116 **Soil Science** Activity 8 Pages 69-79 Reader, Pages 10-12	**12.E.2c** Identify and classify recyclable materials.	**Pollution** Activities 1-3 Pages 13-30 Reader, Pages 3, 13	**12.E.3c** Evaluate the biodegradability of renewable and nonrenewable natural resources.	**Pollution** Reader, Pages 2-3

F. Know and apply concepts that explain the composition and structure of the universe and Earth's place in it.

Benchmarks – Early Elementary	*DSM Activities/ Investigations*	*Benchmarks – Late Elementary*	*DSM Activities/ Investigations*	*Benchmarks – Middle/Junior High*	*DSM Activities/ Investigations*
12.F.1a Identify and describe characteristics of the sun, Earth and moon as familiar objects in the solar system.	**Sunshine and Shadows** Activity 4-7 Pages 33-63 Reader, Pages 2, 8-9 **Finding the Moon** Activity 1-6, 9-11 Pages 13-61, 77-97 Reader, Pages 2-15	**12.F.2a** Identify and explain natural cycles and patterns in the solar system (e.g., order of the planets; moon phases; seasons as related to Earth's tilt, one's latitude, and where Earth is in its yearly orbit around the sun).	**Solar System** Activities 1-9 Pages 13-81 Reader, Pages 2-13	**12.F.3a** Simulate, analyze and explain the effects of gravitational force in the solar system (e.g., orbital shape and speed, tides, spherical shape of the planets and moons).	**Oceans** Activity 9 Pages 99-111 **Famous Scientists** Activity 3, Pages 29-31 **Earth, Moon, and Sun** Activity 12 Pages 95-103
12.F.1b Identify daily, seasonal and annual patterns related to the Earth's rotation and revolution.	**Finding the Moon** Activity 9, 10 Pages 77-91 Reader, Pages 6-10 **Sunshine and Shadows** Reader, Pages 8-9 **Weather Watching** Reader, Pages 8-10	**12.F.2b** Explain the apparent motion of the sun and stars.	**Solar System** Activity 12 Pages 101-110	**12.F.3b** Describe the organization and physical characteristics of the solar system (e.g., sun, planets, satellites, asteroids, comets).	**Astronomy** Activity 5, 6 Pages 43-60 **Earth, Moon, and Sun** Activity 1-5 Pages 7-43
		12.F.2c Identify easily recognizable star patterns (e.g., the Big Dipper, constellations).	**Solar System** Activity 12 Pages 101-110	**12.F.3c** Compare and contrast the sun as a star with other objects in the Milky Way Galaxy (e.g., nebulae, dust clouds, stars, black holes).	**Astronomy** Activity 4, 10, 11 Pages 35-42, 85-99

STATE GOAL 13: Understand the relationships among science, technology and society in historical and contemporary contexts.

A. Know and apply the accepted practices of science.

Benchmarks – Early Elementary	*DSM Activities/ Investigations*	*Benchmarks – Late Elementary*	*DSM Activities/ Investigations*	*Benchmarks – Middle/Junior High*	*DSM Activities/ Investigations*
13.A.1a Use basic safety practices (e.g., not tasting materials without permission, "stop/drop/roll").	All modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included. For example: **Sunshine and Shadows** Pages 12, 15, 21 **Force and Motion** Pages 15, 17, 25 **Using Your Senses** Pages 25, 29, 33	**13.A.2a** Demonstrate ways to avoid injury when conducting science activities (e.g., wearing goggles, fire extinguisher use).	All modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included. For example: **Force and Motion** Pages 15, 17, 25, 43 **Electrical Circuits** Pages 12, 15, 64 **Powders and Crystals** Pages 46, 51, 66 **Simple Machines** Pages 51, 79, 87	**13.A.3a** Identify and reduce potential hazards in science activities (e.g., ventilation, handling chemicals).	All modules are designed to include safe practices. Where special caution is needed, safety-warning statements are included. For example: **Color and Light** Pages 16, 26, 51, 75 **Famous Scientists** Pages 41, 48, 51 **Chemical Interactions** Pages 75, 76, 83 **Electrical Connections** Pages 47, 49
13.A.1b Explain why similar results are expected when procedures are done the same way.	DSM activities provide opportunity for the teaching of this understanding. For example: **Investigating Water** Activity 7 and 8	**13.A.2b** Explain why similar investigations may not produce similar results.	DSM activities provide opportunity for the teaching of this understanding. For example: **Force and Motion** Activity 4 and 5 Pages 41-55	**13.A.3b** Analyze historical and contemporary cases in which the work of science has been affected by both valid and biased scientific	DSM activities provide opportunity for the teaching of this understanding. For example: **Pollution** Reader, Page 14 **Famous Scientists**

	Pages 55-69 **From Seed to Plant** Activity 8 Pages 67-72 **Sunshine and Shadows** Activity 6 and 7 Pages 49-63 **Sink or Float** Activity 1-3 Pages 13-34 **Force and Motion** Activity 4 and 5 Pages 41-55		**States of Matter** Activities 11 Pages 25-35 **Magnets** Activity 3 and 4 Pages 25-34 **Small Things and Microscopes** Activity 12 Pages 73-77 **Color and Light** Activity 2 and 3 Pages 20-35	practices.	Activity 1-12 Pages 11-121 **DNA-From Genes to Proteins** Activity 10, Science Challenge Page 74 Activity 12, Science, Technology, and Society Page 87 **Earth Processes** Activity 1 Pages 7-14
13.A.1c Explain how knowledge can be gained by careful observation.	DSM activities provide opportunity for the teaching of this understanding. For example: **Investigating Water** Activity 1-5 Pages 13-46 **From Seed to Plant** Activity 5-8 Pages 45-72 **Soil Science** Activity1-4 Pages 15-44 **Butterflies and Moths** Activity 1 Pages 15-21 **Classroom Plants** Activity 3-5 Pages 29-53	**13.A.2c** Explain why keeping accurate and detailed records is important.	DSM activities provide opportunity for the teaching of this understanding. For example: **Electrical Circuits** Activities 3-7 Pages 27-62 **Powders and Crystals** Activities 5-12 Pages 35-93 **You and Your Body** Activity 3 Pages 27-31 **Pollution** Activity 10 Pages 71-76	**13.A.3c** Explain what is similar and different about observational and experimental investigations.	DSM activities provide opportunity for the teaching of this understanding. For example: **Pond Life** Activity 12 Pages 81-86 **Solar Energy** Activity 5-8 Pages 33-58 **Plants in Our World** Activity 3 Pages 19-24 **Earth, Moon, and Sun** Activity 1 and 2 Pages 7-21 **Famous Scientists** Activity 7, 9 Pages 65-75, 85-93

B. Know and apply concepts that describe the interaction between science, technology and society.

Benchmarks – Early Elementary	*DSM Activities/ Investigations*	*Benchmarks – Late Elementary*	*DSM Activities/ Investigations*	*Benchmarks – Middle/Junior High*	*DSM Activities/ Investigations*
13.B.1a Explain the uses of common scientific instruments (e.g., ruler, thermometer, balance, probe, computer).	**Properties** Activity 6 Pages 47-52 **Observing an Aquarium** Activity 3-6 Pages 31-57 **From Seed to Plant** Activity 1-5 Pages 15-52 **Length and Capacity** Activity 5-7, 10-12 Pages 37-57, 77-94 **States of Matter** Activity 6, 7, 11 Pages 51-63, 89-96	**13.B.2a** Explain how technology is used in science for a variety of purposes (e.g., sample collection, storage and treatment; measurement; data collection, storage and retrieval; communication of information).	**Measuring** Activity 5, 6, 9-12 Pages 37-50, 65-95 **Weather Watching** Activity 2-5 Pages 21-50 **Small Things and Microscopes** Activity 2-12 Pages 19-77 **Length and Capacity** Activity 5-7, 10-12 Pages 37-57, 77-94	**13.B.3a** Identify and explain ways that scientific knowledge and economics drive technological development.	DSM activities provide opportunity for the teaching of this understanding. For example: **You and Your Body** Reader, Page 12 **Electromagnetism** Reader, Pages 14-15 **Flight and Rocketry** Reader, Pages 14-15 **Astronomy** Activity 9, Science, Technology, and Society Page 83 **Earth Processes** Activity 9, Science, Technology, and Society Page 75
13.B.1b Explain how using measuring tools improves the accuracy of estimates.	**Properties** Activity 6 Pages 47-52 **Length and Capacity** Activity 5-7, 10-12 Pages 37-57, 77-94 **Force and Motion** Activity 1-3 Pages 13-29	**13.B.2b** Describe the effects on society of scientific and technological innovations (e.g., antibiotics, steam engine, digital computer).	**Force and Motion** Reader, Pages 12-14 **Electrical Circuits** Reader, Pages 10-11, 13 **Electromagnetism** Activity 11, Science, Technology, and Society Page 83	**13.B.3b** Identify important contributions to science and technology that have been made by individuals and groups from various cultures.	**You and Your Body** Reader, Pages 12-13 **Color and Light** Reader, Page 14 **Flight and Rocketry** Reader, Pages 14-15 **Famous Scientists** Activity 1-12 Pages 11-121 **Astronomy**

	States of Matter Activity 6, 7, 11 Pages 51-63, 89-96		Reader, Pages 10-13 **Sound** Activity 5, Science, Technology, and Society Page 50		Activity 9, Science and Language Arts Page 83 **Newton's Toy Box** Activity 1, Science and Social Studies Page 11
13.B.1c Describe contributions men and women have made to science and technology.	**Finding the Moon** Activity 12, Science and Careers Page 104 **Weather Watching** Activity 5 Pages 45-50 **Amazing Air** Activity 11 Pages 95-100 **Finding the Moon** Reader, Page 14 **Using Your Senses** Reader, Page 14 **Classroom Plants** Reader, Page 14	**13.B.2c** Identify and explain ways that science and technology influence the lives and careers of people.	**Using Your Senses** Activity 1, Science and Careers Page 21 **Force and Motion** Activity 7, Science and Careers Page 72 **Solar System** Activity 3, Science and the Arts Page 32 **Color and Light** Activity 1, Science and Social Studies Page 18 Reader, Page 14	**13.B.3c** Describe how occupations use scientific and technological knowledge and skills.	**You and Your Body** Reader, Pages 12, 14 **Simple Machines** Reader, Page 13 **Weather Forecasting** Reader, Pages 3-7, 11 **Astronomy** Activity 9, Science and Health Page 83 **Earth Processes** Activity 9, Science and Careers Page 75
13.B.1d Identify and describe ways that science and technology affect people's everyday lives (e.g., transportation, medicine, agriculture, sanitation,	**Sunshine and Shadows** Activity 11, Science, Technology, and Society Page 88 **Investigating Water** Activity 12, Science, Technology, and Society	**13.B.2d** Compare the relative effectiveness of reducing, reusing and recycling in actual situations.	**Soil** Reader, Page 12 **Water Cycle** Activity 11, Science and Math Page 98 Activity 11, Science, Technology, and Society	**13.B.3d** Analyze the interaction of resource acquisition, technological development and ecosystem impact (e.g., diamond, coal or gold mining; deforestation).	**Pollution** Reader, Pages 5, 9-10

communication occupations).	Page 100 **Force and Motion** Activity 12 Pages 111-117 Activity 11, Science, Technology, and Society Page 109 **Sink or Float** Activity 11, Science, Technology, and Society Page 96		Page 98 **Pollution** Activity 1-3 Pages 13-25 Reader, Pages 1-3		
13.B.1e Demonstrate ways to reduce, reuse and recycle materials.	**Investigating Water** Activity 12, Science, Technology, and Society Page 100 Reader, Page 15 **Observing an Aquarium** Activity 11, Science, Technology, and Society Page 116 **Soil Science** Activity 12, Science, Technology, and Society Page 114 Reader, Pages 10-12	**13.B.2e** Identify and explain ways that technology changes ecosystems (e.g., dams, highways, buildings, communication networks, power plants).	**Pollution** Activities 4-10 Pages 31-76 Reader, Pages 4-13 **Water Cycle** Activity 12, Science, Technology, and Society Page 106 Reader, Pages 14-15 **Food Chains and Webs** Activity 12, Science, Technology, and Society Page 101	**13.B.3e** Identify advantages and disadvantages of natural resource conservation and management programs.	**Pollution** Reader, Pages 8, 12 **Erosion** Reader, Page 14
		13.B.2f Analyze how specific personal and societal choices that humans make affect	**Soil Science** Reader, Page 12 **Food Chains and Webs**	**13.B.3f** Apply classroom-developed criteria to determine the effects of policies	**If Shipwrecks Could Talk** Activity 11 Pages 103-108

		local, regional and global ecosystems (e.g., lawn and garden care, mass transit).	Activity 12, Science, Technology, and Society Page 101 Reader, Page 12 **Water Cycle** Activity 11, Science and Math Page 98 **Pollution** Activities 1-3 Pages 13-30 Reader, Pages 6-8, 15	on local science and technology issues (e.g., energy consumption, landfills, water quality).	