SRA Life, Earth, and Physical Science Laboratories
correlation to
Connecticut Core Science Curriculum Framework
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.

Scientific Inquiry • **Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain, and predict natural phenomena.** • **Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation.** • **Scientific inquiry requires the sharing o f findings and ideas for critical review by colleagues and other scientists.**
C INQ.1 Identify questions that can be answered through scientific investigation.
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Scientific Literacy • **Scientific literacy includes speaking, listening, presenting, interpreting, reading and writing about science.** • **Scientific literacy also includes the ability to search for and assess the relevance and credibility of scientific information found in various print and electronic media.**
C INQ.2 Read, interpret, and examine the credibility of scientific claims in different sources of information.
This concept is not covered at this level.

Scientific Inquiry

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- **Scientific inquiry requires the sharing o f findings and ideas for critical review by colleagues and other scientists.**

C INQ.3 Design and conduct appropriate types of scientific investigations to answer different questions.

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Classroom Resource CD-ROM: Writing Strategy 15

Scientific Inquiry

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C INQ.4 Identify independent and dependent variables, and those variables that are kept constant, when designing an experiment.

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 8, *Temperature, Salinity, and Water Density,* pages 101-103

Physical Science Lab Teacher's Handbook: Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83

Classroom Resource CD-ROM: Writing Strategy 15, 24

Scientific Inquiry

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C INQ.5 Use appropriate tools and techniques to make observation and gather data.

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Classroom Resource CD-ROM: Writing Strategy 2, 11, 24

Scientific Numeracy

- **Scientific numeracy includes the ability to use mathematical operations and procedures to calculate, analyze and present scientific data and ideas.**

C INQ.6 Use mathematical operations to analyze and interpret data.

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C INQ.7 Identify and present relationships between variables in appropriate graphs.

Life Science Lab Teacher's Handbook: Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91

Earth Science Lab Teacher's Handbook: Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83

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C INQ.8 Draw conclusions and identify sources of error.

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Classroom Resource CD-ROM: Writing Strategy 18

Scientific Inquiry

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C INQ.9 Provide explanations to investigated problems or questions.

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Scientific Literacy

- **Scientific literacy includes speaking, listening, presenting, interpreting, reading and writing about science.**
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C INQ.10 Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic.

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Classroom Resource CD-ROM: Writing Strategy 1-30

Properties of Matter—How does the structure of matter affect the properties and uses of materials?

6.1-Materials can be classified as pure substances or mixtures, depending on their chemical and physical properties.

- **Mixtures are made of combinations of elements and/or compounds, and they can be separated by using a variety of physical means.**
- **Pure substances can either be elements or compounds, and they cannot be broken down by physical means.**

C 1. Describe the properties of common elements, such as oxygen, hydrogen, carbon, iron, and aluminum.

Physical Science Lab, Level A: Cards 10, 17, 18, 19, 20
Physical Science Lab, Level B: Cards 10, 17, 18, 19, 20

Properties of Matter—How does the structure of matter affect the properties and uses of materials?

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C 2. Describe how the properties of simple compounds, such as water and table salt, are different from the properties of the elements of which they are made.

Physical Science Lab, Level A: Cards 11, 31, 32
Physical Science Lab, Level B: Cards 11, 31, 32

Properties of Matter—How does the structure of matter affect the properties and uses of materials?

6.1-Materials can be classified as pure substances or mixtures, depending on their chemical and physical properties.

- **Mixtures are made of combinations of elements and/or compounds, and they can be separated by using a variety of physical means.**
- **Pure substances can either be elements or compounds, and they cannot be broken down by physical means.**

C 3. Explain how mixtures can be separated by using the properties of the substances from which they are made, such as particle size, density, solubility, and boiling point.

Physical Science Lab, Level A: Cards 12, 13
Physical Science Lab, Level B: Cards 12, 13

Matter and Energy in Ecosystems—How do matter and energy flow through ecosystems?
6.2-An ecosystem is composed of all the populations that are living in a certain space and the physical factors with which they interact.
• **Populations in ecosystems are affected by biotic factors, such as other populations, and abiotic factors, such as soil and water supply.** • **Populations in ecosystems can be categorized as producers, consumers, and decomposers of organic matter.**
C 4. Describe how abiotic factors, such as temperature, water and sunlight, affect the ability of plants to create their own food through photosynthesis.
Life Science Lab, Level A: Cards 17, 70, 71 **Life Science Lab, Level B:** Cards 17, 70, 71

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• **Populations in ecosystems are affected by biotic factors, such as other populations, and abiotic factors, such as soil and water supply.** • **Populations in ecosystems can be categorized as producers, consumers, and decomposers of organic matter.**
C 5. Explain how populations are effected by predator-prey relationships.
Life Science Lab, Level A: Cards 73, 75, 76 **Life Science Lab, Level B:** Cards 73, 75, 76

Matter and Energy in Ecosystems—How do matter and energy flow through ecosystems?
6.2-An ecosystem is composed of all the populations that are living in a certain space and the physical factors with which they interact.
• **Populations in ecosystems are affected by biotic factors, such as other populations, and abiotic factors, such as soil and water supply.** • **Populations in ecosystems can be categorized as producers, consumers, and decomposers of organic matter.**
C 6. Describe common food webs in different Connecticut ecosystems.
Life Science Lab, Level A: Cards 76, 77, 81, 82 **Life Science Lab, Level B:** Cards 76, 77, 81, 82

Energy in the Earth's Systems—How do external and internal sources of energy affect the Earth's systems?
6.3-Variations in the amount of the sun's energy hitting the Earth's surface affect daily and seasonal weather patterns.
• **Local and regional weather are affected by the amount of solar energy these areas receive and by their proximity to a large body of water.**
C 7. Describe the effect of heating on the movement of molecules in solids, liquids, and gases.
Physical Science Lab, Level A: Cards 5, 6, 42 **Physical Science Lab, Level B:** Cards 5, 6, 42

Energy in the Earth's Systems—How do external and internal sources of energy affect the Earth's systems?
6.3-Variations in the amount of the sun's energy hitting the Earth's surface affect daily and seasonal weather patterns.
• **Local and regional weather are affected by the amount of solar energy these areas receive and by their proximity to a large body of water.**
C 8. Explain how local weather conditions are related to the temperature, pressure and water content of the atmosphere and the proximity to a large body of water.
Earth Science Lab, Level A: Cards 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 56, 57 **Earth Science Lab, Level B:** Cards 38, 39, 40, 41, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 56, 57

Energy in the Earth's Systems—How do external and internal sources of energy affect the Earth's systems?
6.3-Variations in the amount of the sun's energy hitting the Earth's surface affect daily and seasonal weather patterns.
• **Local and regional weather are affected by the amount of solar energy these areas receive and by their proximity to a large body of water.**
C 9. Explain how the uneven heating of the Earth's surface causes winds.
Earth Science Lab, Level A: Cards 38, 39, 40, 41 **Earth Science Lab, Level B:** Cards 38, 39, 40, 41

Science and Technology in Society—How do science and technology affect the quality of our lives?
6.4-Water moving across and through earth materials carries with it the products of human activities.
• **Most precipitation that falls on Connecticut eventually reaches Long Island Sound.**
C 10. Explain the role of septic and sewage systems on the quality of surface and ground water.
Life Science Lab, Level A: Card 90 **Life Science Lab, Level B:** Card 90 **Earth Science Lab, Level A:** Card 86 **Earth Science Lab, Level B:** Card 86

Science and Technology in Society—How do science and technology affect the quality of our lives?
6.4-Water moving across and through earth materials carries with it the products of human activities.
• **Most precipitation that falls on Connecticut eventually reaches Long Island Sound.**
C 11. Explain how human activity may impact water resources in Connecticut, such as ponds, rivers, and the Long Island Sound ecosystem.
Life Science Lab, Level A: Card 90 **Life Science Lab, Level B:** Card 90 **Earth Science Lab, Level A:** Card 86 **Earth Science Lab, Level B:** Card 86

SRA Life, Earth, and Physical Science Laboratories
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Grade 7

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Classroom Resource CD-ROM: Writing Strategy 15

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C INQ.4 Identify independent and dependent variables, and those variables that are kept constant, when designing an experiment.

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Earth Science Lab Teacher's Handbook: Hands-On Activity 8, *Temperature, Salinity, and Water Density,* pages 101-103

Physical Science Lab Teacher's Handbook: Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83

Classroom Resource CD-ROM: Writing Strategy 15, 24

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Classroom Resource CD-ROM: Writing Strategy 2, 11, 24

Scientific Numeracy

- **Scientific numeracy includes the ability to use mathematical operations and procedures to calculate, analyze and present scientific data and ideas.**

C INQ.6 Use mathematical operations to analyze and interpret data.

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C INQ.7 Identify and present relationships between variables in appropriate graphs.

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Earth Science Lab Teacher's Handbook: Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83

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- **Scientific inquiry requires the sharing o f findings and ideas for critical review by colleagues and other scientists.**

C INQ.8 Draw conclusions and identify sources of error.

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

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Classroom Resource CD-ROM: Writing Strategy 18

Scientific Inquiry

- **Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain, and predict natural phenomena.**
- **Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation.**
- **Scientific inquiry requires the sharing o f findings and ideas for critical review by colleagues and other scientists.**

C INQ.9 Provide explanations to investigated problems or questions.

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Scientific Literacy • **Scientific literacy includes speaking, listening, presenting, interpreting, reading and writing about science.** • **Scientific literacy also includes the ability to search for and assess the relevance and credibility of scientific information found in various print and electronic media.**
C INQ.10 Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic.
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

Energy Transfer and Transformations—What is the role of energy in our world?
7.1-Energy provides the ability to do work and can exist in many forms.
• **Work is the process of making objects move through the application of force.** • **Energy can be stored in many forms and can be transformed into the energy of motion.**
C 12. Explain the relationship among force, distance, and work, and use the relationship (W=F x D) to calculate work done in lifting heavy objects.
Physical Science Lab, Level A: Card 62 **Physical Science Lab, Level B:** Card 62

Energy Transfer and Transformations—What is the role of energy in our world?
7.1-Energy provides the ability to do work and can exist in many forms.
• **Work is the process of making objects move through the application of force.** • **Energy can be stored in many forms and can be transformed into the energy of motion.**
C 13. Explain how simple machines, such as inclined planes, pulleys and levers, are used to create mechanical advantage.
Physical Science Lab, Level A: Cards 63, 64 **Physical Science Lab, Level B:** Cards 63, 64

Energy Transfer and Transformations—What is the role of energy in our world?
7.1-Energy provides the ability to do work and can exist in many forms.
• **Work is the process of making objects move through the application of force.** • **Energy can be stored in many forms and can be transformed into the energy of motion.**
C 14. Describe how different types of stored (potential) energy can be used to make objects move.
Physical Science Lab, Level A: Cards 36, 37, 38, 39, 40, 41, 42 **Physical Science Lab, Level B:** Cards 36, 37, 38, 39, 40, 41, 42 **Physical Science Lab Teacher's Handbook:** Hands-On Activity 3, *Energy Conversion,* pages 85-87

Structure and Function—How are organisms structured to ensure efficiency and survival?
7.2-Many organisms, including humans, have specialized organ systems that interact with each other to maintain dynamic internal balance.
• **All organisms are composed of one or more cells; each cell carries on life-sustaining functions.** • **Multicellular organisms need specialized structures and systems to perform basic life functions.**
C 15. Describe the basic structures of an animal cell, including nucleus, cytoplasm, mitochondria and cell membrane, and how they function to support life.
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

Structure and Function—How are organisms structured to ensure efficiency and survival?
7.2-Many organisms, including humans, have specialized organ systems that interact with each other to maintain dynamic internal balance.
• **All organisms are composed of one or more cells; each cell carries on life-sustaining functions.** • **Multicellular organisms need specialized structures and systems to perform basic life functions.**
C 16. Describe the structures of the human digestive, respiratory, and circulatory systems, and explain how they function to bring oxygen and nutrients to the cells and expel waste materials.
Life Science Lab, Level A: Cards 47, 48, 50, 51, 52 **Life Science Lab, Level B:** Cards 47, 48, 50, 51, 52 **Life Science Lab Teacher's Handbook:** Hands-On Activity 4, *Your Cardiovascular System*, pages 89-91

Structure and Function—How are organisms structured to ensure efficiency and survival?
7.2-Many organisms, including humans, have specialized organ systems that interact with each other to maintain dynamic internal balance.
• **All organisms are composed of one or more cells; each cell carries on life-sustaining functions.** • **Multicellular organisms need specialized structures and systems to perform basic life functions.**
C 17. Explain how the human musculo-skeletal system supports the body and allows movement.
Life Science Lab, Level A: Cards 53, 55 **Life Science Lab, Level B:** Cards 53, 55

Energy in the Earth's Systems—How do external and internal sources of energy affect the Earth's systems?
7.3-Landforms are the result of the interaction of constructive and destructive forces over time.
• **Volcanic activity and the folding and faulting of rock layers during the shifting of the Earth's crust affect the formation of mountains, ridges, and valleys.** • **Glaciation, weathering and erosion change the Earth's surface by moving earth materials from place to place.**
C 18. Describe how folded and faulted rock layers provide evidence of the gradual up and down motion of the Earth's crust.
Earth Science Lab, Level A: Cards 11, 12, 13, 14, 15, 16 **Earth Science Lab, Level B:** Cards 11, 12, 13, 14, 15, 16 **Earth Science Lab Teacher's Handbook:** Hands-On Activity 2, *Plate Boundaries in Action*, pages 77-79

Energy in the Earth's Systems—How do external and internal sources of energy affect the Earth's systems?
7.3-Landforms are the result of the interaction of constructive and destructive forces over time.
• **Volcanic activity and the folding and faulting of rock layers during the shifting of the Earth's crust affect the formation of mountains, ridges, and valleys.** • **Glaciation, weathering and erosion change the Earth's surface by moving earth materials from place to place.**
C 19. Explain how glaciation, weathering and erosion create and shape valleys and floodplains.
Earth Science Lab, Level A: Cards 21, 22, 24, 25, 26, 27, 28 **Earth Science Lab, Level B:** Cards 21, 22, 24, 25, 26, 27, 28

Energy in the Earth's Systems—How do external and internal sources of energy affect the Earth's systems?
7.3-Landforms are the result of the interaction of constructive and destructive forces over time.
• **Volcanic activity and the folding and faulting of rock layers during the shifting of the Earth's crust affect the formation of mountains, ridges, and valleys.** • **Glaciation, weathering and erosion change the Earth's surface by moving earth materials from place to place.**
C 20. Explain how the boundaries of tectonic plates can be inferred from the location of earthquakes and volcanoes.
Earth Science Lab, Level A: Cards 15, 16, 17, 88 **Earth Science Lab, Level B:** Cards 15, 16, 17, 88

Science and Technology in Society—How do science and technology affect the quality of our lives?
7.4-Technology allows us to improve food production and preservation, thus improving our ability to meet the nutritional needs of growing populations.
• **Various microbes compete with humans for the same sources of food.**
C 21. Describe how freezing, dehydration, pickling, and irradiation prevent food spoilage caused by microbes.
This concept is not covered at this level.

SRA Life, Earth, and Physical Science Laboratories
correlation to
Connecticut Core Science Curriculum Framework
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.

Scientific Inquiry • **Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain, and predict natural phenomena.** • **Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation.** • **Scientific inquiry requires the sharing o f findings and ideas for critical review by colleagues and other scientists.**
C INQ.1 Identify questions that can be answered through scientific investigation.
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 15

Scientific Literacy • **Scientific literacy includes speaking, listening, presenting, interpreting, reading and writing about science.** • **Scientific literacy also includes the ability to search for and assess the relevance and credibility of scientific information found in various print and electronic media.**
C INQ.2 Read, interpret, and examine the credibility of scientific claims in different sources of information.
This concept is not covered at this level.

Scientific Inquiry

- **Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain, and predict natural phenomena.**
- **Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation.**
- **Scientific inquiry requires the sharing o f findings and ideas for critical review by colleagues and other scientists.**

C INQ.3 Design and conduct appropriate types of scientific investigations to answer different questions.

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Classroom Resource CD-ROM: Writing Strategy 15

Scientific Inquiry

- **Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain, and predict natural phenomena.**
- **Scientific inquiry progresses through a continuous process of questioning, data collection, analysis and interpretation.**
- **Scientific inquiry requires the sharing o f findings and ideas for critical review by colleagues and other scientists.**

C INQ.4 Identify independent and dependent variables, and those variables that are kept constant, when designing an experiment.

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 8, *Temperature, Salinity, and Water Density,* pages 101-103

Physical Science Lab Teacher's Handbook: Hands-On Activity 2, *Chemical Reaction Rates,* pages 81-83

Classroom Resource CD-ROM: Writing Strategy 15, 24

Scientific Inquiry

- **Scientific inquiry is a thoughtful and coordinated attempt to search out, describe, explain, and predict natural phenomena.**
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C INQ.5 Use appropriate tools and techniques to make observation and gather data.

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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Classroom Resource CD-ROM: Writing Strategy 2, 11, 24

Scientific Numeracy

- **Scientific numeracy includes the ability to use mathematical operations and procedures to calculate, analyze and present scientific data and ideas.**

C INQ.6 Use mathematical operations to analyze and interpret data.

Life Science Lab Teacher's Handbook: Hands-On Activity 2, *Culturing Bacteria,* pages 81-83; Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91; Hands-On Activity 6, *How Much Does Energy Cost?,* pages 97-99; Hands-On Activity 7, *The Effects of Acid Rain,* pages 101-103

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Scientific Inquiry

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C INQ.7 Identify and present relationships between variables in appropriate graphs.

Life Science Lab Teacher's Handbook: Hands-On Activity 4, *Your Cardiovascular System,* pages 89-91

Earth Science Lab Teacher's Handbook: Hands-On Activity 3, *Interpreting a Topographic Map,* pages 81-83

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C INQ.8 Draw conclusions and identify sources of error.

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Classroom Resource CD-ROM: Writing Strategy 18

Scientific Inquiry

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- **Scientific inquiry requires the sharing o f findings and ideas for critical review by colleagues and other scientists.**

C INQ.9 Provide explanations to investigated problems or questions.

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Scientific Literacy

- **Scientific literacy includes speaking, listening, presenting, interpreting, reading and writing about science.**
- **Scientific literacy also includes the ability to search for and assess the relevance and credibility of scientific information found in various print and electronic media.**

C INQ.10 Communicate about science in different formats, using relevant science vocabulary, supporting evidence and clear logic.

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Classroom Resource CD-ROM: Writing Strategy 1-30

Forces and Motion—What makes objects move the way they do?

8.1-An object's inertia causes it to continue moving the way it is moving unless it is acted upon by a force to change its motion.

- **The motion of an object can be describe by its position, direction of motion and speed.**
- **An unbalanced force acting on an object changes its speed and/or direction of motion.**
- **Objects moving in circles must experiences force acting toward the center.**

C 22. Calculate the average speed of a moving object and illustrate the motion of objects in graphs of distance over time.

Physical Science Lab, Level A: Cards 51, 52
Physical Science Lab, Level B: Cards 51, 52

Forces and Motion—What makes objects move the way they do?

8.1-An object's inertia causes it to continue moving the way it is moving unless it is acted upon by a force to change its motion.

- **The motion of an object can be describe by its position, direction of motion and speed.**
- **An unbalanced force acting on an object changes its speed and/or direction of motion.**
- **Objects moving in circles must experiences force acting toward the center.**

C 23. Describe the qualitative relationships among force, mass, and changes in motion.

Physical Science Lab, Level A: Cards 53, 54, 55, 56, 57
Physical Science Lab, Level B: Cards 53, 54, 55, 56, 57

Forces and Motion—What makes objects move the way they do?
8.1-An object's inertia causes it to continue moving the way it is moving unless it is acted upon by a force to change its motion.
• **The motion of an object can be describe by its position, direction of motion and speed.** • **An unbalanced force acting on an object changes its speed and/or direction of motion.** • **Objects moving in circles must experiences force acting toward the center.**
C 24. Describe the forces acting on an object moving in a circular path.
Physical Science Lab, Level A: Cards 54, 55, 56, 57, 58, 59 **Physical Science Lab, Level B:** Cards 54, 55, 56, 57, 58, 59

Heredity and Evolution—What processes are responsible for life's unity and diversity?
8.2-Reproduction is a characteristic of living systems and it is essential for the continuation of every species.
• **Heredity is the passage of genetic information from one generation to another.** • **Some of the characteristics of an organism are inherited and some result from interactions with the environment.**
C 25. Explain the similarities and differences in cell division in somatic and germ cells.
Life Science Lab, Level A: Cards 10, 60, 61 **Life Science Lab, Level B:** Cards 10, 60, 61

Heredity and Evolution—What processes are responsible for life's unity and diversity?
8.2-Reproduction is a characteristic of living systems and it is essential for the continuation of every species.
• **Heredity is the passage of genetic information from one generation to another.** • **Some of the characteristics of an organism are inherited and some result from interactions with the environment.**
C 26. Describe the structure and function of the male and female human reproductive systems, including the process of egg and sperm production.
Life Science Lab, Level A: Cards 58, 61, 62, 63, 64 **Life Science Lab, Level B:** Cards 58, 61, 62, 63, 64

Heredity and Evolution—What processes are responsible for life's unity and diversity?
8.2-Reproduction is a characteristic of living systems and it is essential for the continuation of every species.
• **Heredity is the passage of genetic information from one generation to another.** • **Some of the characteristics of an organism are inherited and some result from interactions with the environment.**
C 27. Describe how genetic information is organized in genes on chromosomes, and explain sex determination in humans.
Life Science Lab, Level A: Cards 10, 61, 62, 63, 64 **Life Science Lab, Level B:** Cards 10, 61, 62, 63, 64

Energy in the Solar System—How does the position of Earth in the solar system affect conditions on our planet?
8.3-The solar system is composed of planets and other objects that orbit the sun.
• **Gravity is the force that governs the motions of objects in the solar system.** • **The motion of the Earth and moon to the sun causes daily, monthly, and yearly cycles on Earth.**
C 28. Explain the effect of gravity on the orbital movement of planets in the solar system.
Earth Science Lab, Level A: Card 68 **Earth Science Lab, Level B:** Card 68 **Physical Science Lab, Level A:** Cards 57, 59 **Physical Science Lab, Level B:** Cards 57, 59

Energy in the Solar System—How does the position of Earth in the solar system affect conditions on our planet?
8.3-The solar system is composed of planets and other objects that orbit the sun.
• **Gravity is the force that governs the motions of objects in the solar system.** • **The motion of the Earth and moon to the sun causes daily, monthly, and yearly cycles on Earth.**
C 29. Explain how the regular motion and relative position of the sun, Earth, and moon affect the seasons, phases of the moon and eclipses.
Earth Science Lab, Level A: Cards 62, 64, 65 **Earth Science Lab, Level B:** Cards 62, 64, 65

Science and Technology in Society—How do science and technology affect the quality of our lives?
8.4-In the design of structures there is a need to consider factors such as function, materials, safety, cost and appearance.
• **Bridges can be designed in different ways to withstand certain loads and potentially destructive forces.**
C 30. Explain how beam, truss and suspension bridges are designed to withstand the forces that act on them.
This concept is not covered at this level.