SRA Life, Earth, and Physical Science Laboratories
correlation to
North Dakota Science Content and Achievement Standards
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.

Standard 1: Unifying Concepts
Standard 1: Students understand the unifying concepts and processes of science.
MODELS
6.1.1. Construct a model to represent concepts, features, or phenomena in the real world (e.g., solar system, earth's interior).
Life Science Lab Teacher's Handbook: 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 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 6, *Modeling a Tornado,* pages 93-95; Hands-On Activity 7, *Sizes in the Solar System,* pages 97-99 **Physical Science Lab Teacher's Handbook:** 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 20

Standard 1: Unifying Concepts

Standard 1: Students understand the unifying concepts and processes of science.

SYSTEMS

6.1.2. Identify systems that are composed of subsystems (e.g., solar system, cell, ecosystems).

Life Science Lab, Level A: Cards 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90
Life Science Lab, Level B: Cards 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90
Life Science Lab Teacher's Handbook: Hands-On Activity 1, *Examining Cells*, pages 77-79; Hands-On Activity 4, *Your Cardiovascular System*, pages 89-91; 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, Level A: Cards 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90
Earth Science Lab, Level B: Cards 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90
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 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

Physical Science Lab, Level A: Cards 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90
Physical Science Lab, Level B: Cards 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90
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

Standard 1: Unifying Concepts

Standard 1: Students understand the unifying concepts and processes of science.

CONSTANCY AND CHANGE

6.1.3. Explain the connection between cause and effect in a system.

Life Science Lab Teacher's Handbook: Hands-On Activity 7, *The Effects of Acid Rain*, pages 101-103

Earth Science Lab Teacher's Handbook: Hands-On Activity 2, *Plate Boundaries in Action*, pages 77-79; Hands-On Activity 6, *Modeling a Tornado*, pages 93-95

Physical Science Lab Teacher's Handbook: Hands-On Activity 3, *Energy Conversion*, pages 85-87; Hands-On Activity 4, *Reducing Friction*, pages 89-91

Classroom Resource CD-ROM: Writing Strategy 20

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
UNDERSTANDINGS ABOUT SCIENTIFIC INQUIRY
6.2.1. Explain the components of a scientific investigation (e.g., hypothesis, observation, data collection, data interpretation, communication of results, replication).
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 8, 15

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
UNDERSTANDINGS ABOUT SCIENTIFIC INQUIRY
6.2.2. Select alternative methods of scientific investigations (e.g., Library, Internet, field work) to address different kinds of questions.
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

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
UNDERSTANDINGS ABOUT SCIENTIFIC INQUIRY
6.2.3. Identify biases that may affect data collection and analysis (e.g., gender, age, religion, economic, generational).
This concept is not covered at this level.

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
ABILITIES NECESSARY TO DO SCIENCE INQUIRY
6.2.4. Use appropriate tools and technology to gather and analyze data.
Life Science Lab Teacher's Handbook: 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 3, *Interpreting a Topographic Map*, pages 81-83; Hands-On Activity 5, *What is in the Air?*, pages 89-91; 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 6, *Making Sound*, pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 22, 24

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
ABILITIES NECESSARY TO DO SCIENCE INQUIRY
6.2.5. Use data from scientific investigations to determine relationships and patterns.
Life Science Lab Teacher's Handbook: 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 3, *Interpreting a Topographic Map*, pages 81-83; Hands-On Activity 5, *What is in the Air?*, pages 89-91; 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 6, *Making Sound*, pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 22, 24

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
PROPERTIES OF MATTER
6.3.1. Organize materials according to similar properties (e.g., physical, chemical).
Physical Science Lab, Level A: Cards 1, 2, 6, 7, 8, 9, 14, 15, 16, 42 **Physical Science Lab, Level B:** Cards 1, 2, 6, 7, 8, 9, 14, 15, 16, 42 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 1, *Measuring pH of Acids and Bases*, pages 77-79

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
FORCE AND MOTION
6.3.2. Use simple machines to change forces.
Physical Science Lab, Level A: Cards 63, 64 **Physical Science Lab, Level B:** Cards 63, 64

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
FORMS OF ENERGY
6.3.3. Identify different forms of energy (e.g., chemical, mechanical, heat, sound).
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 , *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

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
FORMS OF ENERGY
6.3.4. Identify sources of energy (e.g., sun, wind, moving water, nuclear, fossil fuels, food).
Life Science Lab, Level A: Cards 16, 17, 84, 89 **Life Science Lab, Level B:** Cards 16, 17, 84, 89 **Earth Science Lab, Level A:** Cards 35, 90 **Earth Science Lab, Level B:** Cards 35, 90 **Physical Science Lab, Level A:** Cards 34, 38, 45, 46, 47, 48, 49 **Physical Science Lab, Level B:** Cards 34, 38, 45, 46, 47, 48, 49

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
VIBRATIONS AND WAVES
6.3.5. Explain how vibrations create wavelike disturbances that spread out from the source.
Earth Science Lab, Level A: Card 16 **Earth Science Lab, Level B:** Card 16 **Physical Science Lab, Level A:** Cards 77, 78, 79, 80, 82, 83 **Physical Science Lab, Level B:** Cards 77, 78, 79, 80, 82, 83 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 6, *Making Sound*, pages 97-99

Standard 4: Life Science
Standard 4: Students understand the basic concepts and principles of life science.
STRUCTURE AND FUNCTION
6.4.1. Identify single- or multi-celled organisms.
Life Science Lab, Level A: Cards 6, 7, 8, 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 6, 7, 8, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 27, 28, 29, 30, 31, 32, 33,3 4, 35, 36, 37, 38, 39, 40 **Life Science Lab Teacher's Handbook:** Hands-On Activity , *Examining Cells*, pages 77-79; Hands-On Activity 2, *Culturing Bacteria*, pages 81-83; Hands-On Activity 3, *Investigating Arthropods*, pages 85-87

Standard 4: Life Science
Standard 4: Students understand the basic concepts and principles of life science.
GENETICS AND REPRODUCTION
6.4.2. Explain why reproduction is necessary for the continuation of the species (e.g., asexual, sexual).
Life Science Lab, Level A: Cards 58, 60, 61 **Life Science Lab, Level B:** Cards 58, 60, 61

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
WEATHER, SEASONS, AND CLIMATE
6.5.1. Identify adverse weather conditions and how humans prepare for them.
Earth Science Lab, Level A: Cards 52, 53, 54 **Earth Science Lab, Level B:** Cards 52, 53, 54 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 6, *Modeling a Tornado*, pages 93-95

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
CHARACTERISTICS OF THE EARTH
6.5.2. Explain how rocks are formed (e.g., melting, cooling, metamorphism, combinations of minerals).
Earth Science Lab, Level A: Cards 6, 7, 8, 9 **Earth Science Lab, Level B:** Cards 6, 7, 8, 9

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
CHARACTERISTICS OF THE EARTH
6.5.3. Describe the characteristics of the layers of the Earth (i.e., crust, mantle, core).
Earth Science Lab, Level A: Cards 1, 2, 88 **Earth Science Lab, Level B:** Cards 1, 2, 88

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
THE SOLAR SYSTEM
6.5.4. Identify the basic characteristics (e.g., composition, rings) of objects (e.g., planets, sun, small bodies) in the solar system.
Earth Science Lab, Level A: Cards 63, 67, 68, 69, 70, 71, 72, 73 **Earth Science Lab, Level B:** Cards 63, 67, 68, 69, 70, 71, 72, 73

Standard 6: Science and Technology
Standard 6: Students understand relations between science and technology.
TECHNOLOGICAL DESIGN
6.6.1. Identify examples of how technologies have evolved.
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, 68, 69, 70, 72, 73, 76, 81, 84, 90 **Physical Science Lab, Level B:** Cards 33, 35, 68, 69, 70, 72, 73, 76, 81, 84, 90

Standard 6: Science and Technology
Standard 6: Students understand relations between science and technology.
TECHNOLOGICAL DESIGN
6.6.2. Design a product or solution to a problem given restraints (e.g., limits of time, costs, materials and environmental factors).
This concept is not covered at this level.

Standard 6: Science and Technology
Standard 6: Students understand relations between science and technology.
TECHNOLOGICAL DESIGN
6.6.3. Explain the relationship between science and technology.
Life Science Lab, Level A: Cards 5, 49, 59, 64, 69, 83, 87, 88, 89, 90 **Life Science Lab, Level B:** Cards 5, 49, 59, 64, 69, 83, 87, 88, 89, 90 **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, 68, 69, 70, 72, 73, 76, 81, 84, 90 **Physical Science Lab, Level B:** Cards 33, 35, 68, 69, 70, 72, 73, 76, 81, 84, 90

Standard 7: Science and Other Areas
Standard 7: Students understand relations between science and personal, social, and environmental issues.
SCIENCE AND ENVIRONMENTAL ISSUES
6.7.1. Explain how natural hazards affect populations, resources, and the environment (e.g., floods, storms, hurricanes, volcanoes, earthquakes).
Life Science Lab, Level A: Cards 72, 80 **Life Science Lab, Level B:** Cards 72, 80 **Earth Science Lab, Level A:** Cards 15, 17, 52, 53, 54, 60 **Earth Science Lab, Level B:** Cards 15, 17, 52, 53, 54, 60 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 6, *Modeling a Tornado*, pages 93-95

Standard 7: Science and Other Areas
Standard 7: Students understand relations between science and personal, social, and environmental issues.
SCIENCE AND ENVIRONMENTAL ISSUES
6.7.2. Explain how recycling and conservation affect populations, resources, and the environment.
Life Science Lab, Level A: Cards 84, 85, 87, 88, 89, 90 **Life Science Lab, Level B:** Cards 84, 85, 87, 88, 89, 90 **Earth Science Lab, Level A:** Cards 29, 35, 37, 59, 60, 61, 90 **Earth Science Lab, Level B:** Cards 29, 35, 37, 59, 60, 61, 90 **Physical Science Lab, Level A:** Cards 38, 46, 47, 48, 49 **Physical Science Lab, Level B:** Cards 38, 46, 47, 48, 49

Standard 8: History and Nature of Science
Standard 8: Students understand the history and nature of Science
PEOPLE IN SCIENCE
6.8.1. Identify various settings in which scientists may work alone or in a team (e.g., industries, laboratories, field work).
This concept is not covered at this level.

Standard 8: History and Nature of Science
Standard 8: Students understand the history and nature of Science
SCIENTIFIC KNOWLEDGE
6.8.2. Identify scientific advances that have resulted in new ideas and further advance.
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 **Earth Science Lab, Level B:** Cards 16, 20, 31, 51, 54, 70, 79, 80, 81 **Physical Science Lab, Level A:** Cards 33, 35, 72, 73, 76, 81, 84, 90 **Physical Science Lab, Level B:** Cards 33, 35, 72, 73, 76, 81, 84, 90

SRA Life, Earth, and Physical Science Laboratories
correlation to
North Dakota Science Content and Achievement Standards
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.

Standard 1: Unifying Concepts
Standard 1: Students understand the unifying concepts and processes of science.
MODELS
7.1.1. Explain how models can be used to illustrate scientific principles (e.g., osmosis, cell division).
Life Science Lab Teacher's Handbook: 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 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 6, *Modeling a Tornado*, pages 93-95; Hands-On Activity 7, *Sizes in the Solar System*, pages 97-99 **Physical Science Lab Teacher's Handbook:** 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 20

Standard 1: Unifying Concepts
Standard 1: Students understand the unifying concepts and processes of science.
SYSTEMS
7.1.2. Identify the components (e.g., tissues, organs, living and nonliving things) within a system (e.g., body systems, ecosystems).
Life Science Lab, Level A: Cards 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90 **Life Science Lab, Level B:** Cards 1, 2, 3, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90 **Life Science Lab Teacher's Handbook:** Hands-On Activity 1, *Examining Cells*, pages 77-79; Hands-On Activity 4, *Your Cardiovascular System*, pages 89-91; 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, Level A:** Cards 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90 **Earth Science Lab, Level B:** Cards 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90 **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 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 **Physical Science Lab, Level A:** Cards 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90 **Physical Science Lab, Level B:** Cards 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90 **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

Standard 1: Unifying Concepts
Standard 1: Students understand the unifying concepts and processes of science.
CONSTANCY AND CHANGE
7.1.3. Identify examples of feedback mechanisms (e.g., hunger, perspiring).
Life Science Lab, Level A: Cards 47, 48, 51, 55, 57 **Life Science Lab, Level B:** Cards 47, 48, 51, 55, 57 **Physical Science Lab, Level A:** Cards 29, 69, 71 **Physical Science Lab, Level B:** Cards 29, 69, 71

Standard 1: Unifying Concepts
Standard 1: Students understand the unifying concepts and processes of science.
FORM AND FUNCTION
7.1.4. Identify the relationship between form and function (e.g., wings, fins and feet).
Life Science Lab, Level A: Cards 5, 59 **Life Science Lab, Level B:** Cards 5, 59 **Earth Science Lab, Level A:** Card 81 **Earth Science Lab, Level B:** Card 81 **Physical Science Lab, Level A:** Cards 35, 63, 64, 76, 87, 90 **Physical Science Lab, Level B:** Cards 35, 63, 64, 76, 87, 90

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
UNDERSTANDINGS ABOUT SCIENTIFIC INQUIRY
7.2.1. Communicate the results of scientific investigations using an appropriate format (e.g., journals, lab reports, diagrams, presentations, discussions).
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 1-30

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
ENERGY TRANSFER AND TRANSFORMATION
7.3.1. Explain how forms of energy can be transferred (e.g., photosynthesis, metabolism, battery).
Life Science Lab, Level A: Cards 13, 16, 17, 50, 76, 77 **Life Science Lab, Level B:** Cards 13, 16, 17, 50, 76, 77 **Life Science Lab Teacher's Handbook:** Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99 **Earth Science Lab, Level A:** Cards 16, 35, 38, 39, 40, 41, 45, 46, 47, 53, 54, 55, 87 **Earth Science Lab, Level B:** Cards 16, 35, 38, 39, 40, 41, 45, 46, 47, 53, 54, 55, 87 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 2, *Plate Boundaries in Action,* pages 77-79; Hands-On Activity 6, *Modeling a Tornado,* pages 93-95 **Physical Science Lab, Level A:** Cards 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 66, 67, 70, 76, 77, 78, 79, 80, 82, 83 **Physical Science Lab, Level B:** Cards 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 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, *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

Standard 4: Life Science
Standard 4: Students understand the basic concepts and principles of life science.
STRUCTURE AND FUNCTION
7.4.1. Explain the functions of the cell (e.g., growth, metabolism, reproduction, photosynthesis, response).
Life Science Lab, Level A: Cards 5, 6, 7, 8, 9, 10 **Life Science Lab, Level B:** Cards 5, 6, 7, 8, 9, 10 **Life Science Lab Teacher's Handbook:** Hands-On Activity 1, *Examining Cells*, pages 77-79

Standard 4: Life Science
Standard 4: Students understand the basic concepts and principles of life science.
STRUCTURE AND FUNCTION
7.4.2. Identify levels of organization in living systems (e.g., cells, tissues, organs, organ systems, organisms, ecosystems).
Life Science Lab, Level A: Cards 5, 6, 7, 8, 9, 10, 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, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 70, 71, 72, 73, 74, 75, 76, 77 **Life Science Lab, Level B:** Cards 5, 6, 7, 8, 9, 10, 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, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 70, 71, 72, 73, 74, 75, 76, 77 **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 6, *How Much Does Energy Cost?*, pages 97-99

Standard 4: Life Science
Standard 4: Students understand the basic concepts and principles of life science.
GENETICS AND REPRODUCTION
7.4.3. Identify the characteristics of reproduction (e.g., asexual, sexual).
Life Science Lab, Level A: Cards 58, 60, 61, 62, 63, 64 **Life Science Lab, Level B:** Cards 58, 60, 61, 62, 63, 64

Standard 4: Life Science
Standard 4: Students understand the basic concepts and principles of life science.
INTERDEPENDENCE AMONG ORGANISMS
7.4.4. Identify interactions among organisms and their environment (e.g., competition, mutualism, predator/prey, consumers, producers).
Life Science Lab, Level A: Cards 13, 70, 71, 72, 73, 74, 75, 76, 77 **Life Science Lab, Level B:** Cards 13, 70, 71, 72, 73, 74, 75, 76, 77 **Life Science Lab Teacher's Handbook:** Hands-On Activity 6, *How Much Does Energy Cost?*, pages 97-99

Standard 4: Life Science
Standard 4: Students understand the basic concepts and principles of life science.
DIVERSITY AND UNITY AMONG ORANISMS
7.4.5. Classify organisms (e.g., taxonomic groups).
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, *Culturing Bacteria*, pages 81-83; Hands-On Activity 3, *Investigating Arthropods*, pages 85-87

Standard 4: Life Science
Standard 4: Students understand the basic concepts and principles of life science.
DIVERSITY AND UNITY AMONG ORANISMS
7.4.6. Explain how different adaptations help organisms survive.
Life Science Lab, Level A: Cards 23, 24, 36, 41, 43, 83 **Life Science Lab, Level B:** Cards 23, 24, 36, 41, 43, 83

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
WEATHER, SEASONS, AND CLIMATE
7.5.1. Identify the factors (e.g., latitude, altitude, mountains, bodies of water) that affect the Earth's climate.
Earth Science Lab, Level A: Cards 55, 56, 57, 58, 60, 87 **Earth Science Lab, Level B:** Cards 55, 56, 57, 58, 60, 87

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
WEATHER, SEASONS, AND CLIMATE
7.5.2. Explain how seasons affect organisms (e.g., hibernation, photoperiodism, migration).
Life Science Lab, Level A: Cards 24, 26, 43, 83 **Life Science Lab, Level B:** Cards 24, 36, 43, 83

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
CHARACTERISTICS OF THE EARTH
7.5.3. Identify the Earth's renewable and nonrenewable resources (e.g., solar, wind, fossil fuels, water, soil, metals).
Life Science Lab, Level A: Cards 84, 85, 87, 88, 89, 90 **Life Science Lab, Level B:** Cards 84, 85, 87, 88, 89, 90 **Earth Science Lab, Level A:** Cards 3, 5, 29, 35, 36, 85, 90 **Earth Science Lab, Level B:** Cards 3, 5, 29, 35, 36, 85, 90 **Physical Science Lab, Level A:** Cards 38, 46, 47, 48, 49 **Physical Science Lab, Level B:** Cards 38, 46, 47, 48, 49

Standard 6: Science and Technology
Standard 6: Students understand relations between science and technology.
TECHNOLOGY AND SOCIETY
7.6.1. Identify ways in which technology has influenced the course of history and improved the quality of life.
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, 68, 69, 70, 72, 73, 76, 81, 84, 90 **Physical Science Lab, Level B:** Cards 33, 35, 68, 69, 70, 72, 73, 76, 81, 84, 90

Standard 6: Science and Technology
Standard 6: Students understand relations between science and technology.
TECHNOLOGY AND SOCIETY
7.6.2. Identify technologies (e.g., communication, agriculture, information processing, transportation) that are influenced by societies.
Life Science Lab, Level A: Cards 5, 49, 59, 64, 69, 83, 87, 88, 89, 90 **Life Science Lab, Level B:** Cards 5, 49, 59, 64, 69, 83, 87, 88, 89, 90 **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, 68, 69, 70, 72, 73, 76, 81, 84, 90 **Physical Science Lab, Level B:** Cards 33, 35, 68, 69, 70, 72, 73, 76, 81, 84, 90

Standard 6: Science and Technology
Standard 6: Students understand relations between science and technology.
TECHNOLOGY AND SOCIETY
7.6.3. Identify intended benefits and unintended consequences that result from the development and use of technologies.
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, 68, 69, 70, 72, 73, 76, 81, 84, 90 **Physical Science Lab, Level B:** Cards 33, 35, 68, 69, 70, 72, 73, 76, 81, 84, 90

Standard 7: Science and Other Areas
Standard 7: Students understand relations between science and personal, social, and environmental issues.
SCIENCE AND PERSONAL HEALTH
7.7.1. Explain how science affects personal health (e.g., injury prevention, immunization, organ transplant, medical scanning devices).
Life Science Lab, Level A: Cards 13, 45, 46, 47, 49, 64, 69 **Life Science Lab, Level B:** Cards 13, 45, 46, 47, 49, 64, 69 **Physical Science Lab, Level A:** Cards 81, 87, 90 **Physical Science Lab, Level B:** Cards 81, 87, 90

Standard 7: Science and Other Areas
Standard 7: Students understand relations between science and personal, social, and environmental issues.
SCIENCE AND PERSONAL HEALTH
7.7.2. Identify the factors (e.g., pollution, heredity, diet, virus, bacteria, parasite) that may result in disease.
Life Science Lab, Level A: Cards 11, 12, 13, 14, 15, 46, 47, 49, 51, 53, 55, 57, 87, 89, 90 **Life Science Lab, Level B:** Cards 11, 12, 13, 14, 15, 46, 47, 49, 51, 53, 55, 57, 87, 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 **Earth Science Lab, Level B:** Cards 37, 42 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 5, *What is in the Air?,* pages 89-91

Standard 7: Science and Other Areas
Standard 7: Students understand relations between science and personal, social, and environmental issues.
SCIENCE AND ENVIRONMENTAL ISSUES
7.7.3. Explain how overpopulation affects organisms, resources, and environments (e.g., depletion of food resources, habitat availability, increased loss due to disease, parasites, and predators.
Life Science Lab, Level A: Cards 72, 86 **Life Science Lab, Level B:** Cards 72, 867

Standard 7: Science and Other Areas
Standard 7: Students understand relations between science and personal, social, and environmental issues.
SCIENCE AND SOCIAL ISSUES
7.7.4. Explain the impact of science on food technology (e.g., preservatives, packaging, genetically modified organisms).
Life Science Lab, Level A: Cards 46, 69 **Life Science Lab, Level B:** Cards 46, 69

Standard 8: History and Nature of Science
Standard 8: Students understand the history and nature of Science
PEOPLE IN SCIENCE
7.8.1. Explain how science is influenced by human qualities (e.g., reasoning, insightfulness, creativity, life-long learning).
This concept is not covered at this level.

Standard 8: History and Nature of Science
Standard 8: Students understand the history and nature of Science
SCIENTIFIC KNOWLEDGE
7.8.2. Explain the importance of keeping clear and accurate records of scientific investigations (e.g., Darwin's research, DaVinci's notebooks, Galileo's notes, Goodall's 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

SRA Life, Earth, and Physical Science Laboratories
correlation to
North Dakota Science Content and Achievement Standards
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.

Standard 1: Unifying Concepts
Standard 1: Students understand the unifying concepts and processes of science.
SYSTEMS
8.1.1. Organize changes (e.g., patterns, cycles) that occur sequentially in systems.
Life Science Lab, Level A: Cards 22, 42, 76, 78, 79, 80 **Life Science Lab, Level B:** Cards 22, 42, 76, 78, 89, 80 **Earth Science Lab, Level A:** Cards 9, 47, 62, 64, 65, 66 **Earth Science Lab, Level B:** Cards 9, 47, 62, 64, 65, 66 **Physical Science Lab, Level A:** Cards 6, 68 **Physical Science Lab, Level B:** Cards 6, 68

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
UNDERSTANDINGS ABOUT SCIENTIFIC INQUIRY
8.2.1. Explain how science advances through legitimate skepticism.
This concept is not covered at this level.

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
ABILITIES NECESSARY TO DO SCIENTIFIC INQUIRY
8.2.2. Use evidence to generate descriptions, explanations, predictions, and models.
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

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
ABILITIES NECESSARY TO DO SCIENTIFIC INQUIRY
8.2.3. Use basic mathematics and statistics (e.g., operations, mean, median, mode, range, and estimation) to interpret quantitative data.
Life Science Lab Teacher's Handbook: 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 3, *Interpreting a Topographic Map,* pages 81-83; Hands-On Activity 5, *What is in the Air?,* pages 89-91; 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 6, *Making Sound,* pages 97-99 **Classroom Resource CD-ROM:** Writing Strategy 22, 24

Standard 2: Science Inquiry
Standard 2: Students use the process of science inquiry.
ABILITIES NECESSARY TO DO SCIENTIFIC INQUIRY
8.2.4. Design and conduct a scientific investigation (e.g., making systematic observations, making accurate measurements, identifying and controlling 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 8, 15

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
PROPERTIES OF MATTER
8.3.1. Identify elements and compounds.
Physical Science Lab, Level A: Cards 10, 11, 17, 18, 19, 20, 31, 32 **Physical Science Lab, Level B:** Cards 10, 11, 17, 18, 19, 20, 31, 32

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
PROPERTIES OF MATTER
8.3.2. Explain the relationship between phases of matter and temperature.
Physical Science Lab, Level A: Cards 5, 6, 7, 8, 42 **Physical Science Lab, Level B:** Cards 5, 6, 7, 8, 42

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
FORCE AND MOTION
8.3.3. Interpret the effect of balanced and unbalanced forces on the motion of an object (e.g., convection currents, orbital motion, tides).
Physical Science Lab, Level A: Cards 54, 55, 56, 57, 58, 59 **Physical Science Lab, Level B:** Cards 54, 55, 56, 57, 58, 59 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 4, *Reducing Friction*, pages 89-91

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
FORCE AND MOTION
8.3.4. Explain how all objects exert gravitational force and this force is affected by the distance between the masses of the objects.
Physical Science Lab, Level A: Cards 57, 59 **Physical Science Lab, Level B:** Cards 57, 59

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
ENERGY TRANSFER AND TRANSFORMATION
8.3.5. Identify when heat can be transferred by conduction, convection, or radiation.
Earth Science Lab, Level A: Cards 38, 67, 87 **Earth Science Lab, Level B:** Cards 38, 67, 87 **Physical Science Lab, Level A:** Cards 43, 44, 46 **Physical Science Lab, Level B:** Cards 43, 44, 46

Standard 3: Physical Science
Standard 3: Students understand the basic concepts and principles of physical Science.
VIBRATIONS AND WAVES
8.3.6. Explain the characteristic properties (e.g., wavelength, frequency) and behaviors (e.g., reflection, refraction) of waves.
Earth Science Lab, Level A: Card 16 **Earth Science Lab, Level B:** Card 16 **Physical Science Lab, Level A:** Cards 77, 78, 79, 80, 82, 83 **Physical Science Lab, Level B:** Cards 77, 78, 79, 80, 82, 83

Standard 4: Life Science
Standard 4: Students understand the basic concepts and principles of life science.
NATURAL SECLECTION AND BIOLOGICAL EVOLUTION
8.4.1. Identify the evidence of biological evolution (e.g., adaptation, radiation, extinction) as found in the fossil record.
Life Science Lab, Level A: Cards 65, 66, 67, 68 **Life Science Lab, Level B:** Cards 65, 66, 67, 68 **Earth Science Lab, Level A:** Cards 30, 31, 32, 33, 34 **Earth Science Lab, Level B:** Cards 30, 31, 32, 33, 34

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
WEATHER, SEASONS, AND CLIMATE
8.5.1. Explain how factors (i.e., fronts, winds, air masses, air pressure, humidity, temperature, location) affect weather.
Earth Science Lab, Level A: Cards 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49 **Earth Science Lab, Level B:** Cards 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
GEOLOGIC PROCESSES
8.5.2. Understand the rock cycle.
Earth Science Lab, Level A: Cards 6, 7, 8, 9 **Earth Science Lab, Level B:** Cards 6, 7, 8, 9

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
GEOLOGIC PROCESSES
8.5.3. Explain the water cycle.
Earth Science Lab, Level A: Cards 47, 48, 49 **Earth Science Lab, Level B:** Cards 47, 48, 49

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
GEOLOGIC PROCESSES
8.5.4. Explain how landforms are changed (e.g., crustal deformation, volcanic eruption, deposition, weathering, erosion).
Earth Science Lab, Level A: Cards 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 24, 25, 26, 27, 28, 88 **Earth Science Lab, Level B:** Cards 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 24, 25, 26, 27, 28, 88 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 2, *Plate Boundaries in Action*, pages 77-79

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
GEOLOGIC PROCESSES
8.5.5. Identify evidence for plate tectonics theory (e.g., fit of continents, location of earthquakes, volcanoes, mid-ocean ridge, plate boundaries).
Earth Science Lab, Level A: Cards 10, 11, 12, 13, 14, 15, 16, 17, 88 **Earth Science Lab, Level B:** Cards 10, 11, 12, 13, 14, 15, 16, 17, 88 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 2, *Plate Boundaries in Action*, pages 77-79

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
GEOLOGIC PROCESSES
8.5.6. Identify a variety of methods (e.g., rock sequences, fossil correlation, radiometric dating) used to determine geologic time.
Earth Science Lab, Level A: Cards 30, 31, 32, 33, 34 **Earth Science Lab, Level B:** Cards 30, 31, 32, 33, 34

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
GEOLOGIC PROCESSES
8.5.7. Explain the changes Earth has undergone over geologic time (e.g., fossil record, plate tectonics, climate change, glaciation).
Life Science Lab, Level A: Card 67 **Life Science Lab, Level B:** Card 67 **Life Science Lab Teacher's Handbook:** Hands-On Activity 5, *Making Fossils*, pages 93-95 **Earth Science Lab, Level A:** Cards 10, 11, 12, 13, 14, 15, 16, 17, 22, 24, 25, 26, 27, 28, 36, 37, 60, 61, 88 **Earth Science Lab, Level B:** Cards 10, 11, 12, 13, 14, 15, 16, 17, 22, 24, 25, 26, 27, 28, 36, 37, 60, 61, 88 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 2, *Plate Boundaries in Action*, pages 77-79

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
CHARACTERISTICS OF THE EARTH
8.5.8. Explain how phenomena on Earth (i.e., day, year, seasons, lunar phases, eclipses, tides) are related to the position and motion of the Sun, Moon, and Earth.
Earth Science Lab, Level A: Cards 55, 62, 64, 65, 66 **Earth Science Lab, Level B:** Cards 55, 62, 64, 65, 66

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
THE UNIVERSE
8.5.9. Identify characteristics of stars (e.g., color, size, temperature, life cycle).
Earth Science Lab, Level A: Cards 67, 75, 76 **Earth Science Lab, Level B:** Cards 67, 75, 76

Standard 5: Earth and Space Science
Standard 5: Students understand the basic concepts and principles of earth and space science.
THE UNIVERSE
8.5.10. Identify the composition (e.g., stars, galaxies) and scale of the universe.
Earth Science Lab, Level A: Cards 74, 75, 76, 77 **Earth Science Lab, Level B:** Cards 74, 75, 76, 77

Standard 7: Science and Other Areas
Standard 7: Students understand relations between science and personal, social, and environmental issues.
SCIENCE AND SOCIAL ISSUES
8.7.1. Explain the interaction of science and technology with social issues (e.g., mining, natural disasters).
Life Science Lab, Level A: Cards 45, 46, 49, 64, 69, 85, 86, 87, 88, 89, 90 **Life Science Lab, Level B:** Cards 45, 46, 49, 64, 69, 85, 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 16, 20, 31, 37, 42, 51, 54, 59, 60, 61, 85, 86, 88 **Earth Science Lab, Level B:** Cards 16, 20, 31, 37, 42, 51, 54, 59, 60, 61, 85, 86, 88 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 5, *What is in the Air?*, pages 89-91 **Physical Science Lab, Level A:** Cards 33, 35, 46, 47, 48, 49, 70, 72, 73, 76, 81, 84, 90 **Physical Science Lab, Level B:** Cards 33, 35, 46, 47, 48, 49, 70, 72, 73, 76, 81, 84, 90

Standard 8: History and Nature of Science
Standard 8: Students understand the history and nature of Science
SCIENTIFIC KNOWLEDGE
8.8.1. Explain how many people from various cultures have made important contributions to the advancement of 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