

SRA Life, Earth, and Physical Science Laboratories
correlation to
Minnesota Academic Standards: Science
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.

I. HISTORY AND NATURE OF SCIENCE

A. Scientific World View

The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.

1. The student will distinguish between scientific evidence and personal opinion.

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

I. HISTORY AND NATURE OF SCIENCE

A. Scientific World View

The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.

2. The student will explain why scientists often repeat investigations to be sure of the results.

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

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I. HISTORY AND NATURE OF SCIENCE
A. Scientific World View
The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.
3. The student will recognize that scientists assume that the laws of nature are the same everywhere and that they are understandable and predictable.
Life Science Lab, Level A: Cards 5, 62, 63, 70, 76, 77, 78, 79 Life Science Lab, Level B: Cards 5, 62, 63, 70, 76, 77, 78, 79
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, 7, 9, 17, 37, 42, 43, 53, 55, 59, 78, 85 Physical Science Lab, Level B: Cards 3, 7, 9, 17, 37, 42, 43, 53, 55, 59, 78, 85

I. HISTORY AND NATURE OF SCIENCE
A. Scientific World View
The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.
4. The student will define scientific facts, laws, and theories.
Life Science Lab, Level A: Cards 5, 62, 63, 70, 76, 77, 78, 79 Life Science Lab, Level B: Cards 5, 62, 63, 70, 76, 77, 78, 79 Life Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87; Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab, Level A: Cards 10, 68, 72, 78 Earth Science Lab, Level B: Cards 10, 68, 72, 78 Earth Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i> , pages 73-75; Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79; Hands-On Activity 3, <i>Interpreting a Topographic Map</i> , pages 81-83; Hands-On Activity 4, <i>Using Sound Waves</i> , pages 85-87; Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91; Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
Physical Science Lab, Level A: Cards 3, 7, 9, 37, 42, 43, 53, 55, 59, 78, 85 Physical Science Lab, Level B: Cards 3, 7, 9, 37, 42, 43, 53, 55, 59, 78, 85 Physical Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i> , pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i> , pages 89-91; Hands-On Activity 5, <i>Making a Potato Battery</i> , pages 93-95; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will understand that scientific inquiry is used in systematic ways to investigate the natural world.
1. The student will identify questions that can be answered through scientific investigation and those that cannot.
<p>Life Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Examining Cells</i>, pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i>, pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i>, pages 85-87; Hands-On Activity 4, <i>Your Cardiovascular System</i>, pages 89-91; Hands-On Activity 5, <i>Making Fossils</i>, pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i>, pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i>, pages 101-103</p> <p>Earth Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i>, pages 73-75; Hands-On Activity 2, <i>Plate Boundaries in Action</i>, pages 77-79; Hands-On Activity 3, <i>Interpreting a Topographic Map</i>, pages 81-83; Hands-On Activity 4, <i>Using Sound Waves</i>, pages 85-87; Hands-On Activity 5, <i>What is in the Air?</i>, pages 89-91; Hands-On Activity 6, <i>Modeling a Tornado</i>, pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i>, pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i>, pages 101-103</p> <p>Physical Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i>, pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i>, pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i>, pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i>, pages 89-91; Hands-On Activity 5, <i>Making a Potato Battery</i>, pages 93-95; Hands-On Activity 6, <i>Making Sound</i>, pages 97-99</p> <p>Classroom Resource CD-ROM: Writing Strategy 15</p>

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will understand that scientific inquiry is used in systematic ways to investigate the natural world.
2. The student will distinguish among observation, prediction and inference.
<p>Life Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Examining Cells</i>, pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i>, pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i>, pages 85-87; Hands-On Activity 4, <i>Your Cardiovascular System</i>, pages 89-91; Hands-On Activity 5, <i>Making Fossils</i>, pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i>, pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i>, pages 101-103</p> <p>Earth Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i>, pages 73-75; Hands-On Activity 2, <i>Plate Boundaries in Action</i>, pages 77-79; Hands-On Activity 3, <i>Interpreting a Topographic Map</i>, pages 81-83; Hands-On Activity 4, <i>Using Sound Waves</i>, pages 85-87; Hands-On Activity 5, <i>What is in the Air?</i>, pages 89-91; Hands-On Activity 6, <i>Modeling a Tornado</i>, pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i>, pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i>, pages 101-103</p> <p>Physical Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i>, pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i>, pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i>, pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i>, pages 89-91; Hands-On Activity 5, <i>Making a Potato Battery</i>, pages 93-95; Hands-On Activity 6, <i>Making Sound</i>, pages 97-99</p> <p>Classroom Resource CD-ROM: Writing Strategy 11, 17, 18</p>

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will understand that scientific inquiry is used in systematic ways to investigate the natural world.
3. The student will use appropriate tools and Système International (SI) units for measuring length, time, mass, volume and temperature with suitable precision and accuracy.
Life Science Lab Teacher’s Handbook: Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i> , pages 73-75; Hands-On Activity 3, <i>Interpreting a Topographic Map</i> , pages 81-83; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
Physical Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i> , pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i> , pages 89-91; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99
Classroom Resource CD-ROM: Writing Strategy 15

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will understand that scientific inquiry is used in systematic ways to investigate the natural world.
4. The student will present and explain data and findings from controlled experiments using multiple representations including tables, graphs, physical models, and demonstrations.
Life Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87; Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i> , pages 73-75; Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79; Hands-On Activity 3, <i>Interpreting a Topographic Map</i> , pages 81-83; Hands-On Activity 4, <i>Using Sound Waves</i> , pages 85-87; Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91; Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
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Classroom Resource CD-ROM: Writing Strategy 16, 20, 22, 24

I. HISTORY AND NATURE OF SCIENCE
C. Scientific Enterprise
The student will know that science and technology are human efforts that both influence and are influenced by society.
1. The student will describe the types of questions asked, the products, and the methods of investigation used to distinguish science from technology.
Life Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87; Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
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Physical Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i> , pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i> , pages 89-91; Hands-On Activity 5, <i>Making a Potato Battery</i> , pages 93-95; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99

I. HISTORY AND NATURE OF SCIENCE
C. Scientific Enterprise
The student will know that science and technology are human efforts that both influence and are influenced by society.
2. The student will explain why scientists may work in teams or work alone, can collaborate and, at times, compete.
This concept is not covered at this level.

II. PHYSICAL SCIENCE
A. Structure of Matter
The student will understand that matter is made of small particles and this explains the properties of matter.
1. The student will know that there are more than 100 different elements with unique properties.
Physical Science Lab, Level A: Cards 10, 17, 18, 19, 20
Physical Science Lab, Level B: Cards 10, 17, 18, 19, 20

II. PHYSICAL SCIENCE
A. Structure of Matter
The student will understand that matter is made of small particles and this explains the properties of matter.
2. The student will use evidence to explain that matter is made of small particles called atoms or molecules which are too small to see.
Physical Science Lab, Level A: Cards 3, 4, 21
Physical Science Lab, Level B: Cards 3, 4, 21

II. PHYSICAL SCIENCE
A. Structure of Matter
The student will understand that matter is made of small particles and this explains the properties of matter.
3. The student will know that the mass of a substance remains constant whether it is together, in parts or in a different state.
Physical Science Lab, Level A: Card 2
Physical Science Lab, Level B: Card 2

II. PHYSICAL SCIENCE
A. Structure of Matter
The student will understand that matter is made of small particles and this explains the properties of matter.
4. The student will describe the states of matter in terms of the space between particles.
Physical Science Lab, Level A: Cards 5, 6, 7, 8, 42
Physical Science Lab, Level B: Cards 5, 6, 7, 8, 42

II. PHYSICAL SCIENCE
A. Structure of Matter
The student will understand that matter is made of small particles and this explains the properties of matter.
5. The student will distinguish between volume, mass and density.
Physical Science Lab, Level A: Card 2
Physical Science Lab, Level B: Card 2

II. PHYSICAL SCIENCE
A. Structure of Matter
The student will understand that matter is made of small particles and this explains the properties of matter.
6. The student will use the characteristic properties of density, melting point, boiling point and solubility to identify and distinguish mixtures and pure substances.
Physical Science Lab, Level A: Cards 2, 12, 13, 42
Physical Science Lab, Level B: Cards 2, 12, 13, 42

II. PHYSICAL SCIENCE
A. Structure of Matter
The student will understand that matter is made of small particles and this explains the properties of matter.
7. The student will know that atoms are the smallest unit of an element that maintains the characteristics of the element.
Physical Science Lab, Level A: Cards 3, 4, 12
Physical Science Lab, Level B: Cards 3, 4, 12

II. PHYSICAL SCIENCE
B. Chemical Reactions
The student will differentiate between chemical and physical changes.
1. The student will define chemical and physical changes.
Physical Science Lab, Level A: Cards 8, 9, 27, 28, 29, 30
Physical Science Lab, Level B: Cards 8, 9, 27, 28, 29, 30
Physical Science Lab Teacher's Handbook: Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83

II. PHYSICAL SCIENCE
B. Chemical Reactions
The student will differentiate between chemical and physical changes.
2. The student will observe that substances react chemically with other substances to form new substances with different characteristic properties.
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, <i>Chemical Reaction Rates</i> , pages 81-83

II. PHYSICAL SCIENCE
B. Chemical Reactions
The student will differentiate between chemical and physical changes.
3. The student will give examples and classify substances as mixtures or pure substances.
Physical Science Lab, Level A: Cards 10, 11, 12, 13
Physical Science Lab, Level B: Cards 10, 11, 12, 13

II. PHYSICAL SCIENCE
C. Energy Transformations
The student will understand that energy exists in many forms and can be transferred in many ways.
1. The student will compare and contrast heat, chemical, mechanical and electrical energy and identify transformations of energy from one form to another in everyday situations.
Physical Science Lab, Level A: Cards 34, 36, 37, 39, 40, 41, 42, 45, 46, 47, 48, 49, 66, 67, 70, 76, 77, 78, 79, 80, 82, 83
Physical Science Lab, Level B: Cards 34, 36, 37, 39, 40, 41, 42, 45, 46, 47, 48, 49, 66, 67, 70, 76, 77, 78, 79, 80, 82, 83
Physical Science Lab Teacher's Handbook: Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87; Hands-On Activity 5, <i>Making a Potato Battery</i> , pages 93-95; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99

II. PHYSICAL SCIENCE
C. Energy Transformations
The student will understand that energy exists in many forms and can be transferred in many ways.
2. The student will recognize that heat is transferred by convection, conduction, and radiation from warmer objects to cooler ones until both reach the same temperature.
Earth Science Lab, Level A: Cards 38, 57, 87
Earth Science Lab, Level B: Cards 38, 57, 87
Physical Science Lab, Level A: Cards 42, 43, 44
Physical Science Lab, Level B: Cards 42, 43, 44

II. PHYSICAL SCIENCE
C. Energy Transformations
The student will understand that energy exists in many forms and can be transferred in many ways.
3. The student will demonstrate that visible light from the sun or reflected by objects may be made up of a mixture of many different colors of light.
Physical Science Lab, Level A: Cards 82, 83, 85
Physical Science Lab, Level B: Cards 82, 83, 85

II. PHYSICAL SCIENCE
C. Energy Transformations
The student will understand that energy exists in many forms and can be transferred in many ways.
4. The student will recognize the relationship between light and heat.
Physical Science Lab, Level A: Cards 82, 83, 85, 86
Physical Science Lab, Level B: Cards 82, 83, 85, 86

II. PHYSICAL SCIENCE
C. Energy Transformations
The student will understand that energy exists in many forms and can be transferred in many ways.
5. The student will describe waves in terms of speed, frequency and wave length.
Physical Science Lab, Level A: Cards 77, 78, 79, 80
Physical Science Lab, Level B: Cards 77, 78, 79, 80
Physical Science Lab Teacher's Handbook: Hands-On Activity 6, <i>Making Sound</i> , pages 97-99

II. PHYSICAL SCIENCE
C. Energy Transformations
The student will understand that energy exists in many forms and can be transferred in many ways.
6. The student will recognize that vibrations such as sound and earthquakes move in waves and that waves move at different speeds in different materials.
Earth Science Lab, Level A: Card 16 Earth Science Lab, Level B: Card 16
Physical Science Lab, Level A: Cards 77, 78, 79, 80, 81, 87, 88 Physical Science Lab, Level B: Cards 77, 78, 79, 80, 81, 87, 88

II. PHYSICAL SCIENCE
D. Motion
The Student will describe the motion of objects.
1. The student will use a frame of reference to describe the position, speed, and acceleration of an object.
Physical Science Lab, Level A: Cards 50, 51, 52, 53 Physical Science Lab, Level B: Cards 50, 51, 52, 53

II. PHYSICAL SCIENCE
D. Motion
The Student will describe the motion of objects.
2. The student will measure and graph the positions and speed of an object.
Physical Science Lab, Level A: Card 52 Physical Science Lab, Level B: Card 52

II. PHYSICAL SCIENCE
D. Motion
The Student will describe the motion of objects.
3. The student will recognize that unbalanced forces acting on one object change the object's speed and/or direction.
Physical Science Lab, Level A: Cards 54, 55, 56, 58, 59 Physical Science Lab, Level B: Cards 54, 55, 56, 58, 59 Physical Science Lab Teacher's Handbook: Hands-On Activity 4, <i>Reducing Friction</i> , pages 89-91

II. PHYSICAL SCIENCE
E. Forces of Nature
The student will understand that a variety of forces govern the structure and motion of objects in the universe.
1. The student will know that electric currents and magnets can exert a force on certain objects and each other.
Physical Science Lab, Level A: Cards 66, 67, 68, 69, 71, 74, 75, 76 Physical Science Lab, Level B: Cards 66, 67, 68, 69, 71, 74, 75, 76

II. PHYSICAL SCIENCE
E. Forces of Nature
The student will understand that a variety of forces govern the structure and motion of objects in the universe.
2. The student will know that there are positive and negative charges and that like charges repel one another and opposite charges attract.
Physical Science Lab, Level A: Cards 66, 67, 74 Physical Science Lab, Level B: Cards 66, 67, 74

SRA Life, Earth, and Physical Science Laboratories
correlation to
Minnesota Academic Standards: Science
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.

I. HISTORY AND NATURE OF SCIENCE
A. Scientific World View
The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.
1. The student will recognize how scientific knowledge is subject to change as new evidence becomes available, or as new theories cause scientists to look at old observations differently.
Life Science Lab, Level A: Cards 2, 5, 46, 49, 59, 64, 69, 86, 87, 88, 89, 90 Life Science Lab, Level B: Cards 2, 5, 46, 49, 59, 64, 69, 86, 87, 88, 89, 90
Earth Science Lab, Level A: Cards 10, 16, 20, 31, 32, 42, 51, 54, 59, 60, 61, 68, 72, 78, 79, 80, 81, 88 Earth Science Lab, Level B: Cards 10, 16, 20, 31, 32, 42, 51, 54, 59, 60, 61, 68, 72, 78, 79, 80, 81, 88
Physical Science Lab, Level A: Cards 3, 7, 17, 33, 35, 53, 55, 59, 76, 81, 84, 90 Physical Science Lab, Level B: Cards 3, 7, 17, 33, 35, 53, 55, 59, 76, 81, 84, 90

I. HISTORY AND NATURE OF SCIENCE
A. Scientific World View
The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.
2. The student will explain natural phenomena by using appropriate physical, conceptual, and mathematical models.
Life Science Lab Teacher's Handbook: Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99
Earth Science Lab Teacher's Handbook: Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79; Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99
Physical Science Lab Teacher's Handbook: Hands-On Activity 5, <i>Making a Potato Battery</i> , pages 93-95; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99
Classroom Resource CD-ROM: Writing Strategy 20

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will design and conduct scientific investigations.
1. The student will formulate a testable hypothesis based on prior knowledge.
Life Science Lab Teacher's Handbook: Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87
Physical Science Lab Teacher's Handbook: Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87
Classroom Resource CD-ROM: Writing Strategy 8, 15

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will design and conduct scientific investigations.
2. The student will recognize that a variable is a condition that may influence the outcome of an investigation and know the importance of manipulating one variable at a time.
Life Science Lab Teacher’s Handbook: Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab Teacher’s Handbook: Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
Physical Science Lab Teacher’s Handbook: Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83
Classroom Resource CD-ROM: Writing Strategy 23

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will design and conduct scientific investigations.
3. The student will write a specific step-by-step procedure for a scientific investigation.
Classroom Resource CD-ROM: Writing Strategy 15

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will design and conduct scientific investigations.
4. The student will explain how classroom scientific investigations relate to established scientific principles.
Life Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87; Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i> , pages 73-75; Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79; Hands-On Activity 3, <i>Interpreting a Topographic Map</i> , pages 81-83; Hands-On Activity 4, <i>Using Sound Waves</i> , pages 85-87; Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91; Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
Physical Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i> , pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i> , pages 89-91; Hands-On Activity 5, <i>Making a Potato Battery</i> , pages 93-95; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99

I. HISTORY AND NATURE OF SCIENCE
C. Scientific Enterprise
The student will know that science and technology are human efforts that both influence, and are influenced by, society.
1. The student will give examples of the development of technology influencing scientific knowledge, and investigation and scientific knowledge influencing the development of technology.
Life Science Lab, Level A: Cards 5, 49, 59, 64, 69, 83 Life Science Lab, Level B: Cards 5, 49, 59, 64, 69, 83
Earth Science Lab, Level A: Cards 16, 20, 31, 51, 54, 70, 79, 80, 81, 88 Earth Science Lab, Level B: Cards 16, 20, 31, 51, 54, 70, 79, 80, 81, 88
Physical Science Lab, Level A: Cards 33, 35, 73, 76, 81, 84, 90 Physical Science Lab, Level B: Cards 33, 35, 72, 76, 81, 84, 90

I. HISTORY AND NATURE OF SCIENCE
D. Historic Perspectives
The student will understand how scientific discovery, culture, societal norms and technology have influenced one another in different time periods.
1. The student will cite examples of individuals throughout history who made discoveries and contributions in science and technology.
Life Science Lab, Level A: Cards 2, 5, 46, 59 Life Science Lab, Level B: Cards 2, 5, 46, 59
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, 7, 17, 55 Physical Science Lab, Level B: Cards 3, 7, 17, 55

I. HISTORY AND NATURE OF SCIENCE
D. Historic Perspectives
The student will understand how scientific discovery, culture, societal norms and technology have influenced one another in different time periods.
2. The student will cite examples of how culture influences scientific and technological advances.
This concept is not covered at this level.

IV. LIFE SCIENCE
A. Cells
The student will understand that all organisms are composed of cells that carry on the many functions needed to sustain life.
1. The student will know that cells are the fundamental units of life.
Life Science Lab, Level A: Cards 1, 5, 6, 7, 8, 9, 10 Life Science Lab, Level B: Cards 1, 5, 6, 7, 8, 9, 10 Life Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79

IV. LIFE SCIENCE
A. Cells
The student will understand that all organisms are composed of cells that carry on the many functions needed to sustain life.
2. The student will distinguish between single-cellular and multi-cellular organisms.
Life Science Lab, Level A: Cards 5, 6, 7, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 Life Science Lab, Level B: Cards 5, 6, 7, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 Life Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87

IV. LIFE SCIENCE
A. Cells
The student will understand that all organisms are composed of cells that carry on the many functions needed to sustain life.
3. The student will distinguish between plant and animal cells.
Life Science Lab, Level A: Cards 6, 7, 9 Life Science Lab, Level B: Cards 6, 7, 9 Life Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79

IV. LIFE SCIENCE
A. Cells
The student will understand that all organisms are composed of cells that carry on the many functions needed to sustain life.
4. The student will recognize that cells repeatedly divide for growth and repair.
Life Science Lab, Level A: Cards 10, 60
Life Science Lab, Level B: Cards 10, 60

IV. LIFE SCIENCE
A. Cells
The student will understand that all organisms are composed of cells that carry on the many functions needed to sustain life.
5. The student will recognize that cells convert energy from food for the production of molecules necessary for life, and for life processes including cell growth and cell division.
Life Science Lab, Level A: Cards 7, 9, 16, 17, 46
Life Science Lab, Level B: Cards 7, 9, 16, 17, 46

IV. LIFE SCIENCE
A. Cells
The student will understand that all organisms are composed of cells that carry on the many functions needed to sustain life.
6. The student will recognize that specialized cells in multi-cellular organisms perform specialized functions.
Life Science Lab, Level A: Cards 5, 6, 7, 8, 9, 10, 44, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58
Life Science Lab, Level B: Cards 5, 6, 7, 8, 9, 10, 44, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58
Life Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91

IV. LIFE SCIENCE
B. Diversity of Organisms
The student will understand that living systems, at every level of organization, demonstrate the complementary nature of structure and function.
1. The student will explain that individuals are composed of specialized cells, tissues, organs and organ systems that perform specialized functions.
Life Science Lab, Level A: Cards 5, 6, 7, 8, 9, 10, 44, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58
Life Science Lab, Level B: Cards 5, 6, 7, 8, 9, 10, 44, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58
Life Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91

IV. LIFE SCIENCE
B. Diversity of Organisms
The student will understand that living systems, at every level of organization, demonstrate the complementary nature of structure and function.
2. The student will recognize that an organism's body plan and its ability to regulate its internal environment enable it to make or find food, grow, and reproduce in a constantly changing environment.
Life Science Lab, Level A: Cards 1, 6, 7, 13, 16, 17, 20, 21, 22, 23, 24, 34, 36, 40, 41, 43, 73, 74, 75, 76, 77
Life Science Lab, Level B: Cards 1, 6, 7, 13, 16, 17, 20, 21, 22, 23, 24, 34, 36, 40, 41, 43, 73, 74, 75, 76, 77
Life Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87

IV. LIFE SCIENCE
B. Diversity of Organisms
The student will understand that living systems, at every level of organization, demonstrate the complementary nature of structure and function.
3. The student will recognize that behavioral responses of organisms may be determined by heredity and past experience.
Life Science Lab, Level A: Cards 24, 36, 43, 83 Life Science Lab, Level B: Cards 24, 36, 43, 83

IV. LIFE SCIENCE
B. Diversity of Organisms
The student will understand that living systems, at every level of organization, demonstrate the complementary nature of structure and function.
4. The student will use and create dichotomous keys.
Life Science Lab, Level A: Cards 2, 3, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 Life Science Lab, Level B: Cards 2, 3, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 Life Science Lab Teacher's Handbook: Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87

IV. LIFE SCIENCE
B. Diversity of Organisms
The student will understand that living systems, at every level of organization, demonstrate the complementary nature of structure and function.
5. The student will use the characteristics of an organism to identify the kingdom to which it belongs.
Life Science Lab, Level A: Cards 2, 3, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 Life Science Lab, Level B: Cards 2, 3, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40 Life Science Lab Teacher's Handbook: Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87

IV. LIFE SCIENCE
C. Interdependence of Life
The student will understand that within ecosystems, complex interactions exist between organisms and the physical environment.
1. The student will provide examples of the potentially irreversible effects of human activity on ecosystems.
Life Science Lab, Level A: Cards 84, 86, 87, 88, 89, 90 Life Science Lab, Level B: Cards 84, 86, 87, 88, 89, 90 Life Science Lab Teacher's Handbook: Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103 Earth Science Lab, Level A: Cards 35, 37, 42, 59, 60, 61, 86 Earth Science Lab, Level B: Cards 35, 37, 42, 59, 60, 61, 86 Earth Science Lab Teacher's Handbook: Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91

IV. LIFE SCIENCE
C. Interdependence of Life
The student will understand that within ecosystems, complex interactions exist between organisms and the physical environment.
2. The student will define a population as all individuals of a species that exist together at a given place and time.
Life Science Lab, Level A: Cards 70, 71, 72 Life Science Lab, Level B: Cards 70, 71, 72

IV. LIFE SCIENCE
C. Interdependence of Life
The student will understand that within ecosystems, complex interactions exist between organisms and the physical environment.
3. The student will define an ecosystem as all populations living together and the physical factors with which they interact.
Life Science Lab, Level A: Cards 70, 71, 72 Life Science Lab, Level B: Cards 70, 71, 72

IV. LIFE SCIENCE
C. Interdependence of Life
The student will understand that within ecosystems, complex interactions exist between organisms and the physical environment.
4. The student will explain the factors that affect the number and types of organisms an ecosystem can support, including available resources, abiotic and biotic factors and disease.
Life Science Lab, Level A: Cards 72, 73, 74, 75, 76, 77 Life Science Lab, Level B: Cards 72, 73, 74, 75, 76, 77

IV. LIFE SCIENCE
D. Heredity
The student will understand that heredity information is contained in genes which are inherited through both sexual and asexual reproduction.
1. The student will recognize that inherited traits result from information contained in genes, which are located on chromosomes of each cell.
Life Science Lab, Level A: Cards 10, 60, 61, 62, 63 Life Science Lab, Level B: Cards 10, 60, 61, 62, 63

IV. LIFE SCIENCE
D. Heredity
The student will understand that heredity information is contained in genes which are inherited through both sexual and asexual reproduction.
2. The student will recognize that each gene carries a single unit of information and can influence more than one trait.
Life Science Lab, Level A: Cards 62, 63, 64 Life Science Lab, Level B: Cards 62, 63, 64

IV. LIFE SCIENCE
D. Heredity
The student will understand that heredity information is contained in genes which are inherited through both sexual and asexual reproduction.
3. The student will explain how inherited traits can be determined by one or many genes.
Life Science Lab, Level A: Cards 62, 63, 64 Life Science Lab, Level B: Cards 62, 63, 64

IV. LIFE SCIENCE
D. Heredity
The student will understand that heredity information is contained in genes which are inherited through both sexual and asexual reproduction.
4. The student will comprehend that interactions with the environment affect some inherited traits.
Life Science Lab, Level A: Cards 64, 65, 66, 67 Life Science Lab, Level B: Cards 64, 65, 66, 67

IV. LIFE SCIENCE
D. Heredity
The student will understand that heredity information is contained in genes which are inherited through both sexual and asexual reproduction.
5. The student will comprehend that reproduction is essential for the continuation of a species.
Life Science Lab, Level A: Cards 1, 58, 60, 61, 67
Life Science Lab, Level B: Cards 1, 58, 60, 61, 67

IV. LIFE SCIENCE
D. Heredity
The student will understand that heredity information is contained in genes which are inherited through both sexual and asexual reproduction.
6. The student will compare and contrast the advantages and disadvantages of sexual and asexual reproduction.
Life Science Lab, Level A: Cards 60, 61
Life Science Lab, Level B: Cards 60, 61

IV. LIFE SCIENCE
E. Biological Populations Change Over Time
The student will understand how biological evolution provides a scientific explanation for the fossil record of ancient life forms, as well as for the striking similarities observed among the diverse species of living organisms.
1. The student will recognize extinction is a common event.
Life Science Lab, Level A: Cards 67, 86
Life Science Lab, Level B: Cards 67, 86
Earth Science Lab, Level A: Card 34
Earth Science Lab, Level B: Card 34

IV. LIFE SCIENCE
E. Biological Populations Change Over Time
The student will understand how biological evolution provides a scientific explanation for the fossil record of ancient life forms, as well as for the striking similarities observed among the diverse species of living organisms.
2. The student will describe how the fossil record documents the appearance and diversification of many life forms.
Life Science Lab, Level A: Card 67
Life Science Lab, Level B: Card 67
Life Science Lab Teacher's Handbook: Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95
Earth Science Lab, Level A: Cards 33, 34
Earth Science Lab, Level B: Cards 33, 34

IV. LIFE SCIENCE
E. Biological Populations Change Over Time
The student will understand how biological evolution provides a scientific explanation for the fossil record of ancient life forms, as well as for the striking similarities observed among the diverse species of living organisms.
3. The student will explain how biological adaptations in structure, function and behavior enhance the reproductive success and survival of a species in a particular environment.
Life Science Lab, Level A: Cards 23, 41, 64, 65, 66
Life Science Lab, Level B: Cards 23, 41, 64, 65, 66

IV. LIFE SCIENCE
E. Biological Populations Change Over Time
The student will understand how biological evolution provides a scientific explanation for the fossil record of ancient life forms, as well as for the striking similarities observed among the diverse species of living organisms.
4. The student will recognize that scientific evidence can be used to infer common ancestry among some organisms.
Life Science Lab, Level A: Cards 65, 66, 67, 68
Life Science Lab, Level B: Cards 65, 66, 67, 68

IV. LIFE SCIENCE
E. Biological Populations Change Over Time
The student will understand how biological evolution provides a scientific explanation for the fossil record of ancient life forms, as well as for the striking similarities observed among the diverse species of living organisms.
5. The student will explain how diversity of species develops through gradual processes over generations.
Life Science Lab, Level A: Cards 64, 65, 66, 67, 68
Life Science Lab, Level B: Cards 64, 65, 66, 67, 68

IV. LIFE SCIENCE
F. Flow of Matter and Energy
The student will understand how the flow of energy and the recycling of matter contribute to a stable ecosystem.
1. The student will know that plants use the energy in light to make sugars out of carbon dioxide and water.
Life Science Lab, Level A: Cards 7, 9, 16, 17, 76, 77
Life Science Lab, Level B: Cards 7, 9, 16, 17, 76, 77

IV. LIFE SCIENCE
F. Flow of Matter and Energy
The student will understand how the flow of energy and the recycling of matter contribute to a stable ecosystem.
2. The student will explain how energy is transferred through food chains and food webs in an ecosystem.
Life Science Lab, Level A: Cards 13, 16, 17, 73, 74, 75, 76, 77
Life Science Lab, Level B: Cards 13, 16, 17, 73, 74, 75, 76, 77
Life Science Lab Teacher's Handbook: Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99

IV. LIFE SCIENCE
F. Flow of Matter and Energy
The student will understand how the flow of energy and the recycling of matter contribute to a stable ecosystem.
3. The student will explain how the amount of useable energy available to organisms decreases as it passes through a food chain and/or food web.
Life Science Lab, Level A: Cards 76, 77
Life Science Lab, Level B: Cards 76, 77
Life Science Lab Teacher's Handbook: Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99

IV. LIFE SCIENCE
F. Flow of Matter and Energy
The student will understand how the flow of energy and the recycling of matter contribute to a stable ecosystem.
4. The student will know that the total amount of matter in a closed system remains the same as it is transferred between organisms and the physical environment even though its location or form changes.
Life Science Lab, Level A: Cards 13, 16, 17, 76, 77
Life Science Lab, Level B: Cards 13, 16, 17, 76, 77
Life Science Lab Teacher's Handbook: Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99

IV. LIFE SCIENCE
F. Flow of Matter and Energy
The student will understand how the flow of energy and the recycling of matter contribute to a stable ecosystem.
5. The student will compare and contrast predator/prey, parasite/host and producer/consumer/decomposer relationships.
Life Science Lab, Level A: Cards 73, 74, 75, 76, 77
Life Science Lab, Level B: Cards 73, 74, 75, 76, 77

IV. LIFE SCIENCE
G. Human Organisms
The student will understand human body systems and their relationship to disease.
1. The student will recognize that disease can be caused by genetics, infection by other organisms, exposure to environmental factors or a combination of these.
Life Science Lab, Level A: Cards 11, 12, 13, 14, 15, 45, 46, 47, 48, 49, 51, 53, 55
Life Science Lab, Level B: Cards 11, 12, 13, 14, 15, 45, 46, 47, 48, 49, 51, 53, 55

IV. LIFE SCIENCE
G. Human Organisms
The student will understand human body systems and their relationship to disease.
2. The student will identify risks associated with natural, chemical and biological hazards.
Life Science Lab, Level A: Cards 11, 12, 14, 15, 45, 46, 47, 49, 51, 53, 55, 87, 89, 90
Life Science Lab, Level B: Cards 11, 12, 14, 15, 45, 46, 47, 49, 51, 53, 55, 87, 89, 90
Life Science Lab Teacher's Handbook: Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab, Level A: Cards 37, 42, 59, 86
Earth Science Lab, Level B: Cards 37, 42, 59, 86
Earth Science Lab Teacher's Handbook: Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91

IV. LIFE SCIENCE
G. Human Organisms
The student will understand human body systems and their relationship to disease.
3. The student will describe the structure and function of systems for digestion, respiration, reproduction, circulation, excretion, movement, control and coordination and for protection from disease, in the human organism.
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, <i>Your Cardiovascular System</i> , pages 89-91

SRA Life, Earth, and Physical Science Laboratories
correlation to
Minnesota Academic Standards: Science
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.

I. HISTORY AND NATURE OF SCIENCE
A. Scientific World View
The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.
1. The student will explain and give examples of how science can be used to make informed ethical decisions by identifying likely consequences or particular actions.
This concept is not covered at this level.

I. HISTORY AND NATURE OF SCIENCE
A. Scientific World View
The student will understand that science is a way of knowing about the world that is characterized by empirical criteria, logical argument and skeptical review.
2. The student will explain the development, usefulness and limitations of scientific models in the explanation and prediction of natural phenomena.
Life Science Lab Teacher's Handbook: Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99
Earth Science Lab Teacher's Handbook: Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79; Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99
Physical Science Lab Teacher's Handbook: Hands-On Activity 5, <i>Making a Potato Battery</i> , pages 93-95; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99
Classroom Resource CD-ROM: Writing Strategy 20

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will understand that scientific inquiry is used by scientists to investigate the natural world in systematic ways.
1. The student will know that scientific investigations involve the common elements of systematic observations, the careful collection of relevant evidence, logical reasoning and innovation in developing hypotheses and explanations.
Life Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87; Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i> , pages 73-75; Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79; Hands-On Activity 3, <i>Interpreting a Topographic Map</i> , pages 81-83; Hands-On Activity 4, <i>Using Sound Waves</i> , pages 85-87; Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91; Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
Physical Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i> , pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i> , pages 89-91; Hands-On Activity 5, <i>Making a Potato Battery</i> , pages 93-95; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99
Classroom Resource CD-ROM: Writing Strategy 8, 15

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will understand that scientific inquiry is used by scientists to investigate the natural world in systematic ways.
2. The student will describe how scientists can conduct investigations in a simple system and make generalizations to more complex systems.
Life Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87; Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i> , pages 73-75; Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79; Hands-On Activity 3, <i>Interpreting a Topographic Map</i> , pages 81-83; Hands-On Activity 4, <i>Using Sound Waves</i> , pages 85-87; Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91; Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
Physical Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i> , pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i> , pages 89-91; Hands-On Activity 5, <i>Making a Potato Battery</i> , pages 93-95; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99
Classroom Resource CD-ROM: Writing Strategy 15

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will design and conduct scientific investigations.
1. The student will specify variables to be changed, controlled, and measured.
Life Science Lab Teacher’s Handbook: Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab Teacher’s Handbook: Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
Physical Science Lab Teacher’s Handbook: Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83
Classroom Resource CD-ROM: Writing Strategy 23

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will design and conduct scientific investigations.
2. The student will use sufficient trials and adequate sample size to ensure reliable data.
Life Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83
Earth Science Lab Teacher’s Handbook: Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91
Physical Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i> , pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i> , pages 89-91; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99
Classroom Resource CD-ROM: Writing Strategy 22, 24

I. HISTORY AND NATURE OF SCIENCE
B. Scientific Inquiry
The student will design and conduct scientific investigations.
3. The student will use appropriate technology and mathematics skills to access, gather, store, retrieve, and organize data.
Life Science Lab Teacher’s Handbook: Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87; Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i> , pages 73-75; Hands-On Activity 3, <i>Interpreting a Topographic Map</i> , pages 81-83; Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
Classroom Resource CD-ROM: Writing Strategy 8, 15

I. HISTORY AND NATURE OF SCIENCE
C. Scientific Enterprise
The student will know that science and technology are human efforts that both influence and are influenced by civilizations and cultures worldwide.
1. The student will evaluate the credibility and validity of scientific and technological information from various sources.
Life Science Lab Teacher’s Handbook: Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83
Classroom Resource CD-ROM: Writing Strategy 9, 25

I. HISTORY AND NATURE OF SCIENCE
D. Historic Perspectives
The student will understand how scientific discovery, culture, societal norms and technology have influenced one another in different time periods.
1. The student will relate personal experiences in scientific investigation to the experience of scientists throughout history.
Life Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Examining Cells</i> , pages 77-79; Hands-On Activity 2, <i>Culturing Bacteria</i> , pages 81-83; Hands-On Activity 3, <i>Investigating Arthropods</i> , pages 85-87; Hands-On Activity 4, <i>Your Cardiovascular System</i> , pages 89-91; Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95; Hands-On Activity 6, <i>How Much Does Energy Cost?</i> , pages 97-99; Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103
Earth Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i> , pages 73-75; Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79; Hands-On Activity 3, <i>Interpreting a Topographic Map</i> , pages 81-83; Hands-On Activity 4, <i>Using Sound Waves</i> , pages 85-87; Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91; Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95; Hands-On Activity 7, <i>Sizes in the Solar System</i> , pages 97-99; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103
Physical Science Lab Teacher’s Handbook: Hands-On Activity 1, <i>Measuring pH of Acids and Bases</i> , pages 77-79; Hands-On Activity 2, <i>Chemical Reaction Rates</i> , pages 81-83; Hands-On Activity 3, <i>Energy Conversion</i> , pages 85-87; Hands-On Activity 4, <i>Reducing Friction</i> , pages 89-91; Hands-On Activity 5, <i>Making a Potato Battery</i> , pages 93-95; Hands-On Activity 6, <i>Making Sound</i> , pages 97-99

I. HISTORY AND NATURE OF SCIENCE
D. Historic Perspectives
The student will understand how scientific discovery, culture, societal norms and technology have influenced one another in different time periods.
2. The student will cite examples of how science and technology contributed to changes in agriculture, manufacturing, sanitation, medicine, warfare, transportation, information processing or communication.
Life Science Lab, Level A: Cards 5, 49, 59, 64, 69, 83 Life Science Lab, Level B: Cards 5, 49, 59, 64, 69, 83
Earth Science Lab, Level A: Cards 16, 20, 31, 51, 54, 70, 79, 80, 81, 88 Earth Science Lab, Level B: Cards 16, 20, 31, 51, 54, 70, 79, 80, 81, 88
Physical Science Lab, Level A: Cards 33, 35, 72, 76, 81, 84, 90 Physical Science Lab, Level B: Cards 33, 35, 72, 76, 81, 84, 90

III. EARTH AND SPACE SCIENCE
A. Earth Structure and Processes
The student will identify Earth’s composition, structure and processes.
1. The student will explain how earthquakes, volcanoes, sea-floor spreading and mountain building are evidence of the movement of crustal plates.
Earth Science Lab, Level A: Cards 10, 11, 12, 13, 14, 15, 16, 17, 21, 88 Earth Science Lab, Level B: Cards 10, 11, 12, 13, 14, 15, 16, 17, 21, 88 Earth Science Lab Teacher’s Handbook: Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79

III. EARTH AND SPACE SCIENCE
A. Earth Structure and Processes
The student will identify Earth's composition, structure and processes.
2. The student will describe how features on the Earth's surface are created and constantly changing through a combination of slow and rapid processes of weathering, erosion, sediment deposition, landslides, volcanic eruptions and earthquakes.
Earth Science Lab, Level A: Cards 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 24, 25, 26, 27, 28 Earth Science Lab, Level B: Cards 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 24, 25, 26, 27, 28 Earth Science Lab Teacher's Handbook: Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79

III. EARTH AND SPACE SCIENCE
A. Earth Structure and Processes
The student will identify Earth's composition, structure and processes.
3. The student will describe the various processes and interactions of the rock cycle.
Earth Science Lab, Level A: Cards 6, 7, 8, 9 Earth Science Lab, Level B: Cards 6, 7, 8, 9

III. EARTH AND SPACE SCIENCE
A. Earth Structure and Processes
The student will identify Earth's composition, structure and processes.
4. The student will interpret successive layers of sedimentary rocks and their fossils to document the age and history of the Earth.
Life Science Lab, Level A: Card 67 Life Science Lab, Level B: Card 67 Life Science Lab Teacher's Handbook: Hands-On Activity 5, <i>Making Fossils</i> , pages 93-95 Earth Science Lab, Level A: Cards 7, 30, 31, 33, 34 Earth Science Lab, Level B: Cards 7, 30, 31, 33, 34

III. EARTH AND SPACE SCIENCE
A. Earth Structure and Processes
The student will identify Earth's composition, structure and processes.
5. The student will recognize that constructive and destructive Earth processes can affect the evidence of Earth's history.
Earth Science Lab, Level A: Cards 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 22, 24, 25, 26, 27, 28, 30, 32, 33, 34 Earth Science Lab, Level B: Cards 7, 9, 10, 11, 12, 13, 14, 15, 16, 17, 22, 24, 25, 26, 27, 28, 30, 32, 33, 34 Earth Science Lab Teacher's Handbook: Hands-On Activity 2, <i>Plate Boundaries in Action</i> , pages 77-79

III. EARTH AND SPACE SCIENCE
A. Earth Structure and Processes
The student will identify Earth's composition, structure and processes.
6. The student will classify and identify rocks and minerals using characteristics including but not limited to density, hardness, and streak.
Earth Science Lab, Level A: Cards 3, 4, 5, 6, 7, 8, 9 Earth Science Lab, Level B: Cards 3, 4, 5, 6, 7, 8, 9 Earth Science Lab Teacher's Handbook: Hands-On Activity 1, <i>Identifying Minerals with the Mohs Scale</i> , pages 73-75

III. EARTH AND SPACE SCIENCE
A. Earth Structure and Processes
The student will investigate the impact humans have on the environment.
1. The student will identify and research an environmental issue and evaluate its impact.
Life Science Lab, Level A: Cards 84, 85, 86, 87, 88, 89, 90 Life Science Lab, Level B: Cards 84, 85, 86, 87, 88, 89, 90 Life Science Lab Teacher's Handbook: Hands-On Activity 7, <i>The Effects of Acid Rain</i> , pages 101-103 Earth Science Lab, Level A: Cards 35, 37, 42, 59, 60, 61, 86 Earth Science Lab, Level B: Cards 35, 37, 42, 59, 60, 61, 86 Earth Science Lab Teacher's Handbook: Hands-On Activity 5, <i>What is in the Air?</i> , pages 89-91 Physical Science Lab, Level A: Cards 46, 47, 48, 49 Physical Science Lab, Level B: Cards 46, 47, 48, 49

III. EARTH AND SPACE SCIENCE
B. The Water Cycle, Weather and Climate
The student will investigate how the atmosphere interacts with the Earth system.
1. The student will define radiation, conduction and convection and explain their effects on weather and climate.
Earth Science Lab, Level A: Cards 38, 41, 45, 46, 47, 52, 53, 54, 55, 87 Earth Science Lab, Level B: Cards 38, 41, 45, 46, 47, 52, 53, 54, 55, 87 Earth Science Lab Teacher's Handbook: Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95

III. EARTH AND SPACE SCIENCE
B. The Water Cycle, Weather and Climate
The student will investigate how the atmosphere interacts with the Earth system.
2. The student will identify the forces that create currents and layers in the Earth's atmosphere and water systems.
Earth Science Lab, Level A: Cards 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49, 52, 53, 54, 55, 87 Earth Science Lab, Level B: Cards 36, 37, 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49, 52, 53, 54, 55, 87 Earth Science Lab Teacher's Handbook: Hands-On Activity 6, <i>Modeling a Tornado</i> , pages 93-95; Hands-On Activity 8, <i>Temperature, Salinity, and Water Density</i> , pages 101-103

III. EARTH AND SPACE SCIENCE
B. The Water Cycle, Weather and Climate
The student will investigate how the atmosphere interacts with the Earth system.
3. The student will describe the effect of Earth's rotation on the winds and ocean currents.
Earth Science Lab, Level A: Cards 39, 40, 41, 57, 58, 60, 61, 62, 66, 87, 90 Earth Science Lab, Level B: Cards 39, 40, 41, 57, 58, 60, 61, 62, 66, 87, 90

III. EARTH AND SPACE SCIENCE
B. The Water Cycle, Weather and Climate
The student will investigate how the atmosphere interacts with the Earth system.
4. The student will collect and use data to predict the weather.
Earth Science Lab, Level A: Cards 43, 44, 45, 46, 47, 48, 49, 50, 51 Earth Science Lab, Level B: Cards 43, 44, 45, 46, 47, 48, 49, 50, 51

III. EARTH AND SPACE SCIENCE
B. The Water Cycle, Weather and Climate
The student will investigate how the atmosphere interacts with the Earth system.
5. The student will identify the composition and structures 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, <i>What is in the Air?</i> , pages 89-91

III. EARTH AND SPACE SCIENCE
B. The Water Cycle, Weather and Climate
The student will investigate how the atmosphere interacts with the Earth system.
6. The student will describe climate changes that have occurred over time.
Earth Science Lab, Level A: Cards 17, 55, 56, 57, 58, 59, 60, 61
Earth Science Lab, Level B: Cards 17, 55, 56, 57, 58, 59, 60, 61

III. EARTH AND SPACE SCIENCE
C. The Universe
The student will compare objects in the solar system and explain their interactions with the Earth.
1. The student will recognize that the sun is the principal energy source for the solar system and that this energy is transferred in the form of radiation.
Earth Science Lab, Level A: Card 67
Earth Science Lab, Level B: Card 67
Physical Science Lab, Level A: Cards 42, 46, 82, 83
Physical Science Lab, Level B: Cards 42, 46, 82, 83

III. EARTH AND SPACE SCIENCE
C. The Universe
The student will compare objects in the solar system and explain their interactions with the Earth.
2. The student will explain how the combination of the Earth's tilted axis and revolution around the sun causes the progression of seasons and weather patterns.
Earth Science Lab, Level A: Cards 55, 62
Earth Science Lab, Level B: Cards 55, 62

III. EARTH AND SPACE SCIENCE
C. The Universe
The student will compare objects in the solar system and explain their interactions with the Earth.
3. The student will compare and contrast the planets, taking into account their composition, mass and distance from the sun and recognize the conditions that have allowed life to flourish on Earth.
Earth Science Lab, Level A: Cards 69, 70, 71, 72
Earth Science Lab, Level B: Cards 69, 70, 71, 72

III. EARTH AND SPACE SCIENCE
C. The Universe
The student will compare objects in the solar system and explain their interactions with the Earth.
4. The student will use the predictability of the motions of the Earth, and sun, to explain the length of day, length of year, phases of the moon, eclipses, tides, and shadows.
Earth Science Lab, Level A: Cards 62, 63, 64, 65, 66
Earth Science Lab, Level B: Cards 62, 63, 64, 65, 66

III. EARTH AND SPACE SCIENCE
C. The Universe
The student will describe the composition and structure of the universe.
1. The student will recognize that the universe consists of many billions of galaxies, each containing many billions of stars and that there are vast distances that separate these galaxies and stars from one another.
Earth Science Lab, Level A: Cards 74, 75, 77
Earth Science Lab, Level B: Cards 74, 75, 77

III. EARTH AND SPACE SCIENCE
C. The Universe
The student will describe the composition and structure of the universe.
2. The student will recognize that the sun is a medium-sized star and is the closest star to Earth. It is the central and largest body in the solar system and is one of billions of stars in the Milky Way Galaxy.
Earth Science Lab, Level A: Cards 67, 68, 75, 76, 77
Earth Science Lab, Level B: Cards 67, 68, 75, 76, 77