SRA Life, Earth, and Physical Science Laboratories
correlation to
Arkansas Science Curriculum Framework 2005
Grade 6

SRA Life, Earth, and Physical Science Laboratories provide core science content in an alternate reading format. Each *SRA Science Lab* contains 180 Science Cards covering key science concepts and vocabulary. Each lab covers 90 different science topics presented at two different reading levels to meet varied student abilities. The *Teacher's Handbook* includes hands-on inquiry activities as well as vocabulary building exercises. The *Classroom Resource CD-ROM* includes Writing Strategies in Science along with tests and vocabulary games.

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.6.1 Verify accuracy of observations.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 11

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.6.2 Identify and define components of experimental design used to produce empirical evidence : • **Hypothesis** • **Replication** • **Sample size** • **Appropriate use of control** • **Use of standardized variables.**
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 11

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.6.3 Compare scientific data using mean, median, mode, and range using SI units.
Life Science Lab Teacher's Handbook: Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 3, *Energy Conversion,* pages 85-87

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.6.4 Interpret scientific data using: • **Data tables/charts** • **Bar and double bar graphs** • **Circle graphs** • **Line graphs** • **Stem and leaf plots** • **Line graphs.**
Life Science Lab Teacher's Handbook: Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 3, *Energy Conversion,* pages 85-87

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.6.5 Communicate results and conclusions from scientific inquiry.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 18

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.6.6 Develop and implement strategies for long-term, accurate data collection.
Life Science Lab Teacher's Handbook: Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 22, 24

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.6.7 Distinguish between scientific fact and opinion.
Classroom Resource CD-ROM: Writing Strategy 30

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.6.8 Explain the role of prediction in the development of a theory.
Life Science Lab Teacher's Handbook: Hands-On Activity 4, *Your Cardiovascular System*, pages 89-91 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 2, *Chemical Reaction Rates*, pages 81-83; Hands-On Activity 3, *Energy Conversion*, pages 85-87; Hands-On Activity 4, *Reducing Friction*, pages 89-91

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.6.9 Define and give examples of laws and theories.
Life Science Lab, Level A: Cards 5, 65 **Life Science Lab, Level B:** Cards 5, 65 **Earth Science Lab, Level A:** Cards 10, 68, 72, 78 **Earth Science Lab, Level B:** Cards 10, 68, 72, 78 **Physical Science Lab, Level A:** Cards 3, 9, 37, 53, 55, 59, 63 **Physical Science Lab, Level B:** Cards 3, 9, 37, 53, 55, 59, 63

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.6.1 Observe, describe, and illustrate plant and animal tissues: • **Muscle** • **Blood** • **Skin** • **Xylem** • **Phloem.**
Life Science Lab, Level A: Cards 6, 7, 19, 20, 48, 55, 56 **Life Science Lab, Level B:** Cards 6, 7, 19, 20, 48, 55, 56 **Life Science Lab Teacher's Handbook:** Hands-On Activity 1, *Examining Cells*, pages 77-79

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.6.2 Illustrate the hierarchical relationships of cells, tissues, and organs.
Life Science Lab, Level A: Card 44 **Life Science Lab, Level B:** Card 44

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.6.3 Investigate the functions of tissues.
Life Science Lab, Level A: Card 44 **Life Science Lab, Level B:** Card 44

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.6.4 Model and explain the functions of animal organs: • **Heart** • **Lung** • **Kidneys** • **Eyes** • **Ears** • **Skin** • **Teeth.**
Life Science Lab, Level A: Cards 47, 50, 51, 52, 56 **Life Science Lab, Level B:** Cards 47, 50, 51, 52, 56

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.6.5 Model and explain the function of plant organs: • **Leaves** • **Roots** • **Stems** • **Flowers.**
Life Science Lab, Level A: Cards 16, 17, 20, 22 **Life Science Lab, Level B:** Cards 16, 17, 20, 22

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.6.6 Dissect organs, including but not limited to: • **Heart** • **Eye** • **Lung** • **Stem** • **Root.**
Life Science Lab, Level A: Cards 16, 47, 51 **Life Science Lab, Level B:** Cards 16, 47, 51

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.6.7 Describe the relationship between organ function and the following needs of cells: • **Oxygen** • **Food** • **Water** • **Waste removal.**
Life Science Lab, Level A: Cards 8, 9 **Life Science Lab, Level B:** Cards 8, 9

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.6.8 Investigate careers, scientists, and historical breakthroughs related to tissues and organs.
Life Science Lab, Level A: Cards 5, 46, 49 **Life Science Lab, Level B:** Cards 5, 46, 49

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.6.1 Describe characteristics of plants and animals through selective breeding.
Life Science Lab, Level A: Cards 65, 66 **Life Science Lab, Level B:** Cards 65, 66

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.6.2 Predict the outcome of selective breeding practices over several generations.
Life Science Lab, Level A: Cards 65, 66 **Life Science Lab, Level B:** Cards 65, 66

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.6.3 Relate the development of Earth's present-day complex species from earlier, distinctly different simpler species.
Life Science Lab, Level A: Cards 66, 67, 68 **Life Science Lab, Level B:** Cards 66, 67, 68 **Earth Science Lab, Level A:** Card 34 **Earth Science Lab, Level B:** Card 34

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.6.4 Investigate careers, scientists, and historical breakthroughs related to adaptations and selective breeding.
Life Science Lab, Level A: Cards 64, 69 **Life Science Lab, Level B:** Cards 64, 69

Strand 2: Life Science

Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.

Heredity and Reproduction

LS.3.6.5 Describe behavioral adaptations of organisms to the environment:

- **Hibernation**
- **Estivation**
- **Tropism**
- **Territorial behavior**
- **Migration.**

Life Science Lab, Level A: Cards 24, 36, 43, 83
Life Science Lab, Level B: Cards 24, 36, 43, 83

Strand 2: Life Science

Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.

Heredity and Reproduction

LS.3.6.6 Differentiate between innate behaviors:

- **Migration**
- **Web spinning**
- **Defensive posture**
- **Communication**
- **Imprinting**

and learned behaviors:

- **Speaking a language**
- **Using tools**
- **Hunting skills.**

Life Science Lab, Level A: Card 43
Life Science Lab, Level B: Card 43

Strand 2: Life Science

Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.

Heredity and Reproduction

LS.3.6.7 Describe the following structural adaptations for survival in the environment:

- **Coloration**
- **Mimicry**
- **Odor glands**
- **Beaks**
- **Feet**
- **Wings**
- **Fur**
- **Ears**
- **Spines**
- **Teeth**
- **Thorns**
- **Characteristics of seeds.**

Life Science Lab, Level A: Cards 23, 41, 73
Life Science Lab, Level B: Cards 23, 41, 73
Life Science Lab Teacher's Handbook: Hands-On Activity 3, *Investigating Arthropods,* pages 85-87

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.6.8 Investigate careers, scientists, and historical breakthroughs related to learned and innate behaviors.
Life Science Lab, Level A: Cards 24, 43 **Life Science Lab, Level B:** Cards 24, 43

Strand 2: Life Science
Standard 4: Populations and Ecosystems: Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology.
Populations and Ecosystems
LS.4.6.1 Identify environmental conditions that can affect the survival of individual organisms and entire species.
Life Science Lab, Level A: Cards 70, 80, 84, 86, 87, 88, 89, 90 **Life Science Lab, Level B:** Cards 70, 80, 84, 86, 87, 88, 89, 90 **Life Science Lab Teacher's Handbook:** Hands-On Activity 7, *The Effects of Acid Rain*, pages 101-103 **Earth Science Lab, Level A:** Cards 37, 42, 59, 60, 61, 86 **Earth Science Lab, Level B:** Cards 37, 42, 59, 60, 61, 86 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 5, *What is in the Air?*, pages 89-91

Strand 2: Life Science
Standard 4: Populations and Ecosystems: Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology.
Populations and Ecosystems
LS.4.6.2 Conduct simulations demonstrating competition for resources within an ecosystem.
Life Science Lab, Level A: Cards 75, 76 **Life Science Lab, Level B:** Cards 75, 76 **Life Science Lab Teacher's Handbook:** Hands-On Activity 6, *How Much Does Energy Cost?*, pages 97-99

Strand 2: Life Science
Standard 4: Populations and Ecosystems: Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology.
Populations and Ecosystems
LS.4.6.3 Conduct simulations demonstrating natural selection.
Life Science Lab, Level A: Cards 65, 66 **Life Science Lab, Level B:** Cards 65, 66

Strand 2: Life Science
Standard 4: Populations and Ecosystems: Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology.
Populations and Ecosystems
LS.4.6.4 Analyze natural selection.
Life Science Lab, Level A: Cards 65, 66 **Life Science Lab, Level B:** Cards 65, 66

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.1 Identify common examples of chemical properties: • **Ability to burn** • **Ability to produce light** • **Ability to react with other substances.**
Physical Science Lab, Level A: Cards 9, 27, 28, 29, 30 **Physical Science Lab, Level B:** Cards 9, 27, 28, 29, 30 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 2, *Chemical Reaction Rates*, pages 81-83

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.2 Compare and contrast characteristics of physical and chemical properties.
Physical Science Lab, Level A: Cards 1, 2, 5, 6, 7, 8, 9 **Physical Science Lab, Level B:** Cards 1, 2, 5, 6, 7, 8, 9

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.3 Conduct investigations using acid/base indicators.
Physical Science Lab, Level A: Cards 14, 15, 16 **Physical Science Lab, Level B:** Cards 14, 15, 16 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases*, pages 77-79

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.4 Apply skills of scientific investigation to determine density using SI units.
Physical Science Lab, Level A: Cards 2, 61 **Physical Science Lab, Level B:** Cards 2, 61

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.5 Construct a density column using a minimum of four different liquids (e.g., alcohol, colored water, syrup, oil).
Physical Science Lab, Level A: Cards 2, 61 **Physical Science Lab, Level B:** Cards 2, 61

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.6 Use a density column to test the density of various solid objects (e.g., piece of candy, candle, paper clip, egg).
Physical Science Lab, Level A: Cards 2, 61 **Physical Science Lab, Level B:** Cards 2, 61

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.7 Identify characteristics of chemical changes: • **Burning** • **Production of a new substance** • **Production of light** • **Color change** • **Endothermic and exothermic reactions** • **Reactivity.**
Physical Science Lab, Level A: Cards 9, 27, 28, 29, 30 **Physical Science Lab, Level B:** Cards 9, 27, 28, 29, 30 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 2, *Chemical Reaction Rates*, pages 81-83

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.8 Conduct investigations comparing and contrasting physical and chemical changes.
Physical Science Lab, Level A: Cards 8, 9, 27, 28, 29, 3 0 **Physical Science Lab, Level B:** Cards 8, 9, 27, 28, 29, 30 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 2, *Chemical Reaction Rates*, pages 81-83

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.9 Demonstrate the law of conservation of matter.
Physical Science Lab, Level A: Cards 9, 27, 28 **Physical Science Lab, Level B:** Cards 9, 27, 28 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 2, *Chemical Reaction Rates*, pages 81-83

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.6.5.10 Investigate scientists, careers, and historical breakthroughs related to chemical properties and chemical changes.
Physical Science Lab, Level A: Cards 33, 34 **Physical Science Lab, Level B:** Cards 33, 34

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.1 Compare and contrast simple machines and compound machines.
Physical Science Lab, Level A: Cards 41, 63, 64 **Physical Science Lab, Level B:** Cards 41, 63, 64

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.2 Identify and analyze the simple machines that make up a compound machine.
Physical Science Lab, Level A: Cards 41, 63, 64 **Physical Science Lab, Level B:** Cards 41, 63, 64

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.3 Conduct investigations of various forces using SI units (newton).
Physical Science Lab, Level A: Card 54 **Physical Science Lab, Level B:** Card 54

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.4 Recognize and give examples of different types of forces: • **Gravitational forces** • **Magnetic forces** • **Friction.**
Physical Science Lab, Level A: Cards 57, 58, 59, 74, 75, 76 **Physical Science Lab, Level B:** Cards 57, 58, 59, 74, 75, 76 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 4, *Reducing Friction,* pages 89-91

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.5 Understand why objects have weight.
Physical Science Lab, Level A: Card 57 **Physical Science Lab, Level B:** Card 57

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.6 Compare and contrast weight and mass.
Physical Science Lab, Level A: Card 57 **Physical Science Lab, Level B:** Card 57

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.7 Describe the effects of force: • **Move a stationary object** • **Speed up, slow down, or change the direction of motion** • **Change the shape of objects.**
Physical Science Lab, Level A: Cards 54, 55, 56, 58, 59, 63, 64 **Physical Science Lab, Level B:** Cards 54, 55, 56, 58, 59, 63, 64

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.8 Conduct investigations to demonstrate change in direction caused by force.
Physical Science Lab, Level A: Cards 54, 55, 56, 58, 59, 63, 64 **Physical Science Lab, Level B:** Cards 54, 55, 56, 58, 59, 63, 64 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 4, *Reducing Friction*, pages 89-91

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.9 Conduct investigations to calculate the change in speed caused by applying forces to an object.
Physical Science Lab, Level A: Cards 51, 52 **Physical Science Lab, Level B:** Cards 51, 52

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.6.10 Investigate careers, scientists, and historical breakthroughs related to compound machines and forces.
Physical Science Lab, Level A: Cards 41, 55, 63, 64 **Physical Science Lab, Level B:** Cards 41, 55, 63, 64

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.6.1 Classify examples of energy forms: • **Chemical** • **Electromagnetic** • **Mechanical** • **Thermal** • **Nuclear.**
Physical Science Lab, Level A: Cards 34, 41, 42, 45, 46, 4, 66, 67, 76 **Physical Science Lab, Level B:** Cards 34, 41, 42, 45, 46, 66, 67, 76 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 5, *Making a Potato Battery*, pages 93-95

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.6.2 Summarize the application of the law of conservation of energy in real world situations: • **Electrical energy into mechanical energy** • **Electrical energy into heat** • **Chemical energy into mechanical energy** • **Chemical energy into light.**
Physical Science Lab, Level A: Cards 37, 45, 66, 67, 68, 69 **Physical Science Lab, Level B:** Cards 37, 45, 66, 67, 68, 69 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 5, *Making a Potato Battery*, pages 93-95

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.6.3 Conduct investigations demonstrating how energy can be converted from one form to another.
Physical Science Lab, Level A: Cards 36, 37, 41, 45, 46, 47, 48, 70, 76, 80 **Physical Science Lab, Level B:** Cards 36, 37, 41, 45, 46, 47, 48, 70, 76, 80 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 3, *Energy Conversion*, pages 85-87; Hands-On Activity 5, *Making a Potato Battery*, pages 93-95; Hands-On Activity 6, *Making Sound*, pages 97-99

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.6.4 Investigate the transfer of energy in real world situations: • **Conduction** • **Convection** • **Radiation.**
Earth Science Lab, Level A: Card 38 **Earth Science Lab, Level B:** Card 38 **Physical Science Lab, Level A:** Cards 43, 44, 46 **Physical Science Lab, Level B:** Cards 43, 44, 46

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.6.5 Investigate careers, scientists, and historical breakthroughs related to energy forms and conversions.
Physical Science Lab, Level A: Cards 76, 81, 84, 90 **Physical Science Lab, Level B:** Cards 76, 81, 84, 90

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.1 Identify and diagram the layers of the Earth: • **Crust** • **Mantle** • **Inner and outer core.**
Earth Science Lab, Level A: Cards 1, 2 **Earth Science Lab, Level B:** Cards 1, 2

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.2 Model the layers of the Earth.
Earth Science Lab, Level A: Cards 1, 2 **Earth Science Lab, Level B:** Cards 1, 2

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.3 Model how convection currents in the mantle affect lithosphere movement.
Earth Science Lab, Level A: Cards 10, 11, 12, 13, 14 **Earth Science Lab, Level B:** Cards 10, 11, 12, 13, 14 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79;

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.4 Conduct investigations to identify the variables within volcanoes that cause different types of eruptions.
Earth Science Lab, Level A: Card 17 **Earth Science Lab, Level B:** Card 17

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.5 Diagram and explain how volcanoes work.
Earth Science Lab, Level A: Card 17 **Earth Science Lab, Level B:** Card 17

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.6 Explain how volcanic activity relates to mountain formation.
Earth Science Lab, Level A: Cards 17, 21 **Earth Science Lab, Level B:** Cards 17, 21

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.7 Connect short-term changes in climate with volcanic activity.
Earth Science Lab, Level A: Cards 17, 59, 60 **Earth Science Lab, Level B:** Cards 17, 59, 60

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.8 Compare and contrast the different land forms caused by Earth's internal forces: • **Mountains** • **Plateaus** • **Trenches** • **Islands.**
Earth Science Lab, Level A: Cards 12, 17, 21, 88 **Earth Science Lab, Level B:** Cards 12, 17, 21, 88

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.9 Research local, regional, and state landforms created by internal forces in the earth: • **Ozark Plateau** • **Crater of Diamonds** • **Ouachita Mountains** • **New Madrid Fault.**
Earth Science Lab, Level A: Cards 14, 15, 16, 17, 21 **Earth Science Lab, Level B:** Cards 14, 15, 16, 17, 21

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.10 Identify the effects of earthquakes on Earth's surface: • **Tsunamis** • **Floods** • **Changes in natural and man-made structures.**
Earth Science Lab, Level A: Cards 15, 16 **Earth Science Lab, Level B:** Cards 15, 16

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.11 Investigate and map patterns of earthquake and volcanic activity.
Earth Science Lab, Level A: Cards 15, 16, 17 **Earth Science Lab, Level B:** Cards 15, 16, 17

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.12 Locate earthquake belts on Earth: • **Mediterranean-Trans-Asiatic** • **Circum-Pacific (Ring of Fire).**
Earth Science Lab, Level A: Cards 15, 16 **Earth Science Lab, Level B:** Cards 15, 16

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.13 Analyze how earthquake occurrences are recorded (seismograph) and measured (Richter scale).
Earth Science Lab, Level A: Cards 15, 16 **Earth Science Lab, Level B:** Cards 15, 16

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.14 Model the effect of major geological events on land and ocean features: • **Mountain building** • **Ocean trenches** • **Island formation** • **Mid-ocean ridges.**
Earth Science Lab, Level A: Cards 12, 17, 21, 88 **Earth Science Lab, Level B:** Cards 12, 17, 21, 88

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.6.15 Investigate careers, scientists, and historical breakthroughs related to internal forces that change the Earth.
Earth Science Lab, Level A: Cards 10, 16 **Earth Science Lab, Level B:** Cards 10, 16

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.6.1 Research methods of determining geologic time: • **Fossil record.** • **Mountain building** • **Rock sequencing.**
Life Science Lab, Level A: Card 67 **Life Science Lab, Level B:** Card 67 **Earth Science Lab, Level A:** Cards 7, 30, 31, 34 **Earth Science Lab, Level B:** Cards 7, 30, 31, 34

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.6.2 Model rock layer sequencing based on characteristics of fossils.
Earth Science Lab, Level A: Cards 7, 9, 30, 34 **Earth Science Lab, Level B:** Cards 7, 9, 30, 34

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.6.3 Analyze evidence that supports the theory of plate tectonics: • **Matching coastlines** • **Similar rock types** • **Fossil record.**
Earth Science Lab, Level A: Cards 10, 11, 12, 13, 30, 34 **Earth Science Lab, Level B:** Cards 10, 11, 12, 13, 30, 34

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.6.1 Explain how planets seem to wander against the background of the stars.
Earth Science Lab, Level A: Cards 69, 70, 71, 72, 75 **Earth Science Lab, Level B:** Cards 69, 70, 71, 72, 75

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.6.2 Compare the distance of the following: • **From the sun to Earth (light minutes)** • **From the nearest star to Earth (light years).**
Earth Science Lab, Level A: Cards 67, 74 **Earth Science Lab, Level B:** Cards 67, 74 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 7, *Sizes in the Solar System*, pages 97-99

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.6.3 Describe how astronomers measure distance to stars.
Earth Science Lab, Level A: Card 74 **Earth Science Lab, Level B:** Card 74

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.6.4 Calculate the rate at which we would have to travel to other stars and planets in our solar system using current technology.
Earth Science Lab, Level A: Card 74 **Earth Science Lab, Level B:** Card 74 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 7, *Sizes in the Solar System*, pages 97-99

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.6.5 Explain the effect of the sun on comets.
Earth Science Lab, Level A: Card 73 **Earth Science Lab, Level B:** Card 73

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.6.6 Compare and contrast comets, meteors, and asteroids by: • **Size** • **Orbits** • **Nucleus** • **Mass.**
Earth Science Lab, Level A: Card 73 **Earth Science Lab, Level B:** Card 73

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.6.7 Model moon phases demonstrating the position of Earth, moon, and sun.
Earth Science Lab, Level A: Card 64 **Earth Science Lab, Level B:** Card 64

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.6.8 Compare and contrast solar eclipse and lunar eclipse.
Earth Science Lab, Level A: Card 65 **Earth Science Lab, Level B:** Card 65

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.6.9 Investigate careers, scientists, and historical breakthroughs related to the sun and space travel.
Earth Science Lab, Level A: Cards 68, 72, 78, 79, 80, 81 **Earth Science Lab, Level B:** Cards 68, 72, 78, 79, 80, 81

SRA Life, Earth, and Physical Science Laboratories
correlation to
Arkansas Science Curriculum Framework 2005
Grade 7

SRA Life, Earth, and Physical Science Laboratories provide core science content in an alternate reading format. Each *SRA Science Lab* contains 180 Science Cards covering key science concepts and vocabulary. Each lab covers 90 different science topics presented at two different reading levels to meet varied student abilities. The *Teacher's Handbook* includes hands-on inquiry activities as well as vocabulary building exercises. The *Classroom Resource CD-ROM* includes Writing Strategies in Science along with tests and vocabulary games.

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.7.1 Interpret evidence based on observations.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 11

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.7.2 Analyze components of experimental design used to produce empirical evidence : • **Hypothesis** • **Replication** • **Sample size** • **Appropriate use of control** • **Use of standardized variables.**
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 11

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.7.3 Interpret scientific data using mean, median, mode, and range using SI units.
Life Science Lab Teacher's Handbook: Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 3, *Energy Conversion,* pages 85-87

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.7.4 Construct and interpret scientific data using: • **Histograms** • **Circle graphs** • **Scatter plots** • **Double line graphs** • **Line graphs by approximating line of best fit.**
Life Science Lab Teacher's Handbook: Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 3, *Energy Conversion,* pages 85-87

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.7.5 Communicate results and conclusions from scientific inquiry.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 18

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.7.6 Develop and implement strategies for long-term, accurate data collection.
Life Science Lab Teacher's Handbook: Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 22, 24

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.7.7 Distinguish between questions that can and cannot be answered by science.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.7.8 Explain the role of testability and modification in the development of a theory.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.7.9 Compare and contrast hypotheses, laws, and theories.
Life Science Lab, Level A: Cards 5, 65 **Life Science Lab, Level B:** Cards 5, 65 **Earth Science Lab, Level A:** Cards 10, 68, 72, 78 **Earth Science Lab, Level B:** Cards 10, 68, 72, 78 **Physical Science Lab, Level A:** Cards 3, 9, 37, 53, 55, 59, 63 **Physical Science Lab, Level B:** Cards 3, 9, 37, 53, 55, 59, 63

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.1 Illustrate the hierarchical relationships of cells, tissues, organs, and organ systems.
Life Science Lab, Level A: Card 44 **Life Science Lab, Level B:** Card 44

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.2 Analyze how two or more organs work together to perform a function (e.g., mouth and stomach to digest food).
Life Science Lab, Level A: Cards 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab, Level B:** Cards 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab Teacher's Handbook:** Hands-On Activity 4, *Your Cardiovascular System*, pages 89-91

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.3 Identify organ systems in vertebrates and plants.
Life Science Lab, Level A: Cards 16, 17, 19, 20, 21, 22, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab, Level B:** Cards 16, 17, 19, 20, 21, 22, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab Teacher's Handbook:** Hands-On Activity 4, *Your Cardiovascular System*, pages 89-91

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.4 Analyze the structure and functions of tissues, organs, and organ systems of a vertebrate and an angiosperm using various models or methods of dissection.
Life Science Lab, Level A: Cards 16, 17, 22, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab, Level B:** Cards 16, 17, 22, 47, 48,4 9, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab Teacher's Handbook:** Hands-On Activity 4, *Your Cardiovascular System*, pages 89-91

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.5 Compare and contrast vertebrate systems and plant organ systems.
Life Science Lab, Level A: Cards 16, 17, 22, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab, Level B:** Cards 16, 17, 22, 47, 48,4 9, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab Teacher's Handbook:** Hands-On Activity 4, *Your Cardiovascular System*, pages 89-91

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.6 Identify human body systems: • **Nervous** • **Digestive** • **Circulatory** • **Respiratory** • **Excretory** • **Integumentary** • **Skeletal/muscular** • **Endocrine** • **Reproductive.**
Life Science Lab, Level A: Cards 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab, Level B:** Cards 47, 48,4 9, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab Teacher's Handbook:** Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.7 Relate the structure of vertebrate and plant body systems to their functions.
Life Science Lab, Level A: Cards 16, 17, 22, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab, Level B:** Cards 16, 17, 22, 47, 48,4 9, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab Teacher's Handbook:** Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.8 Investigate functions of human body systems.
Life Science Lab, Level A: Cards 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab, Level B:** Cards 47, 48,4 9, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab Teacher's Handbook:** Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.9 Describe interactions between major organ systems.
Life Science Lab, Level A: Cards 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab, Level B:** Cards 47, 48,4 9, 50, 51, 52, 53, 54, 55, 56, 57, 58 **Life Science Lab Teacher's Handbook:** Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.7.10 Investigate careers, scientists, and historical breakthroughs related to life systems.
Life Science Lab, Level A: Cards 46, 49, 64, 69 **Life Science Lab, Level B:** Cards 46, 49, 64, 69

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.1 Explain that the fertilized egg cell carries genetic information from each parent and multiplies to form a complete organisms.
Life Science Lab, Level A: Cards 58, 61 **Life Science Lab, Level B:** Cards 58, 61

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.2 Distinguish between sperm cells and egg cells.
Life Science Lab, Level A: Cards 58, 61 **Life Science Lab, Level B:** Cards 58, 61

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.3 Compare and contrast the structure and function of the sperm cell and the egg cell in vertebrates and plants and their role in sexual reproduction.
Life Science Lab, Level A: Cards 21, 22, 61 **Life Science Lab, Level B:** Cards 22, 22, 61

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.4 Investigate and analyze the development of embryos.
Life Science Lab, Level A: Cards 20, 40 **Life Science Lab, Level B:** Cards 20, 40

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.5 Dissect a poultry egg to analyze its structure (e.g., paper, plastic, or clay models; virtual dissection; or specimen dissection).
This concept is not covered at this level.

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.6 Dissect a flower to analyze the reproductive system of angiosperms (e.g., paper, plastic, or clay models; virtual dissection; or specimen dissection).
Life Science Lab, Level A: Card 22 **Life Science Lab, Level B:** Card 22

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.7 Differentiate between sexual and asexual reproduction in • **Vertebrates** • **Plants.**
Life Science Lab, Level A: Cards 60, 61 **Life Science Lab, Level B:** Cards 60, 61

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.8 Identify the number and source of chromosomes in human body cells.
Life Science Lab, Level A: Cards 10, 61 **Life Science Lab, Level B:** Cards 10, 61

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.9 Identify the number and source of chromosomes in human sex cells.
Life Science Lab, Level A: Card 61 **Life Science Lab, Level B:** Card 61

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.10 Explain the role of cell division.
Life Science Lab, Level A: Cards 10, 60 **Life Science Lab, Level B:** Cards 10, 60

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.11 Investigate careers, scientists, and historical breakthroughs related to reproduction.
Life Science Lab, Level A: Cards 64, 69 **Life Science Lab, Level B:** Cards 64, 69

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.7.12 Summarize the interactions between organ systems in the maintenance of homeostasis.
Life Science Lab, Level A: Card 44 **Life Science Lab, Level B:** Card 44

Strand 2: Life Science
Standard 4: Populations and Ecosystems: Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology.
Populations and Ecosystems
LS.4.7.1 Explain the role of reproduction in the continuation of a species.
Life Science Lab, Level A: Cards 1, 60, 61 **Life Science Lab, Level B:** Cards 1, 60, 61

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.1 Explain how a small number of naturally-occurring elements can result in the large variety of substances found in the world.
Physical Science Lab, Level A: Cards 10, 11, 17, 18, 19, 20, 21, 22, 23, 24, 25 **Physical Science Lab, Level B:** Cards 10, 11, 17, 18, 19, 20, 21, 22, 23, 24, 25

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.2 Create models of common compounds: • **Water** • **Carbon dioxide** • **Salt** • **Iron oxide** • **Ammonia.**
Physical Science Lab, Level A: Card 11 **Physical Science Lab, Level B:** Card 11

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.3 Identify compounds as substances consisting of two or more elements chemically combined.
Physical Science Lab, Level A: Card 11 **Physical Science Lab, Level B:** Card 11

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.4 Compare and contrast properties of compounds to those of the elements that compose them: • **Salt: odium, chlorine** • **Water: hydrogen, oxygen** • **Carbon dioxide: carbon, oxygen.**
Physical Science Lab, Level A: Card 11 **Physical Science Lab, Level B:** Card 11

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.5 Demonstrate techniques for forming and separating mixtures: • **Mixing** • **Magnetic attraction** • **Evaporation** • **Filtration** • **Chromatography** • **Settling.**
Physical Science Lab, Level A: Card 12 **Physical Science Lab, Level B:** Card 12

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.6 Classify substances as: • **Elements** • **Compounds** • **Mixtures.**
Physical Science Lab, Level A: Cards 10, 11, 12 **Physical Science Lab, Level B:** Cards 10, 11, 12

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.7 Distinguish among solvent, solute, and solution.
Physical Science Lab, Level A: Card 13 **Physical Science Lab, Level B:** Card 13

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.8 Investigate the effect of variables on solubility rates.
Physical Science Lab, Level A: Card 13 **Physical Science Lab, Level B:** Card 13

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.9 Interpret solubility graphs.
Physical Science Lab, Level A: Card 13 **Physical Science Lab, Level B:** Card 13

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.7.10 Investigate scientists, careers, and historical breakthroughs related to elements, mixtures, and compounds.
Physical Science Lab, Level A: Cards 3, 7, 17, 31, 34, 35 **Physical Science Lab, Level B:** Cards 3, 7, 17, 31, 34, 35

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.7.1 Compare and contrast Newton's three laws of motion.
Physical Science Lab, Level A: Card 55 **Physical Science Lab, Level B:** Card 55

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.7.2 Conduct investigations demonstrating Newton's first law of motion.
Physical Science Lab, Level A: Card 55 **Physical Science Lab, Level B:** Card 55

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.7.3 Demonstrate Newton's second law of motion.
Physical Science Lab, Level A: Card 55 **Physical Science Lab, Level B:** Card 55

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.7.6.4 Conduct investigations of Newton's third law of motion.
Physical Science Lab, Level A: Card 55 **Physical Science Lab, Level B:** Card 55

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.7.5 Explain how Newton's three laws of motion apply to real world situations (e.g., sports, transportation).
Physical Science Lab, Level A: Card 55 **Physical Science Lab, Level B:** Card 55

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.7.6 Investigate careers, scientists, and historical breakthroughs related to laws of motion.
Physical Science Lab, Level A: Cards 53, 55, 59 **Physical Science Lab, Level B:** Cards 53, 55, 59

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.7.1 Identify natural resources used to supply energy needs.
Life Science Lab, Level A: Cards 84, 89 **Life Science Lab, Level B:** Cards 84,89 **Earth Science Lab, Level A:** Cards 35, 90 **Earth Science Lab, Level B:** Cards 35, 90 **Physical Science Lab, Level A:** Cards 38, 46, 47, 48, 49 **Physical Science Lab, Level B:** Cards 38, 46, 47, 48, 49

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.7.2 Describe alternative to the use of fossil fuels: • **Solar energy** • **Geothermal energy** • **Wind** • **Hydroelectric power** • **Nuclear energy** • **Biomass.**
Earth Science Lab, Level A: Card 90 **Earth Science Lab, Level B:** Card 90 **Physical Science Lab, Level A:** Cards 34, 46, 47, 48, 49 **Physical Science Lab, Level B:** Cards 34, 46, 47, 48, 49

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.7.3 Conduct investigations to identify types of potential energy and kinetic energy.
Physical Science Lab, Level A: Cards 36, 37, 39, 40, 41, 42 **Physical Science Lab, Level B:** Cards 36, 37, 39, 40, 41, 42

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.7.4 Investigate alternative energy sources.
Earth Science Lab, Level A: Card 90 **Earth Science Lab, Level B:** Card 90 **Physical Science Lab, Level A:** Cards 34, 46, 47, 48, 49 **Physical Science Lab, Level B:** Cards 34, 46, 47, 48, 49

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.7.5 Investigate careers, scientists, and historical breakthroughs related to natural resources, alternative resources, electricity, and magnetism.
Physical Science Lab, Level A: Cards 46, 47, 48, 49, 69, 70, 72, 73, 76 **Physical Science Lab, Level B:** Cards 46, 47, 48, 49, 69, 70, 72, 73, 76

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.1 Describe the composition and physical characteristics of the atmosphere.
Earth Science Lab, Level A: Cards 36, 37, 38, 39, 40, 41, 42 **Earth Science Lab, Level B:** Cards 36, 37, 38, 39, 40, 41, 42 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 5, *What is in the Air?*, pages 89-91

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.2 Investigate the influence of global patterns on local weather: • **Movement of air masses** • **Coriolis effect** • **Jet stream** • **Global wind belts.**
Earth Science Lab, Level A: Cards 40, 45 **Earth Science Lab, Level B:** Cards 40, 45

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.3 Conduct investigations demonstrating the effects of solar energy on the atmosphere.
Life Science Lab, Level A: Card 89 **Life Science Lab, Level B:** Card 89 **Earth Science Lab, Level A:** Cards 37, 38 **Earth Science Lab, Level B:** Cards 37, 38

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.4 Investigate the effect that oceans have on climate.
Earth Science Lab, Level A: Cards 40, 41, 54, 55, 56, 57, 58, 60, 61, 87 **Earth Science Lab, Level B:** Cards 40, 41, 54, 55, 56, 57, 58, 60, 61, 87

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.5 Identify elements of weather: • **Temperature** • **Air pressure** • **Wind speed** • **Wind direction** • **Humidity.**
Earth Science Lab, Level A: Cards 39, 40, 41, 43, 44, 45, 46 **Earth Science Lab, Level B:** Cards 39, 40, 41, 43, 44, 45, 46

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.6 Conduct investigations using weather measurement devices: • **Anemometers** • **Barometers** • **Sling psychrometers** • **Thermometers** • **Weather charts.**
Earth Science Lab, Level A: Cards 39, 43, 44, 49, 51 **Earth Science Lab, Level B:** Cards 39, 43, 44, 49, 51

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.7 Predict weather conditions using data on the following: • **Temperature** • **Air pressure: highs, lows, fronts** • **Wind speed** • **Wind direction** • **Humidity.**
Earth Science Lab, Level A: Cards 50, 51 **Earth Science Lab, Level B:** Cards 50, 51

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.8 Identify the causes and effects of weather-related phenomena: • **Thunderstorms** • **Tornadoes/hurricanes/cyclones/typhoons** • **Drought** • **Acid precipitation.**
Life Science Lab, Level A: Cards 7, 90 **Life Science Lab, Level B:** Cards 7, 90 **Earth Science Lab, Level A:** Cards 42, 52, 53, 54 **Earth Science Lab, Level B:** Cards 42, 52, 53, 54

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.9 Explain tornado belt weather patterns using a map of the United States.
Earth Science Lab, Level A: Card 53 **Earth Science Lab, Level B:** Card 53

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.10 Describe ways human beings protect themselves, others, and their property from adverse weather conditions.
Physical Science Lab, Level A: Cards 52, 53, 54 **Physical Science Lab, Level B:** Cards 52, 53, 54

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.11 Describe and map climates of major Earth regions.
Earth Science Lab, Level A: Cards 55, 58 **Earth Science Lab, Level B:** Cards 55, 58

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.12 Analyze the effect of the shape of Earth and the tilt of earth's axis on climate.
Earth Science Lab, Level A: Cards 55, 58, 62 **Earth Science Lab, Level B:** Cards 55, 58, 62

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.13 Identify and explain the effects that human activities have on weather and atmosphere.
Life Science Lab, Level A: Cards 89, 90 **Life Science Lab, Level B:** Cards 89, 90 **Life Science Lab Teacher's Handbook:** Hands-On Activity 7, *The Effects of Acid Rain*, pages 101-103 **Earth Science Lab, Level A:** Cards 37, 42, 59, 60, 61 **Earth Science Lab, Level B:** Cards 37, 42, 59, 60, 61

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.14 Describe causes and effects of acid precipitation.
Life Science Lab, Level A: Cards 89, 90 **Life Science Lab, Level B:** Cards 89, 90 **Life Science Lab Teacher's Handbook:** Hands-On Activity 7, *The Effects of Acid Rain*, pages 101-103 **Earth Science Lab, Level A:** Card 42 **Earth Science Lab, Level B:** Card 42

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.7.15 Investigate careers, scientists, and historical breakthroughs related to atmosphere and weather.
Life Science Lab, Level A: Cards 89, 90 **Life Science Lab, Level B:** Cards 89, 90 **Earth Science Lab, Level A:** Cards 50, 51, 54 **Earth Science Lab, Level B:** Cards 50, 51, 54

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.7.16 Conduct investigates demonstrating the water cycle.
Earth Science Lab, Level A: Card 47 **Earth Science Lab, Level B:** Card 47

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.7.17 Explain the relationship between the water cycles and ground water.
Earth Science Lab, Level A: Cards 47, 82, 83, 84 **Earth Science Lab, Level B:** Cards 47, 82, 83, 84

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.7.18 Investigate cloud formation.
Earth Science Lab, Level A: Card 48 **Earth Science Lab, Level B:** Card 48

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.7.19 Conduct investigations demonstrating the greenhouse effect.
Life Science Lab, Level A: Card 89 **Life Science Lab, Level B:** Card 89 **Earth Science Lab, Level A:** Card 59 **Earth Science Lab, Level B:** Card 59

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.7.20 Research how human activities may contribute to global warming.
Life Science Lab, Level A: Card 89 **Life Science Lab, Level B:** Card 89 **Earth Science Lab, Level A:** Cards 59, 61 **Earth Science Lab, Level B:** Cards 59, 61

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.7.21 Explain examples of actual events that cause temporary climate changes: • **Volcanic dust** • **Drought** • **Meteor impact.**
Earth Science Lab, Level A: Card 60 **Earth Science Lab, Level B:** Card 60

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.7.1 Analyze charts to infer past atmospheric conditions based on the organisms found in the fossil record.
Earth Science Lab, Level A: Cards 32, 33, 34, 35 **Earth Science Lab, Level B:** Cards 32, 33, 34, 35

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.7.2 Demonstrate that Earth has a magnetic field that is detectible at the surface with a compass.
Physical Science Lab, Level A: Card 75 **Physical Science Lab, Level B:** Card 75

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.7.3 Compare and contrast Earth's magnetic field to those of natural or human-made magnets with: • **North and South poles** • **Lines of force.**
Physical Science Lab, Level A: Card 75 **Physical Science Lab, Level B:** Card 75

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.7.4 Analyze evidence of sea floor spreading: • **Magnetic reversal** • **Molten material** • **Drilling samples.**
Earth Science Lab, Level A: Cards 12, 88 **Earth Science Lab, Level B:** Cards 12, 88

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.7.5 Research ways in which people have used compasses.
Physical Science Lab, Level A: Card 75 **Physical Science Lab, Level B:** Card 75

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.7.1 Identify and model the causes of night and day.
Earth Science Lab, Level A: Card 62 **Earth Science Lab, Level B:** Card 62

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.7.2 Compare and contrast Earth's day to those of other planets in our solar system.
Earth Science Lab, Level A: Cards 62, 69, 70, 71 **Earth Science Lab, Level B:** Cards 62, 69, 70, 71

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.7.3 Identify and model the cause of planetary years.
Earth Science Lab, Level A: Cards 62, 69, 70, 71 **Earth Science Lab, Level B:** Cards 62, 69, 70, 71

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.7.4 Compare and contrast Earth's year to those of other planets in our solar system. Calculate the rate at which we would have to travel to other stars and planets ion our solar system using current technology.
Earth Science Lab, Level A: Cards 62, 69, 70, 71, 74 **Earth Science Lab, Level B:** Cards 62, 69, 70, 71, 74

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.7.5 Identify and model the causes of seasons.
Earth Science Lab, Level A: Card 62 **Earth Science Lab, Level B:** Cards 62

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.7.6 Investigate careers, scientists, and historical breakthroughs related to rotations and revolutions of bodies in space.
Earth Science Lab, Level A: Cards 68, 70, 72 **Earth Science Lab, Level B:** Cards 68, 70, 72

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.7.7 Model moon phases demonstrating the position of earth, moon, and sun.
Earth Science Lab, Level A: Card 64 **Earth Science Lab, Level B:** Card 64

SRA Life, Earth, and Physical Science Laboratories
correlation to
Arkansas Science Curriculum Framework 2005
Grade 8

SRA Life, Earth, and Physical Science Laboratories provide core science content in an alternate reading format. Each *SRA Science Lab* contains 180 Science Cards covering key science concepts and vocabulary. Each lab covers 90 different science topics presented at two different reading levels to meet varied student abilities. The *Teacher's Handbook* includes hands-on inquiry activities as well as vocabulary building exercises. The *Classroom Resource CD-ROM* includes Writing Strategies in Science along with tests and vocabulary games.

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.8.1 Justify conclusions based on appropriate and unbiased observations.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 11

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.8.2 Evaluate the merits of empirical evidence based on experimental design: • **Hypothesis** • **Replication** • **Sample size** • **Appropriate use of control** • **Use of standardized independent and dependent variables.**
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 11

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.8.3 Formulate a testable problem using experimental design.
Life Science Lab Teacher's Handbook: Hands-On Activity 3, *Investigating Arthropods,* pages 85-87 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87 **Classroom Resource CD-ROM:** Writing Strategy 8, 15

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.8.4 Analyze a set of scientific data using mean, median, mode, and range using SI units.
Life Science Lab Teacher's Handbook: Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 3, *Energy Conversion,* pages 85-87

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.8.5 Suggest solutions to real world problems by analyzing scientific data in • **Data tables/charts** • **Histograms** • **Circle graphs** • **Scatter plots** • **Stem and leaf plots** • **Line and double line** • **Graphs by approximating line of best fit.**
Life Science Lab Teacher's Handbook: Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 3, *Energy Conversion,* pages 85-87

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Processes of Science
NS.1.8.6 Formulate inferences based on scientific data.
Life Science Lab Teacher's Handbook: Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 5, *Making Fossils,* pages 93-9 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Classroom Resource CD-ROM:** Writing Strategy 15, 17

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.8.7 Communicate results and conclusions from scientific inquiry following peer review.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 18

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.8.8 Develop and implement strategies for long-term accurate data collection.
Life Science Lab Teacher's Handbook: Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 22, 24

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.8.9 Generate questions that can and cannot be answered by science.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells,* pages 77-79; Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 3, *Investigating Arthropods,* pages 85-87; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 5, *Making Fossils,* pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale,* pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 4, *Using Sound Waves,* pages 85-87; Hands-On Activity 5, *What is in the Air?,* pages 89-91; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases,* pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83; Hands-On Activity 3, *Energy Conversion,* pages 85-87; Hands-On Activity 4, *Reducing Friction,* pages 89-91; Hands-On Activity 5, *Making a Potato Battery,* pages 93-95; Hands-On Activity 6, *Making Sound,* pages 97-99

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.8.10 Explain the role of peer review, evidence, and modification in the development of a theory.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells*, pages 77-79; Hands-On Activity 2, *Culturing Bacteria*, pages 81-83; Hands-On Activity 3, *Investigating Arthropods*, pages 85-87; Hands-On Activity 4, *Your Cardiovascular System*, pages 89-91; Hands-On Activity 5, *Making Fossils*, pages 93-95; Hands-On Activity 6, *How Much Does Energy Cost?*, pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain*, pages 101-103 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 1, *Identifying Minerals with the Mohs Scale*, pages 73-75; Hands-On Activity 2, *Plate Boundaries in Action*, pages 77-79; Hands-On Activity 3, *Interpreting a Topographic Map*, pages 81-83; Hands-On Activity 4, *Using Sound Waves*, pages 85-87; Hands-On Activity 5, *What is in the Air?*, pages 89-91; Hands-On Activity 6, *Modeling a Tornado*, pages 93-95; Hands-On Activity 7, *Sizes in the Solar System*, pages 97-99; Hands-On Activity 8, *Temperature, Salinity, and Water Density*, pages 101-103 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases*, pages 77-79; Hands-On Activity 2, *Chemical Reaction Rates*, pages 81-83; Hands-On Activity 3, *Energy Conversion*, pages 85-87; Hands-On Activity 4, *Reducing Friction*, pages 89-91; Hands-On Activity 5, *Making a Potato Battery*, pages 93-95; Hands-On Activity 6, *Making Sound*, pages 97-99

Strand 1: Nature of Science
Standard 1: Characteristics and Processes of Science: Students shall demonstrate and apply knowledge of the characteristics and processes of science using appropriate safety procedures, equipment, and technology.
Characteristics of Science
NS.1.8.11 Evaluate the merit of hypothesis, laws, and theories.
Life Science Lab, Level A: Cards 5, 65 **Life Science Lab, Level B:** Cards 5, 65 **Earth Science Lab, Level A:** Cards 10, 68, 72, 78 **Earth Science Lab, Level B:** Cards 10, 68, 72, 78 **Physical Science Lab, Level A:** Cards 3, 9, 37, 53, 55, 59, 63 **Physical Science Lab, Level B:** Cards 3, 9, 37, 53, 55, 59, 63

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.8.1 Illustrate the hierarchical relationships of cells, tissues, organs, organ systems, and organisms.
Life Science Lab, Level A: Card 44 **Life Science Lab, Level B:** Card 44

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.8.2 Identify different types of single-celled organisms: • **Protists** • **Bacteria.**
Life Science Lab, Level A: Cards 12, 13, 14 **Life Science Lab, Level B:** Cards 12, 13, 14 **Life Science Lab Teacher's Handbook:** Hands-On Activity

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.8.3 Relate the effect of bacteria on oral health.
Life Science Lab, Level A: Cards 12, 13 **Life Science Lab, Level B:** Cards 12, 13

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.8.4 Describe and illustrate single-celled organisms found in pond water.
Life Science Lab, Level A: Card 14 **Life Science Lab, Level B:** Card 14

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.8.5 Use a dichotomous key to classify organisms found in pond water.
Life Science Lab, Level A: Cards 2, 3, 14 **Life Science Lab, Level B:** Cards 2, 3, 14

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.8.6 Compare and contrast characteristics of unicellular organisms and multi-cellular organisms.
Life Science Lab, Level A: Cards 1, 3, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38,3 9, 40 **Life Science Lab, Level B:** Cards 1, 3, 6, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38,3 9, 40 **Life Science Lab Teacher's Handbook:** Hands-On Activity 1, *Examining Cells*, pages 77-79; Hands-On Activity 2, *Culturing Bacteria*, pages 81-83; Hands-On Activity 3, *Investigating Arthropods*, pages 85-87

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.8.7 Classify cells as eukaryotic or prokaryotic.
Life Science Lab, Level A: Card 3 **Life Science Lab, Level B:** Card 3

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.8.8 Identify and describe similarities and differences among organisms of different but related taxa (e.g., pine trees, big cats, rodents, ungulates).
Life Science Lab, Level A: Cards 2, 3 **Life Science Lab, Level B:** Cards 2, 3

Strand 2: Life Science
Standard 2: Living Systems: Characteristics, Structure, and Function: Students shall demonstrate and apply knowledge of living systems using appropriate safety procedures, equipment, and technology.
Structure and Function
LS.2.8.9 Investigate careers, scientists, and historical breakthroughs related to organisms.
Life Science Lab, Level A: Cards 2, 5 **Life Science Lab, Level B:** Cards 2, 5

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.1 Identify and explain why inherited characteristics of living things depend on genes.
Life Science Lab, Level A: Cards 62, 63 **Life Science Lab, Level B:** Cards 62, 63

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.2 Differentiate between dominant and recessive traits.
Life Science Lab, Level A: Cards 62, 63 **Life Science Lab, Level B:** Cards 62, 63

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.3 Observe and classify traits as dominant or recessive: • **Tongue rolling** • **Detached earlobes** • **Widow's peak** • **Hitchhiker's thumb** • **Dimples** • **Unibrow.**
Life Science Lab, Level A: Cards 62, 63 **Life Science Lab, Level B:** Cards 62, 63

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.4 Differentiate among observed inherited traits and acquired traits of plants and animals.
Life Science Lab, Level A: Cards 23, 24, 41, 43, 65 **Life Science Lab, Level B:** Cards 23, 24, 41, 43, 65

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.5 Interpret simple genetic crosses using Punnett Squares.
Life Science Lab, Level A: Card 63 **Life Science Lab, Level B:** Card 63

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.6 Predict patterns that emerge from simple genetic crosses.
Life Science Lab, Level A: Card 63 **Life Science Lab, Level B:** Card 63

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.7 Conduct investigations demonstrating that the phenotype of a genetic trait is the result of genotype.
Life Science Lab, Level A: Card 63 **Life Science Lab, Level B:** Card 63

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.8 Explain how genetic variation within a species is a result of dominant traits and recessive traits.
Life Science Lab, Level A: Cards 62, 63, 64 **Life Science Lab, Level B:** Cards 62, 63, 64

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.9 Compare and contrast patterns of embryological development for all vertebrates, including humans.
Life Science Lab, Level A: Cards 40, 68 **Life Science Lab, Level B:** Cards 40, 68

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.10 Distinguish between characteristics of plants and animals through selective breeding.
This concept is not covered at this level.

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.11 Investigate careers, scientists, and historical breakthroughs related to genetics.
Life Science Lab, Level A: Cards 64, 69 **Life Science Lab, Level B:** Cards 64, 69

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.12 Compare the theory of evolution to the characteristics of a scientific theory.
Life Science Lab, Level A: Cards 65, 66, 67, 68 **Life Science Lab, Level B:** Cards 65, 66, 67, 68

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.13 Identify basic ideas related to biological evolution: • **Diversity of species** • **Variations within species** • **Adaptations** • **Natural selection** • **Extinction of a species.**
Life Science Lab, Level A: Cards 65, 66, 67, 68, 86 **Life Science Lab, Level B:** Cards 65, 66, 67, 68, 86

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.14 Explain that the fossil record provides evidence of life forms' appearance, diversification, and extinction.
Life Science Lab, Level A: Cards 67, 68 **Life Science Lab, Level B:** Cards 67, 68 **Science Lab, Level A:** Card 74 **Science Lab, Level B:** Card 74

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.15 Explain the process of natural selection.
Life Science Lab, Level A: Cards 65, 66 **Life Science Lab, Level B:** Cards 65, 66

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.16 Identify genetic traits that make organisms more likely to survive and reproduce in a particular environment.
Life Science Lab, Level A: Cards 65, 66 **Life Science Lab, Level B:** Cards 65, 66

Strand 2: Life Science
Standard 3: Life Cycles, Reproduction, and Heredity: Students shall demonstrate and apply knowledge of life cycles, reproduction, and heredity using appropriate safety procedures, equipment, and technology.
Heredity and Reproduction
LS.3.8.17 Investigate careers, scientists, and historical breakthroughs related to natural selection and the fossil record.
Life Science Lab, Level A: Cards 66, 67, 68 **Life Science Lab, Level B:** Cards 66, 67, 68

Strand 2: Life Science
Standard 4: Populations and Ecosystems: Students shall demonstrate and apply knowledge of populations and ecosystems using appropriate safety procedures, equipment, and technology.
Populations and Ecosystems
LS.4.8.1 Analyze the effect of changes in environmental conditions on the survival of individual organisms and entire species.
Life Science Lab, Level A: Cards 67, 84, 86, 87, 88, 89, 90 **Life Science Lab, Level B:** Cards 67, 84, 86, 87, 88, 89, 90 **Life Science Lab Teacher's Handbook:** Hands-On Activity 7, *The Effects of Acid Rain*, pages 101-103 **Earth Science Lab, Level A:** Cards 37, 42, 59, 60, 61, 86 **Earth Science Lab, Level B:** Cards 37, 42, 59, 60, 61, 86 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 5, *What is in the Air?*, pages 89-91

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.8.1 Compare the atomic theory to the characteristics of a scientific theory.
Physical Science Lab, Level A: Card 3 **Physical Science Lab, Level B:** Card 3

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.8.2 Explain the structure of atoms.
Physical Science Lab, Level A: Cards 3, 21 **Physical Science Lab, Level B:** Cards 3, 21

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.8.3 Determine the number of protons, neutrons, and electrons in an atom.
Physical Science Lab, Level A: Cards 21, 22, 23, 24, 25 **Physical Science Lab, Level B:** Cards 21, 22, 23, 24, 25

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.8.4 Create atomic models of common elements.
Physical Science Lab, Level A: Card 21 **Physical Science Lab, Level B:** Card 21

Strand 3: Physical Science
Standard 5: Matter: Properties and Changes: Students shall demonstrate and apply knowledge of matter, including properties and changes, using appropriate safety procedures, equipment, and technology.
Properties of Matter
PS.5.8.5 Investigate scientists, careers, and historical breakthroughs related to the atomic theory.
Physical Science Lab, Level A: Cards 3, 7, 17 **Physical Science Lab, Level B:** Cards 3, 7, 17

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.8.1 Model how motion and forces change Earth's surface: • **Compression** • **Tension** • **Weathering** • **Erosion.**
Physical Science Lab, Level A: Cards 11, 12, 13, 14, 15, 16, 17, 22, 24, 25, 26, 27, 28 **Physical Science Lab, Level B:** Cards 11, 12, 13, 14, 15, 16, 17, 22, 24, 25, 26, 27, 28 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 2, *Chemical Reaction Rates*, pages 81-83

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.8.2 Conduct investigations demonstrating the field force (lines of force) in magnetic fields.
Physical Science Lab, Level A: Cards 74, 75 **Physical Science Lab, Level B:** Cards 74, 75

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.8.3 Design and conduct investigations applying variables affecting the strength of an electromagnet.
Physical Science Lab, Level A: Card 76 **Physical Science Lab, Level B:** Card 76

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.8.4 Analyze and compare the relationship between electricity and magnetism.
Physical Science Lab, Level A: Cards 74, 75, 76 **Physical Science Lab, Level B:** Cards 74, 75, 76

Strand 3: Physical Science
Standard 6: Motion and Forces: Students shall demonstrate and apply knowledge of motion and forces using appropriate safety procedures, equipment, and technology.
Motion and Forces
PS.6.8.5 Investigate careers, scientists, and historical breakthroughs related to motion and forces that change Earth's surface.
Physical Science Lab, Level A: Cards 10, 16 **Physical Science Lab, Level B:** Cards 10, 16

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.1 Construct open and closed electrical circuits: • **Series circuits** • **Parallel circuits.**
Physical Science Lab, Level A: Card 68 **Physical Science Lab, Level B:** Card 68

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.2 Describe and diagram open and closed series and parallel circuits.
Physical Science Lab, Level A: Card 68 **Physical Science Lab, Level B:** Card 68

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.3 Compare and contrast open and closed series circuits and parallel circuits.
Physical Science Lab, Level A: Card 68 **Physical Science Lab, Level B:** Card 68

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.4 Conduct investigations demonstrating the characteristics of a wave: • **Wavelength** • **Frequency** • **Speed** • **Amplitude.**
Physical Science Lab, Level A: Cards 77, 78 **Physical Science Lab, Level B:** Cards 77, 78

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.5 Conduct investigations of longitudinal and transverse waves to determine how they are different.
Physical Science Lab, Level A: Cards 77, 78 **Physical Science Lab, Level B:** Cards 77, 78

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.6 Explain how energy is transferred through waves: • **Seismic waves** • **Sound waves** • **Water waves** • **Electromagnetic waves.**
Earth Science Lab, Level A: Cards 16, 77, 79, 83 **Earth Science Lab, Level B:** Cards 16, 77, 79, 83

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.7 Describe how waves travel through different kinds of media.
Physical Science Lab, Level A: Cards 78, 79, 83, 87, 88 **Physical Science Lab, Level B:** Cards 78, 79, 83, 87, 88

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.8 Differentiate among reflection, refraction, and absorption of various types of waves.
Physical Science Lab, Level A: Cards 79, 81, 85, 86, 87, 88, 89, 90 **Physical Science Lab, Level B:** Cards 79, 81, 85, 86, 87, 88, 89, 90

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.9 Describe and diagram the electromagnetic spectrum.
Physical Science Lab, Level A: Cards 82, 83, 84, 85 **Physical Science Lab, Level B:** Cards 82, 83, 84, 85

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.10 Analyze the electromagnetic spectrum.
Physical Science Lab, Level A: Cards 82, 83, 84, 85 **Physical Science Lab, Level B:** Cards 82, 83, 84, 85

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.11 Investigate examples of real world uses of the electromagnetic spectrum.
Physical Science Lab, Level A: Cards 82, 83, 84, 85 **Physical Science Lab, Level B:** Cards 82, 83, 84, 85

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.12 Conduct investigations demonstrating the separation of white light into its spectrum using refraction.
Physical Science Lab, Level A: Cards 82, 85 **Physical Science Lab, Level B:** Cards 82, 85

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.13 Compare ways to transfer information: • **Sound** • **Light** • **Radio** • **Microwave energy.**
Physical Science Lab, Level A: Cards 79, 81, 83, 84 **Physical Science Lab, Level B:** Cards 79, 81, 83, 84

Strand 3: Physical Science
Standard 7: Energy and Transfer of Energy: Students shall demonstrate and apply knowledge of energy and transfer of energy using appropriate safety procedures, equipment, and technology.
Energy
PS.7.8.14 Investigate careers, scientists, and historical breakthroughs related to waves and the electromagnetic spectrum.
Physical Science Lab, Level A: Cards 81, 84, 90 **Physical Science Lab, Level B:** Cards 81, 84, 90

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.1 Analyze the causes and predict the consequences of global warming on the following: • **Weather** • **Temperature** • **Ocean water levels.**
Life Science Lab, Level A: Card 89 **Life Science Lab, Level B:** Card 89 **Earth Science Lab, Level A:** Cards59, 60, 61 **Earth Science Lab, Level B:** Cards 59, 60, 61

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.2 Investigate how global patterns of water currents influence local weather: • **Gulf Stream** • **Atlantic Currents** • **California Current.**
Earth Science Lab, Level A: Cards 54, 57, 87 **Earth Science Lab, Level B:** Cards 54, 57, 87

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.3 Conduct investigations to compare and contrast different landforms found on Earth: • **Mountains** • **Plateaus** • **Plains.**
Earth Science Lab, Level A: Cards 14, 21 **Earth Science Lab, Level B:** Cards 14, 21

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.4 Synthesize and model the result of both constructive and destructive forces on land forms: • **Deposition** • **Erosion** • **Weathering** • **Crustal deformation.**
Earth Science Lab, Level A: Cards 22, 24, 25, 26, 27, 28 **Earth Science Lab, Level B:** Cards 22, 24, 25, 26, 27, 28

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.5 Compare and contrast the different landforms caused by Earth's external forces: • **Plains** • **Canyons** • **Deltas** • **Valleys** • **Swamps.**
Earth Science Lab, Level A: Cards 21, 25 **Earth Science Lab, Level B:** Cards 21, 25

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.6 Research local, regional, and state landforms created by external forces on Earth: • **Gulf Coastal Plain** • **Arkansas River Valley** • **Mississippi Alluvial Plain, including the delta region** • **Crowley's Ridge.**
Earth Science Lab, Level A: Cards 21, 25 **Earth Science Lab, Level B:** Cards 21, 25

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.7 Use topographic maps to identify surface features of Earth.
Earth Science Lab, Level A: Cards 19, 20 **Earth Science Lab, Level B:** Cards 19, 20 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 3, *Interpreting a Topographic Map*, pages 81-83

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.8 Demonstrate an understanding of the agents of erosion: • **Gravity** • **Water** • **Ice** • **Wind** • **Animals, including humans.**
Earth Science Lab, Level A: Cards 24, 25, 26, 27, 28 **Earth Science Lab, Level B:** Cards 24, 25, 26, 27, 28

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.9 Using models of rivers, predict changes when variables, such as load, slope, amount of water, or the composition of a stream bed, are changed through erosion or deposition.
Earth Science Lab, Level A: Card 25 **Earth Science Lab, Level B:** Card 25

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.10 Explain how weathering and erosion affect the oceans' salinity.
Physical Science Lab, Level A: Card 87 **Physical Science Lab, Level B:** Card 87

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Structure and Properties
ESS.8.8.11 Investigate careers, scientists, and historical breakthroughs related to external forces that change the Earth.
Earth Science Lab, Level A: Card 20 **Earth Science Lab, Level B:** Card 20

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.8.12 Investigate the types of weathering involved in the breakdown of organic and inorganic components of Earth's surface.
Earth Science Lab, Level A: Card 22 **Earth Science Lab, Level B:** Card 22

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.8.13 Illustrate soil profiles.
Earth Science Lab, Level A: Card 23 **Earth Science Lab, Level B:** Card 23

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.8.14 Apply knowledge of soil profiles to local soil samples.
Earth Science Lab, Level A: Card 23 **Earth Science Lab, Level B:** Card 23

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.8.15 Investigate the formation of soil types.
Earth Science Lab, Level A: Cards 23, 29 **Earth Science Lab, Level B:** Cards 23, 29

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.8.16 Identify components of soil as inorganic or organic through investigations.
Earth Science Lab, Level A: Cards 23, 29 **Earth Science Lab, Level B:** Cards 23, 29

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.8.17 Explain the basic nutrients needed by plants that are present in soils: • **Nitrogen** • **Phosphorous** • **Potassium.**
Earth Science Lab, Level A: Card 23 **Earth Science Lab, Level B:** Card 23

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.8.18 Identify ways plants use organic and inorganic components in the soil.
Earth Science Lab, Level A: Cards 16, 17, 70, 78, 79 **Earth Science Lab, Level B:** Cards 16, 17, 70, 78, 79

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.8.19 Investigate and analyze the composition of a variety of soils.
Earth Science Lab, Level A: Cards 23, 29 **Earth Science Lab, Level B:** Cards 23, 29

Strand 4: Earth and Space Science
Standard 8: Earth Systems: Students shall demonstrate and apply knowledge of Earth's structure and properties using appropriate safety procedures, equipment, and technology.
Cycles
ESS.8.8.20 Conduct investigations on soil permeability.
Earth Science Lab, Level A: Cards 23, 29 **Earth Science Lab, Level B:** Cards 23, 29

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.8.1 Explain processes that have changed Earth's surface that have resulted from sudden events (e.g., earthquakes and volcanoes) and gradual changes (e.g., uplift, erosion, and weathering).
Earth Science Lab, Level A: Cards 11, 12, 13, 14, 15, 16, 17, 22, 24, 25, 26, 27, 28 **Earth Science Lab, Level B:** Cards 11, 12, 13, 14, 15, 16, 17, 22, 24, 25, 26, 27, 28 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.8.2 Analyze how rock sequences may be disturbed by the following: • **Erosion** • **Deposition** • **Igneous intrusion** • **Folding** • **Faulting** • **Uplifting.**
Earth Science Lab, Level A: Cards 9, 14, 15, 30 **Earth Science Lab, Level B:** Cards 9, 14, 15, 30

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.8.3 Explain how scientists determine the relative ages of fossils found in layers of sedimentary rock: • **Law of superposition** • **Law of cross-cutting.**
Earth Science Lab, Level A: Card 30 **Earth Science Lab, Level B:** Card 30

Strand 4: Earth and Space Science
Standard 9: Earth's History: Students shall demonstrate and apply knowledge of Earth's history using appropriate safety procedures, equipment, and technology.
Earth's History
ESS.9.8.4 Apply geologic laws of superposition and cross-cutting to determine the relative age of rock in a cross section.
Earth Science Lab, Level A: Card 30 **Earth Science Lab, Level B:** Card 30

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.8.1 Summarize the effects of gravity on bodies in space. Identify and model the causes of night and day.
Earth Science Lab, Level A: Cards 62, 68 **Earth Science Lab, Level B:** Cards 62, 68 **Physical Science Lab, Level A:** Cards 57, 59 **Physical Science Lab, Level B:** Cards 57, 59

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.8.2 Identify variables that affect the amount of gravitational force between two objects: • **Mass of the objects** • **Distance between the objects.**
Physical Science Lab, Level A: Cards 57, 59 **Physical Science Lab, Level B:** Cards 57, 59

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.8.3 Relate the effects of the moon's gravitational force on Earth's ocean tides.
Earth Science Lab, Level A: Cards 66, 90 **Earth Science Lab, Level B:** Cards 66, 90

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.8.4 Identify the causes of the following: • **High tides** • **Low tides** • **Spring tides** • **Neap tides.**
Earth Science Lab, Level A: Cards 66, 90 **Earth Science Lab, Level B:** Cards 66, 90

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.8.5 Define the terms galaxy and universe.
Earth Science Lab, Level A: Cards 74, 77, 78 **Earth Science Lab, Level B:** Cards 74, 77, 78

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.8.6 Illustrate the appearance of galaxies as seen through a telescope: • **Clarity** • **Shape.**
Earth Science Lab, Level A: Card 77 **Earth Science Lab, Level B:** Card 77

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.8.7 Compare and contrast the Milky Way Galaxy to other galaxies.
Earth Science Lab, Level A: Card 77 **Earth Science Lab, Level B:** Card 77

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.8.8 Illustrate the position of our solar system within the Milky Way Galaxy.
Earth Science Lab, Level A: Card 77 **Earth Science Lab, Level B:** Card 77

Strand 4: Earth and Space Science
Standard 10: Objects in the Universe: Students shall demonstrate and apply knowledge of objects in the universe using appropriate safety procedures, equipment, and technology.
Solar System: Sun, Earth, Moons, Planets, Galaxies
ESS.10.8.9 Investigate careers, scientists, and historical breakthroughs related to gravity, galaxies, and the universe.
Earth Science Lab, Level A: Cards 68, 70, 72, 78, 79, 80, 81 **Earth Science Lab, Level B:** Cards 68, 70, 72, 78, 79, 80, 81