SRA Snapshots Video Science™: Level A
correlation to
Maryland Voluntary State Curriculum—Science
Grade 3

SRA Snapshots Video Science™ consists of four interdependent components. Each level has four program DVDs that provide engaging video lessons. The student edition (**SE**) provides student friendly text that reinforces the concepts introduced in the video. The Teacher's Resource Book (**TRB**) provides support activities in a blackline master format. The Teacher's Guide (**TG**) provides lesson planning, differentiated instruction activities, and answers to all student activities in the Student Edition.

KEY:

Reference	**Program Component**
Video	Video lessons on program DVDs
SE	Student Edition
TRB	Teacher's Resource Book
TG	Teacher's Guide

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
A. Constructing Knowledge
1. Gather and question information from many different forms of scientific investigations, including observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments. a. Support statements with facts found in books, articles, and databases, and identify the sources used and expect others to do the same. b. Select and use appropriate tools to expand observations of objects, events, and processes. c. Explain that comparisons of data might not be fair because some conditions are not kept the same. d. Recognize that the results of scientific investigations are seldom exactly the same, when the differences are large, it is important to try to figure out why. e. Follow directions carefully and keep accurate records of one's work in order to compare data gathered. f. Identify possible reasons for differences In results from investigations including unexpected differences in the differences in the methods used or in the circumstances in which the investigation is carried out, and sometimes just because of uncertainties in observations.
Chapter 1, LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, Lesson 3, Process Skill, SE page 43; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 3, Process Skill, SE page 65; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, Lesson 3, Process Skill, SE page 87; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 2, Math in Science, SE page 103; Process Skill, SE page 103; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, Lesson 1, Process Skill, SE page 139; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, Lesson 3, Process Skill, SE page 173; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
B. Applying Evidence and Reasoning
1. Seek better reasons for believing something than "Everybody knows that…" or "I just know" and explain such reasons when given by others. a. Develop explanations using knowledge possessed and evidence from observations, reliable print resources, and investigations. b. Offer reasons for their findings and consider reasons suggested by others. c. Review different explanations for the same set of observations and make more observations to resolve the differences. d. Keep a notebook that describes observations made, carefully distinguishes actual observations from ideas and speculations about what is observed, and is understandable weeks or months later.
Chapter 1, Lesson 1, Process Skill, SE page 7; Lesson 3, Process Skill, SE page 21; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, Lesson 2, Process Skill, SE page 35; Lesson 3, Process Skill, SE page 43; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 2, Process Skill, SE page 59; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, Lesson 2, Process Skill, SE page 79; Lesson 3, Process Skill, SE page 87; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 1, Process Skill, SE page 95; Lesson 3, Process Skill, SE page 109; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, Lesson 1, Process Skill, SE page 117; Lesson 3, Process Skill, SE page 131; LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, Lesson 2, Process Skill, SE page 147; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, Lesson 3, Process Skill, SE page 175; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, Lesson 1, Process Skill, SE page 183; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
C. Communicate Scientific Information
1. Recognize that clear communication is an essential part of doing science because it enables scientists to inform others about their work, expose their ideas to criticism by other scientists, and stay informed about scientific discoveries around the world. a. Make use of models, such as tables and graphs to summarize and interpret data. b. Avoid choosing and reporting only the data that show what is expected by the person doing the choosing. c. Submit work to the critique of others. d. Construct and share reasonable explanations for questions asked. e. Recognize that doing science involves many different kinds of work and engages men and women of all ages and backgrounds.
Chapter 1, Lesson 2, Math in Science, SE page 13; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, Lesson 1, Process Skill, SE page 29; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, Lesson 3, Process Skill, SE page 153; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, Lesson 3, Process Skill, SE page 175; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, Lesson 2, Process Skill, SE page 191; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
D. Technology—Design and Systems
1. Develop designs and analyze the products: “Does it work?” “Could I make it work better?” “Could I have used better materials?” a. Choose appropriate common materials for making simple mechanical constructions and repairing things. b. Recognize that there is no perfect design and that usually some features have to be sacrificed to get others, for example, designs that are best in one respect (safety or ease of use) may be inferior in other ways (cost or appearance). c. Identify factors that must be considered in any technological design—cost, safety, environmental impact, and what will happen is the solution fails.
Chapter 5, LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102 **Chapter 7, Lesson 3, Process Skill, SE page 153** **Chapter 8, Lesson 3, Process Skill, SE page 175** **Chapter 9, Lesson 2, Process Skill, SE page 191**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
D. Technology—Designed Systems
1. Investigate a variety of mechanical systems and analyze the relationship among the parts. a. Realize that in something that consists of many parts, the parts usually influence one another. b. Explain that something may not work as well (or at all) is a part is missing, broken, worn out, mismatched, or misconnected.
Chapter 1, Lesson 1, Process Skill, SE page 7 **Chapter 2, Lesson 1, Video B, SE page 26; Process Skill, SE page 29; Lesson 2, Video A, SE page 31; Video B, SE page 32; Video C, SE page 33; Process Skill, SE page 35** **Chapter 3, Lesson 3, Video A, SE page 61; Video B, SE page 62** **Chapter 4, Lesson 2, Video C, SE page 77; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 1, Video A, SE page 91; Video B, SE page 92; Video C, SE page 93; Lesson 2, Video B, SE page 100; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, Lesson 1, Video A, SE page 113; Video B, SE page 114; Video C, SE page 115; Lesson 2, Video A, SE page 119; Video B, SE page 120; Video C, SE page 121; Lesson 3, Video A, SE page 127; LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, Lesson 1, video C, SE page 137; Lesson 2, Video A, SE page 144; Video C, SE page 145; Lesson 3, Video A, SE page 149; Video B, SE page 150; Video C, SE page 151** **Chapter 8, Lesson 3, Video B, SE page 172; Video C, SE page 173** **Chapter 9, Lesson 1, Video A, SE page 179; Video B, SE page 180; Video C, SE page 181; Lesson 2, Video A, SE page 187; Video B, SE page 188; Video C, SE page 189; Lesson 3, Video A, SE page 193; Video B, SE page 194; Video C, SE page 195**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
D. Technology—Making Models
1. Examine and modify models and discuss their limitations. a. Explain that a model is a simplified imitation of something and that a model's value lies in suggesting how the thing modeled works. b. Investigate and describe that seeing how a model works after changes are made to it may suggest how the real thing would work if the same were done to it. c. Explain that geometric figures, number sequences, graphs, diagrams, sketches, number lines, maps, and stories can be used to represent objects, events, and processes in the real world. Although such representations can never be exact in every detail. d. Realize that one way to make sense of something is to think how it is like something more familiar.
Chapter 1, Lesson 2, Math in Science, SE page 13; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, Lesson 1, Process Skill, SE page 29; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 1, Process Skill, SE page 51; Lesson 2, Process Skill, SE page 59; Lesson 3, Process Skill, SE page 65; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, Lesson 2, Process Skill, SE page 79; Lesson 3, Process Skill, SE page 87; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 2, Math in Science, SE page 103; Process Skill, SE page 103; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, Lesson 3, Process Skill, SE page 131; LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, Lesson 2, Process Skill, SE page 147; Lesson 3, Process Skill, SE page 153; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, Lesson 1, Process Skill, SE page 161; Lesson 2, Process Skill, SE page 167; Lesson 3, Process Skill, SE page 175; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, Lesson 2, Process Skill, SE page 191; Lesson 3, Process Skill, SE page 197; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.
C. Plate Tectonics
1. Identify and describe various natural features found on Earth. a. Identify and describe some natural features of continents. • Mountains • Valleys • Rivers • Canyons. b. Describe the natural features in their immediate outdoor environment, and compare the features with those of another region in Maryland. c. Identify and describe some features of the ocean floor. • Mountain • Valleys • Canyons. d. Recognize and explain that an ocean floor is land covered by water.
Chapter 4, Lesson 1, Video A, SE page 69; Video B, SE page 70; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
B. Cells
1. Explore the world of minute living things to describe what they look like, how they live, and how they interact with their environment. a. Use magnifying instrument to observe and describe using drawings or text (oral or written) minute organisms, such as brine shrimp, algae, aphids, etc. that are found in different environments. b. Describe any observable activity displayed by these organisms, c. Provide reasons that support the conclusion that these organisms are alive. d. Use information gathered about these minute organisms to compare mechanisms they have to satisfy their basic needs to those used by larger organisms.
Level A: **Chapter 3, Lesson 2, Video A, SE page 55; Video B, SE page 56; Video C, SE page 57** **See also Level C:** **Chapter 1, Lesson 1, Video A, SE page 3; Video B, SE page 4; Video C, SE page 5; Critical Thinking, SE page 7; Process Skill, SE page 7; Lesson 2, Video A, SE page 9; Video B, SE page 10; Video C, SE page 11; Critical Thinking, SE page 13; Writing in Science, SE Page 13; Process Skill, SE page 13; Lesson 3, Video A, SE page 15; Video B, SE page 16; Video C, SE page 17; Critical Thinking, SE page 19; Process Skill, SE page 19; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30**

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
E. Flow of Matter and Energy
1. Recognize that materials continue to exist even though they change from one form to another. a. Identify and compile a list of materials that can be recycled. b. Identify what happens to materials when they are recycled. c. Observe and record the sequence of changes that occur to plants and animals that die and decay. d. Ask and develop possible answers to questions about what happens to the materials that living things are made of when they die.
Chapter 2, Lesson 2, Video C, SE page 33; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48 **Chapter 3, Lesson 2, Video B, SE page 56; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 5, Lesson 2, Video C, SE page 101**

4.0 Chemistry—Students will use scientific skills and processes to explain the composition, structure, and interaction of matter in order to support the predictability of structure and energy transformations.
A. Structure of Matter
1. Identify ways to classify objects using supporting evidence from investigation of observable properties. a. Classify objects based on their observable properties. b. Provide reasons for placing the objects into groups. c. Compare classifications with those of others.
Chapter 8, Lesson 1, Video A, SE page 157; Video B, SE page 158; Video C, SE page 159; Critical Thinking, SE page 161; Process Skill, SE page 161

4.0 Chemistry—Students will use scientific skills and processes to explain the composition, structure, and interaction of matter in order to support the predictability of structure and energy transformations.
A. Structure of Matter
2. Identify and describe structures of objects too small to be seen clearly with the unaided eye. a. Identify and describe minute objects, such as grains of sand and crystals of salt after examining with a magnifying instrument. b. Identify and describe the minute features of objects, such as the lines (grain) in a piece of wood and the fibers in a paper napkin after examining with a magnifying instrument.
See Level B: **Chapter 7, Lesson 3, Video A, SE page 149** **See also Level C:** **Chapter 7, Lesson 2, Video A, SE page 135**

4.0 Chemistry—Students will use scientific skills and processes to explain the composition, structure, and interaction of matter in order to support the predictability of structure and energy transformations.
C. States of Matter
1. Provide evidence from investigations to describe the effect that changes in temperature have on the properties of materials. a. Based on data gathered from investigations, identify and describe the changes that occur to the observable properties of materials when different degrees of heat is applied to them, such as melting chocolate pieces, boiling an egg. b. Observe and describe the changes cooling causes to the observable properties of materials when they are cooled, such as freezing water in a straw, milk in an ice cream maker. c. Cite examples of similar changes that heating and cooling have on the observable properties of various other materials.
Chapter 8, Lesson 2, Video A, SE page 163; Video B, SE page 164; Video C, SE page 165; Critical Thinking, SE page 167; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
A. Mechanics
1. Cite evidence from observations to describe the motion of an object using position and speed. a. Describe the position of an object by locating it relative to another object or to its background. b. Using information from multiple trials, compare the speeds (faster or slower) of objects that travel the same distance in different amounts of time. c. Using information from multiple trials, compare the distances that objects moving at different speeds travel in the same amount of time.
Chapter 7, Lesson 1, Video A, SE page 135; Video B, SE page 136; Video C, SE page 137; Critical Thinking, SE page 139; KnowZone, SE pages 140-141

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
A. Mechanics
2. Explain that changes in the ways objects move are caused by forces. a. Observe and describe the way an object's motion changes in a variety of situations (rolling a ball, bouncing a ball, dropping a yo-yo, winding up a toy, etc.) and identify what may have caused the change. b. Describe changes in the motion of objects as they move across different textured surfaces and suggest possible causes for the change. c. Observe and describe that objects fall to the ground unless something bolds them up (gravity).
Chapter 7, Lesson 1, Video A, SE page 135; Video B, SE page 136; Video C, SE page 137; Critical Thinking, SE page 139; Process Skill, SE page 139; KnowZone, SE pages 140-141; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
B. Thermodynamics
1. Recognize and describe that heat is transferred between objects that are at different temperatures. a. Recognize and describe that the temperature of an object increases when heat is added and decreases when heat is removed. b. Recognize and describe that heat will flow between objects at different temperatures until they reach the same temperature.
Chapter 8, Lesson 3, Video A, SE page 171; Video B, SE page 172; Video C, SE page 173; Critical Thinking, SE page 175; Process Skill, SE page 175; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
D. Wave Interactions
2. Identify and describe the relationship between a sound and the vibrations that produce it. a. Based on observations of objects that produce sound, relate vibration to the back and forth motion of parts of the object. b. Pose questions concerning the relationship between loudness or pitch and the vibration of the object.
Chapter 9, Lesson 1, Video C, SE page 181; Critical Thinking, SE page 183; Process Skill, SE page 183

SRA Snapshots Video Science™: Level B
correlation to
Maryland Voluntary State Curriculum—Science
Grade 4

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TG	Teacher's Guide

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Chapter 1, LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 3, Process Skill, SE page 65; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, Lesson 3, Process Skill, SE page 85; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, Lesson 1, Process Skill, SE page 147; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, Lesson 3, Math in Science, SE page 175; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

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Chapter 1, Lesson 1, Process Skill, SE page 7; Lesson 2, Process Skill, SE page 13; Lesson 3, Process Skill, SE page 21; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, Lesson 1, Process Skill, SE page 29; Lesson 3, Process Skill, SE page 43; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 1, Process Skill, SE page 51; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 1, Process Skill, SE page 95; Lesson 2, Process Skill, SE page 101; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, Lesson 3, Process Skill, SE page 129; LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, Lesson 3, Process Skill, SE page 153; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, Lesson 1, Process Skill, SE page 161; Lesson 3, Process Skill, SE page 175; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, Lesson 1, Process Skill, SE page 183; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
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1. Recognize that clear communication is an essential part of doing science because it enables scientists to inform others about their work, expose their ideas to criticism by other scientists, and stay informed about scientific discoveries around the world. a. Make use of models, such as tables and graphs to summarize and interpret data. b. Avoid choosing and reporting only the data that show what is expected by the person doing the choosing. c. Submit work to the critique of others. d. Construct and share reasonable explanations for questions asked. e. Recognize that doing science involves many different kinds of work and engages men and women of all ages and backgrounds.
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1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
D. Technology—Design and Systems
1. Develop designs and analyze the products: “Does it work?” “Could I make it work better?” “Could I have used better materials?” a. Choose appropriate common materials for making simple mechanical constructions and repairing things. b. Recognize that there is no perfect design and that usually some features have to be sacrificed to get others, for example, designs that are best in one respect (safety or ease of use) may be inferior in other ways (cost or appearance). c. Identify factors that must be considered in any technological design—cost, safety, environmental impact, and what will happen is the solution fails.
Chapter 6, Lesson 1 Process Skill, SE page 117 **Chapter 9, Lesson 2 Process Skill, SE page 189; ; LabTime Hands-On Activity, TRB pages 159-161, TG page 174**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
D. Technology—Designed Systems
1. Investigate a variety of mechanical systems and analyze the relationship among the parts. a. Realize that in something that consists of many parts, the parts usually influence one another. b. Explain that something may not work as well (or at all) is a part is missing, broken, worn out, mismatched, or misconnected.
Chapter 2, Lesson 1, Video A, SE page 25; Video B, SE page 26; Video C, SE page 27; Process Skill, SE page 29; Lesson 2, Video A, SE page 31; Video B, SE page 32; Video C, SE page 33; Process Skill, SE page 35; Lesson 3, Video A, SE page 39; Video B, SE page 40; Video C, SE page 41; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48 **Chapter 3, Lesson 1, Video A, SE page 47; Video B, SE page 48; Lesson 2, Video A, SE page 55; Video B, SE page 56; Video C, SE page 57; Process Skill, SE page 59; Lesson 3, Video A, SE page 61; Video B, SE page 62; Video C, SE page 63; Critical Thinking, SE page 65; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, Lesson 2, Video C, SE page 77; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 1, Video A, SE page 91; Video B, SE page 92; Lesson 2, Video A, SE page 97; Lesson 3, Video C, SE page 107; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, Lesson 1, Video A, SE page 113; Video B, SE page 114; Video C, SE page 115; Lesson 2, Video A, SE page 119; Video C, SE page 121; LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, Lesson 1, Video C, SE page 137; Lesson 3, Video A, SE page 149; Video B, SE page 150; Video C, SE page 151; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, Lesson 1, Video A, SE page 157; Video B, SE page 158; Video C, SE page 157; Lesson 2, Video A, SE page 163; Video B, SE page 164; Video C, SE page 165; Lesson 3, Video C, SE page 173; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, Lesson 1, Video C, SE page 181; Lesson 2, Video C, SE page 187; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
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1. Examine and modify models and discuss their limitations. a. Explain that a model is a simplified imitation of something and that a model's value lies in suggesting how the thing modeled works. b. Investigate and describe that seeing how a model works after changes are made to it may suggest how the real thing would work if the same were done to it. c. Explain that geometric figures, number sequences, graphs, diagrams, sketches, number lines, maps, and stories can be used to represent objects, events, and processes in the real world. Although such representations can never be exact in every detail. d. Realize that one way to make sense of something is to think how it is like something more familiar.
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2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.
A. Materials and Processes That Shape a Planet
2. Recognize and explain how physical weathering and erosion cause changes to Earth's surface. a. Investigate and describe how weathering wears down Earth's surface. • Water • Ice • Wind. b. Cite evidence to show that erosion shapes and reshapes the Earth's surface as it moves Earth's materials from one location to another. • Water • Ice • Wind.
Chapter 4, Lesson 2, Video A, SE page 75; Critical Thinking, SE page 79

2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.
B. Earth History
2. Recognize and explain that fossils provide evidence about the plants and animals that lived long ago and about the nature of the environment at that time. a. Recognize and explain that the remains or imprints of plants and animals can become fossils. b. Describe the physical structures of an animal or plant based on it fossil remains. c. Identify what an animal or plant fossil is able to tell about the environment in which it lived.
Level B: **Chapter 1, Lesson 1, Video A, SE page 5; Critical Thinking, SE page 7; Process Skill, SE page 7** **Chapter 4, Lesson 2, Video B, SE page 76; Critical Thinking, SE page 79** **See also Level A:** **Chapter 4, Lesson 2, Video B, SE page 76; Critical thinking, SE page 79; KnowZone, SE page 80-81**

2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.
D. Astronomy
1. Identify and describe the variety of things in the universe through first-hand observations using the unaided eye, binoculars or telescopes or videos and/or pictures from reliable sources. a. Observe and describe the stars and the planets as seen through a telescope, graphically in pictures or video clips from reliable sources. b. Identify the sun as the Earth's closest star. c. Recognize that stars are like the sun, some are smaller and some larger. d. Recognize and describe that the stars are not all the same in apparent brightness. e. Recognize that the patterns of stars in the sky stay the same although their locations in the sky appear to change with the seasons.
Chapter 6, Lesson 1, Video A, SE page 113; Lesson 2, Video A, SE page 119; Video B, SE page 120; Video C, SE page 121; Critical Thinking, SE page 123; Process Skill, SE page 123; Lesson 3, Video A, SE page 125; Critical Thinking, SE page 129

2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.
E. Interactions of Hydrosphere and Atmosphere
2. Recognize and describe that each season has different weather conditions. a. Describe different seasonal weather conditions using data collected from weather instruments, models or drawings. b. Compare average daily temperatures during different seasons. c. Compare average daily wind speed and direction during different seasons d. Compare average daily precipitation during different seasons. • Amount • Type.
Chapter 5, Lesson 1, Video A, SE page 91; Video B, SE page 92; Critical Thinking, SE page 95; Process Skill, SE page 95; Lesson 2, Video B, SE page 98; Video C, SE page 99; Critical Thinking, SE page 101; Process Skill, SE page 101; Lesson 3, Video A, SE page 105; Video C, SE page 107; Critical Thinking, SE page 107; Process Skill, SE page 107; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
A. Diversity of Life
1. Explain how animals and plants can be grouped according to observable features. a. Observe and compile a list of a variety of animals or plants in both familiar and unfamiliar environments. b. Classify these animals and plants according to their observable features and provide reasons for placing them into different groups. c. Given a list of additional animals or plants, decide whether or not they could be placed with the established groups or do new groups have to be added? d. Describe how classifying tells us about the relatedness among the animals or plants placed within any group.
Chapter 1, Lesson 1, Video B, SE page 4; Lesson 2, Video A, SE page 9; Video B, SE page 10; Process Skill, SE page 13; KnowZone, SE pages 14-15; Lesson 3, Video A, SE page 17; Process Skill, SE page 21 **Chapter 2, Lesson 1, Video A, SE page 25; Video B, SE page 26; Video C, SE page 27; Critical Thinking, SE page 29; Process Skill, SE page 29; Lesson 2, Video A, SE page 31; Video B, SE page 32; Video C, SE page 33; Process Skill, SE page 35; KnowZone, SE pages 36-37; Lesson 3, Video A, SE page 39; Video B, SE page 40** **Chapter 3, Lesson 2, Video A, SE page 55; Video B, SE page 56; Video C, SE page 57; Process Skill, SE page 59**

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
C. Genetics
1. Explain that in order for offspring to resemble their parents, there must be a reliable way to transfer information from one generation to the next. a. Describe traits found in animals and plants, such as eye color, height, leaf shape, seed type that are passed from one generation to another. b. Explain that some likenesses between parents and offspring are inherited (such as eye color in humans, nest building in birds, or flower color in plants) and other likenesses are learned (such as language in humans or songs in birds). c. Raise questions based on observations of a variety of parent and offspring likenesses and differences, such as "Why don't all the puppies have the same traits, such as eye color and size as their parents?" or "How do traits get transferred?" d. Seek answers to several of the questions asked and develop a reasonable explanation to support the idea that information is passed from parent to offspring.
Chapter 1, Lesson 1, Video B, SE page 4; Lesson 2, Video A, SE page 9; Video B, SE page 10; Video C, SE page 11; Lesson 3, Video A, SE page 17; Video C, SE page 19; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 3, Lesson 1, Video B, SE page 48**

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
D. Evolution
1. Explain that individuals of the same kind differ in their characteristics, and sometimes the differences give individuals an advantage in surviving and reproducing. a. Describe ways in which organisms in one habitat differ from those in another habitat and consider how these differences help them survive and reproduce. b. Explain that the characteristics of an organism affect its ability to survive and reproduce. c. Examine individuals in a group of the same kind of animals or plants to identify differences in characteristics, such as hearing ability in rabbits or keenness of vision in hawks that might give those individuals an advantage in surviving and reproducing. d. Explain that changes in a habitat may be beneficial or harmful to the survival of a population of organisms. e. Examine fossils to compare them to one another and to living organisms according to their similarities and differences.
Chapter 1, Lesson 1, Video B, SE page 4; Video C, SE page 5; Critical Thinking, SE page 7; Process Skill, SE page 7; Lesson 2, Video A, SE page 9; Video B, SE page 10; Video C, SE page 11; Critical Thinking, SE page 13; Writing in Science, SE page 13; Process Skill, SE page 13; KnowZone, SE pages 14-15; Lesson 3, Video A, SE page 17; Process Skill, SE page 21; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, Lesson 1, Video B, SE page 26; Video C, SE page 27; Critical Thinking, SE page 29; Process Skill, SE page 31; Lesson 2, Critical Thinking, SE page 35; Lesson 3, Video C, SE page 41; Critical Thinking, SE page 43; Process Skill, SE page 43** **Chapter 3, Lesson 1, SE page 47; Video B, SE page 48; Video C, SE page 49; Critical Thinking, SE page 51; Lesson 2, Video A, SE page 55; Video B, SE page 56; Video C, SE page 57; Critical Thinking, SE page 59; Process Skill, SE page 59; Lesson 3, Video A, SE page 61; Video B, SE page 62; Video C, SE page 63; Critical Thinking, SE page 65; Process Skill, SE page 65**

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
E. Flow of Matter and Energy
1. Recognize food as the source of materials that all living things need to grow and survive. a. Classify the things that people and animals take into their bodies as food or not food. b. Describe what happens to food that people and other animals eat. • Contributes to growth • Provides energy • Is stored for future use • Is eliminated. c. Identify the things that are essential for plants to grow and survive.
Chapter 1, Lesson 1, Video A, SE page 3; Lesson 3, video B, SE page 18; Video C, SE page 19 **Chapter 2, Lesson 1, Video A, SE page 25; Lesson 2, Video A, SE page 31; Video B, SE page 32; Video C, SE page 33; Critical Thinking, SE page 35; Writing in Science, SE page 35; Process Skill, SE page 35; Lesson 3, Video A, SE page 39; Video B, SE page 40; Video C, SE page 41; Critical Thinking, SE page 43; Process Skill, SE page 43; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48**

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
F. Ecology
1. Explain ways that individuals and groups of organisms interact with each other and their environment. a. Identify and describe the interaction of organisms present in a habitat. • Competition for space, food, and water • Beneficial interactions: nesting, pollination, seed dispersal • Roles within food chains and webs: scavengers, decomposers, etc. b. Explain that changes in an organism's habitat are sometime beneficial to it and sometimes harmful.
Chapter 1, Lesson 1, Video C, SE page 5; Critical Thinking, SE page 7; Lesson 3, Video C, SE page 19; Critical Thinking, SE page 21 **Chapter 2, Lesson 1, Video A, SE page 25; Video B, SE page 26; Critical Thinking, SE page 29; Lesson 2, Video A, SE page 31; Video B, SE page 32; Video C, SE page 33; Critical Thinking, SE page 35; Writing in Science, SE page 35; process Skill, SE page 35; Lesson 3, Video A, SE page 39; Video B, SE page 40; Video C, SE page 41; Critical Thinking, SE page 43; Process Skill, SE page 43; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 1, Video A, SE page 47; Video B, SE page 48; Critical Thinking, SE page 51; Process Skill, SE page 51; Lesson 2, Video C, SE page 57; Critical Thinking, SE page 59; Lesson 3, Video B, SE page 62; Video C, SE page 63; Critical Thinking, SE page 65; Process Skill, SE page 65**

4.0 Chemistry—Students will use scientific skills and processes to explain the composition, structure, and interaction of matter in order to support the predictability of structure and energy transformations.
A. Structure of Matter
1. Provide evidence to support the fact that matter can be detected and measured. a. Based on data from investigations classify samples of matters using observable properties: • Strength • Hardness • Flexibility • Durability • Ease of conducting heat. b. Compare samples of like materials using appropriate tools to measure, estimate, and calculate size, capacities, and weights. c. Cite evidence that supports the statement, "All matter takes up space and contains a certain amount of material.)
Chapter 7, Lesson 1, Video A, SE page 135; Video B, SE page 136; Video C, SE page 137; Critical Thinking, SE page 139; Process Skill, SE page 139; KnowZone, SE page 140-141; Lesson 2, Video A, SE page 143; Video B, SE page 144; Video C, SE page 145; Critical thinking, SE page 147; Process Skill, SE page 147 **The Metric System, SE pages 200-201**

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
B. Thermodynamics
1. Provide evidence that heat can be transferred in different ways. a. Recognize and explain that heat can be transferred either by direct contact between objects at different temperatures of without direct contact. b. Observe, describe, and compare materials that readily conduct heat and those that do not conduct heat very well. c. Classify materials as thermal conductors or thermal insulators based on how easily heat flows through them.
See Level A: **Chapter 8, Lesson 3, Video A, SE page 171; Video B, SE page 172; Video C, SE page 173; Critical Thinking, SE page 175; Process Skill, SE page 175** **See also Level C:** **Chapter 8, Lesson 2, Video A, SE page 163; Video B, SE page 164; Video C, SE page 165; Critical Thinking, SE page 167; process Skill, SE page 167**

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
C. Electricity and Magnetism
1. Recognize and describe the effects of static electric charges. a. Observe and describe how to produce static charges by friction between two surfaces. b. Observe the phenomena produced by the static charges: • Light • Sound • Feeling a shock • Attracting lightweight materials over a distance without making contact.
Chapter 9, Lesson 1, Video A, SE page 179; Video B, SE page 180; Critical Thinking, SE page 183; Process Skill, SE page 183

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
C. Electricity and Magnetism
2. Investigate and provide evidence that electricity requires a closed loop in order to produce measurable effects. a. Identify the sources of electricity needed to produce various effects: • Light—flashlight • Heat—hot plate, hairdryer • Sound—Ipod, doorbell • Movement—mechanical toys. b. Investigate and describe (orally or with diagrams) how to light a light bulb or sound a buzzer given a battery, wires, and light bulb or buzzer. c. Describe and compare the path of electricity (circuit) within this system that caused the light to light or the buzzer to sound to those that do not affect the light or buzzer. d. Provide evidence from observations and investigations that electrical circuits require a complete loop through which electricity can pass.
Chapter 9, Lesson 2, Video B, SE page 186; Video C, SE page 187; Critical Thinking, SE page 189; Writing in Science, SE page 189; Process Skill, SE page 189; Lesson 2, Video A, SE page 191; Video C, SE page 193; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
C. Electricity and Magnetism
3. Cite evidence supporting that forces can act on objects without touching them. a. Investigate and describe the effect that two magnets have on each other: • Like poles repel • Opposite poles attract. b. Based on observations, describe the effect of a magnet on a variety of objects including those that are metallic or non-metallic; those made with iron or made with other metals; and on other magnets. c. Compare a compass to a magnet based on observations of the effect of a variety of objects (metallic or non-metallic; those made with iron or other metals; and magnets) have on a compass. d. Provide examples to demonstrate the different ways a magnet acts on objects and how the objects respond. e. Investigate and describe how electricity in a wire affects the needle of a compass. f. Cite examples showing that magnetic, electrical, and gravitational forces can act at a distance.
Chapter 9, Lesson 2, Video A, SE page 185; Video B, SE page 186; Critical Thinking, SE page 189; Writing in Science, SE page 189; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174

6.0 Environmental Science—Students will use scientific skills and processes to explain the interactions of environmental factors (living and nonliving) and analyze their impact from a local to a global perspective.
B. Environmental Issues
1. Recognize and describe that people depend on, change, and are affected by the environment. a. Identify and describe that human activities in a community or region are affected by environmental factors, such as presence and quality of water, soil type, temperature, and precipitation.
Chapter 1, Lesson 1, Video C, SE page 5 **Chapter 2, Lesson 1, Video B, E page 26; Lesson 3, Video C, SE page 41; Critical Thinking, SE page 43; Process Skill, SE page 43** **Chapter 3, Lesson 1, Video C, SE page 49; Lesson 2, Video C, SE page 57; Critical Thinking, SE page 59; Lesson 3, Video B, SE page 62; Video C, SE page 63; Critical Thinking, SE page 65; Process Skill, SE page 65; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, Lesson 3, Video C, SE page 83** **Chapter 5, Lesson 1, Video C, SE page 93; Lesson 2, Critical Thinking, SE page 101**

SRA Snapshots Video Science™: Level C
correlation to
Maryland Voluntary State Curriculum—Science
Grade 5

SRA Snapshots Video Science™ consists of four interdependent components. Each level has four program DVDs that provide engaging video lessons. The student edition (**SE**) provides student friendly text that reinforces the concepts introduced in the video. The Teacher's Resource Book (**TRB**) provides support activities in a blackline master format. The Teacher's Guide (**TG**) provides lesson planning, differentiated instruction activities, and answers to all student activities in the Student Edition.

KEY:

Reference	**Program Component**
Video	Video lessons on program DVDs
SE	Student Edition
TRB	Teacher's Resource Book
TG	Teacher's Guide

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
A. Constructing Knowledge
1. Gather and question information from many different forms of scientific investigations, including observing what things are like or what is happening somewhere, collecting specimens for analysis, and doing experiments. a. Support statements with facts found in books, articles, and databases, and identify the sources used and expect others to do the same. b. Select and use appropriate tools to expand observations of objects, events, and processes. c. Explain that comparisons of data might not be fair because some conditions are not kept the same. d. Recognize that the results of scientific investigations are seldom exactly the same, when the differences are large, it is important to try to figure out why. e. Follow directions carefully and keep accurate records of one's work in order to compare data gathered. f. Identify possible reasons for differences In results from investigations including unexpected differences in the differences in the methods used or in the circumstances in which the investigation is carried out, and sometimes just because of uncertainties in observations.
Chapter 1, Lesson 1, Process Skill, SE page 7; Lesson 2, Process Skill, SE page 13; Lesson 3, Process Skill, SE page 21; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, Lesson 1, Process Skill, SE page 29; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 3, Process Skill, SE page 65; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 3, Process Skill, SE page 107; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, Lesson 3, Process Skill, SE page 197; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
B. Applying Evidence and Reasoning
1. Seek better reasons for believing something than "Everybody knows that…" or "I just know" and explain such reasons when given by others. a. Develop explanations using knowledge possessed and evidence from observations, reliable print resources, and investigations. b. Offer reasons for their findings and consider reasons suggested by others. c. Review different explanations for the same set of observations and make more observations to resolve the differences. d. Keep a notebook that describes observations made, carefully distinguishes actual observations from ideas and speculations about what is observed, and is understandable weeks or months later.
Chapter 1, LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 2, Process Skill, SE page 57; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, Lesson 1, Process Skill, SE page 73; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 1, Process Skill, SE page 95; Lesson 2, Process Skill, SE page 101; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, Lesson 2, Process Skill, SE page 125; LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, Lesson 2, Process Skill, SE page 147; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
C. Communicate Scientific Information
1. Recognize that clear communication is an essential part of doing science because it enables scientists to inform others about their work, expose their ideas to criticism by other scientists, and stay informed about scientific discoveries around the world. a. Make use of models, such as tables and graphs to summarize and interpret data. b. Avoid choosing and reporting only the data that show what is expected by the person doing the choosing. c. Submit work to the critique of others. d. Construct and share reasonable explanations for questions asked. e. Recognize that doing science involves many different kinds of work and engages men and women of all ages and backgrounds.
Chapter 1, Lesson 1, Process Skill, SE page 7; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, Lesson 3, Process Skill, SE page 43; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 3, Math in Science, SE page 57; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, Lesson 3, Process Skill, SE page 87; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 3, Process Skill, SE page 107; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, Lesson 3, Process Skill, SE page 175; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, Lesson 1, Process Skill, SE page 183; Lesson 2, Process Skill, SE page 191; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
D. Technology—Design and Systems
1. Develop designs and analyze the products: "Does it work?" "Could I make it work better?" "Could I have used better materials?" a. Choose appropriate common materials for making simple mechanical constructions and repairing things. b. Recognize that there is no perfect design and that usually some features have to be sacrificed to get others, for example, designs that are best in one respect (safety or ease of use) may be inferior in other ways (cost or appearance). c. Identify factors that must be considered in any technological design—cost, safety, environmental impact, and what will happen is the solution fails.
Chapter 9 LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
D. Technology—Designed Systems
1. Investigate a variety of mechanical systems and analyze the relationship among the parts. a. Realize that in something that consists of many parts, the parts usually influence one another. b. Explain that something may not work as well (or at all) is a part is missing, broken, worn out, mismatched, or misconnected.
Chapter 1, Lesson 1, Video A, SE page 3; Video B, SE page 4; Video C, SE page 5; Lesson 2, Video A, SE page 9; Video B, SE page 10; Video C, SE page 11; Lesson 3, Video A, SE page 15; Video B, SE page 16; Video C, SE page 17 **Chapter 2, Lesson 3, Video A, SE page 39; Video B, SE page 40; Video C, SE page 41** **Chapter 3, Lesson 1, Video A, SE page 47; Video B, SE page 49; Video C, SE page 49; Lesson 2, Video A, SE page 53; Video B, SE page 54; Video C, SE page 55; KnowZone, SE page 58-59** **Chapter 4, Lesson 1, Video A, SE page 69; Video B, SE page 70; Video C, SE page 71; KnowZone, SE page 74-75; Lesson 2, Video A, SE page 77; Video B, SE page 78; Video C, SE page 79; Lesson 3, Video A, SE page 83; Video B, SE page 84; Video C, SE page 85** **Chapter 5, Lesson 1, Video A, SE page 91; Video B, SE page 92; Video C, SE page 93; Lesson 2, Video A, SE page 97; Video B, SE page 98; Video C, SE page 99; Lesson 3, Video A, SE page 103; Video B, SE page 104l Video C, SE page 105** **Chapter 6, Lesson 1, Video A, SE page 113; Video B, SE page 114; Video C, SE page 115; Lesson 2, Video A, SE page 121; Video B, SE page 122; Video C, SE page 123** **Chapter 7, Lesson 1, Video A, SE page 135; Video B, SE page 136; Video C, SE page 137; KnowZone, SE page 140-141; Lesson 2, Video A, SE page 143; Video B, SE page 144; Video C, SE page 145; Lesson 3, Video A, SE page 149; Video B, SE page 150; Video C, SE page 151** **Chapter 8, Lesson 1, Video A, SE page 157; Video B, SE page 158; Video C, SE page 159; Lesson 2, Video A, SE page 163; Video B, SE page 164; Video C, SE page 165; Lesson 3, Video A, SE page 171; Video B, SE page 172; Video C, SE page 173** **Chapter 9, Lesson 1, Video A, SE page 179; Video B, SE page 180; Video C, SE page 181; Lesson 2, Video A, SE page 187; Video B, SE page 188; Video C, SE page 189; Lesson 1, Video A, SE page 193; Video B, SE page 194; Video C, SE page 195**

1.0 Skills and Processes—Students will demonstrate the thinking and acting inherent in the practice of science.
D. Technology—Making Models
1. Examine and modify models and discuss their limitations. a. Explain that a model is a simplified imitation of something and that a model's value lies in suggesting how the thing modeled works. b. Investigate and describe that seeing how a model works after changes are made to it may suggest how the real thing would work if the same were done to it. c. Explain that geometric figures, number sequences, graphs, diagrams, sketches, number lines, maps, and stories can be used to represent objects, events, and processes in the real world. Although such representations can never be exact in every detail. d. Realize that one way to make sense of something is to think how it is like something more familiar.
Chapter 1, Lesson 1, Process Skill, SE page 7; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30 **Chapter 2, LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48** **Chapter 3, Lesson 2, Math in Science, SE page 57; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66** **Chapter 4, Lesson 3, Process Skill, SE page 87; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84** **Chapter 5, Lesson 3, Process Skill, SE page 107; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 6, LabTime Hands-On Activity 6, TRB pages 105-107, TG page 120** **Chapter 7, LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138** **Chapter 8, Lesson 3, Process Skill, SE page 175; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156** **Chapter 9, Lesson 1, Process Skill, SE page 183; Lesson 2, Process Skill, SE page 191; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174**

2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.
A. Materials and Processes That Shape a Planet
2. Cite and describe the processes that cause rapid or slow changes in Earth's surface. a. Identify and describe events such as tornadoes, hurricanes, volcanic eruptions, earthquakes, and flooding. b. Recognize that the natural forces of gravity causes changes in Earth's surface features as it pulls things toward Earth, as in mud and rock slides, avalanches, etc. c. Identify and describe how the natural agents like wind and water (including ice) produce slow changes on the Earth's surface such as carving out deep canyons and building up sand dunes.
Chapter 4, Lesson 1, Video B, SE page 70; Video C, SE page 71; Critical Thinking, SE page 73; Process Skill, SE page 73; KnowZone, SE pages 74-75; Lesson 2, Video A, SE page 77; Video B, SE page 78; Video C, SE page 79; Critical Thinking, SE page 81; Process Skill, SE page81; LabTime Hands-On Activity 4, TRB pages 69-71, TG page 84 **Chapter 5, Lesson 3, Video B, SE page 104; Critical Thinking, SE page 107; KnowZone, SE pages 108-109**

2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.
A. Materials and Processes That Shape a Planet
3. Cite specific physical properties and describe how they can be used to identify common rock-forming minerals. a. Based on observations, identify and describe physical properties of minerals. • Color, hardness, luster, streak. b. Classify minerals using their physical properties. c. Identify some common minerals such as magnetite, calcite, quartz, and mica that have distinctive physical properties. d. Compare a mineral to a rock.
Chapter 4, Lesson 3, Video A, SE page 83; Video B, SE page 84; Critical Thinking, SE page 87; Writing in Science, SE page 87

2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.
D. Astronomy
1. Identify and compare properties, location, and movement of celestial objects in out solar system. a. Recognize that like all planets and stars, the Earth is spherical in shape. b. Identify the properties of the planet Earth that make it possible for the survival of life as we know it. • Temperature • Location • Presence of an atmosphere • Presence of water. c. Compare the properties of at least one other planet in out solar system to those of Earth to determine if it could support life, as we know it. d. Identify and describe physical properties of comets, asteroids, and meteors. e. Provide reasons that support the idea that our solar system is sun-centered.
Chapter 5, Lesson 1, Video A, SE page 91; Critical Thinking, SE page 95; Lesson 2, Video A, SE page 97; Video B, SE page 98 **Chapter 6, Lesson 1, Video A, SE page 113; Video B, SE page 114; Video C, SE page 115; Critical Thinking, SE page 117; Process Skill, SE page 117** **The Water Cycle, SE page 204**

2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.

D. Astronomy

2. Recognize and describe the causes of the repeating patterns of celestial events.

a. Describe the rotation of the planet Earth on its axis.

b. Recognize and describe that the rotation of planet Earth produces observable effects.

- The day and night cycle
- The apparent movement of the sun, moon, planets, and stars.

c. Describe the revolution of the planet Earth around the sun.

d. Recognize and describe that the revolution of the planet Earth produces effects:

- The observable patterns of stars in the sky stay the same although different stars can be seen in different seasons.
- Length of year.

e. Verify with models and cite evidence that the moon's apparent shape and position change.

Chapter 6, Lesson 2, Video A, SE page 121; Video B, SE page 122; Video C, SE page 123; Critical Thinking, SE page 125; Process Skill, SE page 125
Eclipses, 205

2.0 Earth/Space Science—Students will use scientific skills and processes to explain the chemical and physical interactions (i.e., natural forces and cycles) of the environment, Earth, and the universe that occur over time.

E. Interactions of Hydrosphere and Atmosphere

1. Recognize and describe that the amount of water on Earth continues to stay the same even though it may change from one form to another.

a. Describe how water on Earth changes.

- Condensation
- Precipitation
- Evaporation.

b. Explain that the sun is the main source of energy that causes the changes in the water on Earth.

c. Describe the relationship between the amount of energy from the sun and the quantity of water that is changed.

d. Describe the water cycle.

Chapter 5, Lesson 2, Video A, SE page 97; Video B, SE page 98; Video C, SE page 97; Critical Thinking, SE page 101; Process Skill, SE page 101; Lesson 3, Video A, SE page 103; Process Skill, SE page 107
The Water Cycle, SE page 204

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.

A. Diversity of Life

1. Explain the idea that in any particular environment, some kinds of plants and animals survive well, some less well, and some cannot survive at all.

a. Identify and describe features of some of the plants and animals living in and around the school grounds and explain ways that these organisms are well suited to their environment.

b. Based on observations of features and behaviors of animals and plants from different environments describe reasons why they might not survive if their environment changed or if they were moved from one environment to another.

c. State reasons why certain animals such as whales, salmon, could not survive in the Chesapeake Bay.

d. Research the kind of environment needed by the Maryland blue crab, the sunflower (Maryland's state flower), or another Maryland native organism.

e. Explain that the survival of individual organisms and entire populations can be affected by sudden (flood, Tsunami) or slow (global warming, air pollution) changes in the environment.

Chapter 2, Lesson 2, Video B, SE page 32; Video C, SE page 33; Critical Thinking, SE page 35; KnowZone, SE page 36-37; Lesson 3, Video A, SE page 39; Video B, SE page 40; Video C, SE page 41; Critical Thinking, SE page 43; Process Skill, SE page 43; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48
Chapter 3, Lesson 1, Video A, SE page 47; Video B, SE page 48; Critical Thinking, SE page 51; Process Skill, SE page 51; Lesson 2, Video A, SE page 53; Video B, SE page 54; Video C, SE page 55; Critical Thinking, SE page 57; KnowZone, SE page 58-59; Lesson 3, Video B, SE page 62; Video C, SE page 63; Critical Thinking, SE page 65; LabTime Hands-On Activity 3, TRB pages 51-53, TG page 66

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
B. Cells
1. Provide evidence from observations and investigations to support the idea that some organisms consist of a single cell. a. Use microscopes or other magnifying instruments to observe, describe, and compare single celled organisms, such as amoeba, euglena, paramecium, etc. b. Describe the behaviors of the organisms observed, such as movement, taking in food and water, giving off waste. c. Cite evidence from data gathered that supports the idea that most single celled organisms have needs similar to those of multicellular organisms.
Chapter 1, Lesson 1, Video A, SE page 3; Video B, SE page 4; Video C, SE page 5; Critical Thinking, SE page 7; Process Skill, SE page 7; Lesson 2, Video A, SE page 9; Video B, SE page 10; Video C, SE page 11; Critical Thinking, SE page 13; Writing in Science, SE page 13; Process Skill, SE page 13; Lesson 3, Video A, SE page 15; Video B, SE page 16; Video C, SE page 17; Critical Thinking, SE page 19; Process Skill, SE page 19 **Chapter 2, LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48**

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
B. Cells
2. Investigate and provide evidence that living things are made mostly of cells that can be seen and studies only through a microscope. a. Use microscopes and other video technology to investigate and describe that some organisms are composed of a collection of similar cells working together to meet basic needs of a "colony" of cells. b. Use microscopes and pictures to investigate, describe with drawings, and compare the cells in a variety of multicellular organisms. c. Use information gathered from the comparison of cells in multicellular organisms and from readings discussed with peers to suggest reasonable evidence foe why there are such differences among cells in multicellular organisms.
Chapter 1, Lesson 1, Video A, SE page 3; Video B, SE page 4; Video C, SE page 5; Critical Thinking, SE page 7; Process Skill, SE page 7; Lesson 2, Video A, SE page 9; Video B, SE page 10; Video C, SE page 11; Critical Thinking, SE page 13; Writing in Science, SE page 13; Process Skill, SE page 13; Lesson 3, Video A, SE page 15; Video B, SE page 16; Video C, SE page 17; Critical Thinking, SE page 19; Process Skill, SE page 21; KnowZone, SE page 20-21; LabTime Hands-On Activity 1, TRB pages 15-17, TG page 30

3.0 Life Science—The students will use scientific skills and processes to explain the dynamic nature of living things, their interactions, and the results from the interaction that occur over time.
E. Flow of Matter and Energy
1. Recognize that some source of energy is needed for all organisms to grow and survive. a. Identify the sun as the primary source of energy for all living organisms. • Plants use sunlight to make food. • Plants and animals use food for energy and growth. b. Cite evidence from observations and research that insects and various other organisms depend on dead plant and animal material for food. c. Provide examples that justify the statement "Almost all animals' food can be traced back to plants."
Level C: **Chapter 1, Lesson 2, Video A, SE page 9** **Chapter 2, Lesson 3, Video B, SE page 40; Video C, SE page 41** **Energy Transfer, SE page 203** **See also Level B:** **Chapter 2, Lesson 2, Video A, SE page 31; Video B, SE page 32; Video C, SE page 33; Critical Thinking, SE page 35; Process Skill, SE page 35; Lesson 3, Video A, SE page 39; Video B, SE page 40; Critical Thinking, SE page 43; Process Skill, SE page 43; LabTime Hands-On Activity 2, TRB pages 33-35, TG page 48**

4.0 Chemistry—Students will use scientific skills and processes to explain the composition, structure, and interaction of matter in order to support the predictability of structure and energy transformations.
B. Conservation of Matter
1. Cite evidence to support the statement that "All matter takes up space and contains a certain amount of material. a. Use magnifying instruments to investigate samples of matter, such as a leaf, sugar cube, color photograph, and granite to describe the minute parts from which they are made. b. Use evidence from investigations with a variety of materials, such as water to describe how matter can change from one form to another without the loss of any material. c. Describe the relationship between the weights of whole objects to the sum of the weight of their parts using appropriate tools to gather supporting data.
Chapter 7, Lesson 1, Video A, SE page 135; Video B, SE page 136; Video C, SE page 137; Critical Thinking, SE page 139; Process Skill, SE page 139; Lesson 2, Video A, SE page 143; Video B, SE page 144; Video C, SE page 145; Critical Thinking, SE page 147

4.0 Chemistry—Students will use scientific skills and processes to explain the composition, structure, and interaction of matter in order to support the predictability of structure and energy transformations.
C. States of Matter
1. Provide evidence from investigations to identify the processes that can be used to change materials from one state of matter to another. a. Based on data, identify the three states of matter in which water can exist and provide evidence that it changes from one state to another. b. Observe and describe the changes heating and cooling cause to the different states in which water exists. • Heating causes: ice (solid) to melt forming liquid water; liquid water to evaporate forming water vapor (gas). • Cooling causes: liquid water to freeze forming ice (solid); water vapor (gas) to from liquid water. c. Analyze data from observations to support the idea that when materials change from one state to another the amount of material stays the same.
Chapter 7, Lesson 1, Video B, SE page 136; Lesson 2, Video A, SE page 143; Video C, SE page 145; Critical Thinking, SE page 147 **Chapter 8, Lesson 2, Video C, SE page 165; Critical Thinking, SE page 167; KnowZone, SE pages 168-169**

4.0 Chemistry—Students will use scientific skills and processes to explain the composition, structure, and interaction of matter in order to support the predictability of structure and energy transformations.
D. Physical and Chemical Changes
1. Provide evidence to illustrate that when a new material is made by combining two or more materials, its properties are different from the original materials. a. Investigate and describe what happens to the properties of materials when several materials are combined to make a mixture, such as table salt and pepper, various kinds of nuts, chocolate pieces, and coconut. b. Based on observations from investigations and video technology, describe what happens to the observable properties of materials when several materials are combined to make a new material, such as: • Sugar dissolved in milk • Baking soda combined with vinegar. Share data gathered and construct a reasonable explanation of the results.
Chapter 7, Lesson 1, Video A, SE page 135; Video B, SE page 136; Video C, SE page 137; Critical Thinking, SE page 139; Process Skill, SE page 139; KnowZone, SE pages 140-141; Lesson 2, Video C, SE page 145; Lesson 3, Video A, SE page 149; Video B, SE page 150; Video C, SE page 151; Critical Thinking, SE page 153; Process Skill, SE page 153; LabTime Hands-On Activity 7, TRB pages 123-125, TG page 138

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
A. Mechanics
1. Describe qualitatively and quantitatively motion of objects using distance traveled, time, and speed. a. Observe, describe, and compare types of motion: • Uniform motion as equal distance traveled in equal times, such as escalators, conveyor belts. • Variable motion as different distances traveled in equal times, such as accelerating car, falling objects. b. Use measurements to describe the distance traveled as the change in position. c. Based on data describe speed as the distance traveled per unit of time.
Chapter 9, Lesson 1, Video A, SE page 179; Video B, SE page 180; Video C, SE page 181; Critical Thinking, SE page 183; Process Skill, SE page 183; KnowZone, SE page 184-185; Lesson 2, Video A, SE page 187; Video B, SE page 188; Video C, SE page 189; Critical Thinking, SE page 191; Process Skill, SE page 191; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
A. Mechanics
2. Explain the relationships among changes in motion of an object, its mass, and the size of force applied to it. a. Observe and give examples that show changes in speed or direction of motion are caused by forces, such as friction and gravity. b. Observe and describe that the greater the force the greater the change in motion. c. Observe and describe that the more massive the object is, the less effect a given force has.
Chapter 9, Lesson 1, Video A, SE page 179; Video B, SE page 180; Video C, SE page 181; Critical Thinking, SE page 183; Process Skill, SE page 183; Lesson 2, Video B, SE page 188; Video C, SE page 189; Critical Thinking, SE page 191; Lesson 3, Video A, SE page 193; Video B, SE page 194; Video C, SE page 195; Critical Thinking, SE page 197; Process Skill, SE page 197; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.
A. Mechanics
4. Cite evidence that energy in various forms exists in mechanical energy. a. Identify ways of storing energy (potential) in an object. • Raising an object above the ground. • Putting it on the end of a compressed or extended spring or rubber band. b. Identify that an object has energy (kinetic) related to its motion. • The greater the mass, the greater the energy. • The greater the speed, the grater the energy. c. Observe and cite examples showing that stored energy may be converted to energy of motion and vice verse.
Chapter 8, Lesson 1, Video B, SE page 158; Critical Thinking, SE page 161; Process Skill, SE page 161; LabTime Hands-On Activity 8, TRB pages 141-143, TG page 156

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.

D. Wave Interactions

3. Provide evidence to show that light travels in a straight line until it is reflected or refracted.
a. Observe and describe the images formed by a plane mirror.
- Size of the image.
- Apparent distance of the image from the mirror.
- Front-to-back reversal in the image.

b. Based on observations trace the path of a ray of light before and after it is reflected (bounces) off a plane mirror.
c. Observe and describe that a ray of light changes direction when it crosses the boundary between two materials such as air and water or air to glass.

See Level A;
Chapter 9, Lesson 9, Lesson 1, Video A, SE page 179; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174

See also Level B:
Chapter 8, Lesson 2, Video A, SE page 163; Video B, SE page 164; Video C, SE page 165; Critical Thinking, SE page 167

5.0 Physics—Students will use scientific skills and processes to explain the interactions of matter and energy and the energy transformations that occur.

D. Wave Interactions

4. Recognize and describe how light interacts with different materials.
a. Classify materials as translucent, transparent, or opaque.
b. Explain that shadows are formed when objects block light.
c. Observe and describe that prisms separate white light into its component colors.
d. Pose questions about why objects appear to be different colors.

See Level A:
Chapter 9, Lesson 1, Video A, SE page 179; Video B, SE page 180; Critical Thinking, SE page 183; LabTime Hands-On Activity 9, TRB pages 159-161, TG page 174

See also Level B:
Chapter 8, Lesson 2, Video A, SE page 163; Video B, SE page 164; Critical Thinking, SE page 167; Process Skill, SE page 167

6.0 Environmental Science—Students will use scientific skills and processes to explain the interactions of environmental factors (living and nonliving) and analyze their impact from a local to a global perspective.

A. Natural Resources and Human Needs

1. Recognize and explain how renewable and nonrenewable natural resources are used by humans to meet basic needs.
a. Identify and compare renewable resources and nonrenewable resources.
b. Describe how humans use renewable natural resources.
- Plants
- Soil
- Water
- Animals.

c. Describe how humans use nonrenewable natural resources.
- Oil
- Coal
- Natural gas
- Minerals, including metals.

Chapter 3, Lesson 2, Video B, SE page 63; Video C, SE page 63
Chapter 4, Lesson 3, Video B, SE page 84; Video C, SE page 85; Critical Thinking, SE page 87
Chapter 5, Lesson 1, Video A, SE page 91; Lesson 2, Video A, SE page 97; Video C, SE page 99; Critical Thinking, SE page 101
Chapter 8, Lesson 1, Video C, SE page 159; Lesson 3, Video C, SE page 173; Critical Thinking, SE page 175

6.0 Environmental Science—Students will use scientific skills and processes to explain the interactions of environmental factors (living and nonliving) and analyze their impact from a local to a global perspective.
B. Environmental Issues
1. Recognize and explain that decisions influencing the use of natural resources may have benefits, drawbacks, unexpected consequences, and tradeoffs. a. Identify and describe personal and community behaviors that waste natural resources and/or cause environmental harm and those behaviors that maintain or improve the environment. b. Identify and describe that individuals and groups assess and manage risk to the environment differently.
Chapter 2, Lesson 1, Video C, SE page 27 **Chapter 3, Lesson 3, Video B, SE page 62; Video C, SE page 63; Critical Thinking, SE page 65** **Chapter 4, Lesson 2, Video A, SE page 77; Video B, SE page 78; Lesson 3, Video C, SE page 85; Critical Thinking, SE page 87** **Chapter 5, Lesson 1, Video C, SE page 93; Critical Thinking, SE page 95; Writing in Science, SE page 95; Lesson 2, Video C, SE page 99; Critical Thinking, SE page 101; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 8, Lesson 1, Video C, SE page 159; Lesson 3, Video C, SE page 173; Critical Thinking, SE page 175**

6.0 Environmental Science—Students will use scientific skills and processes to explain the interactions of environmental factors (living and nonliving) and analyze their impact from a local to a global perspective.
B. Environmental Issues
2. Recognize and describe that consequences may occur when Earth's natural resources are used. a. Explain how human activities, such as recycling centers, native plantings in schoolyard habitats, and good farming practices may have positive consequences on the natural environment. b. Explain how human activities such as damage or destruction done to habitats: air, water, land, and/or noise pollution, may have a negative consequence on the natural environment. c. Identify and describe that an environmental issue affects different individuals and groups.
Chapter 2, Lesson 1, Video C, SE page 27 **Chapter 3, Lesson 3, Video B, SE page 62; Video C, SE page 63; Critical Thinking, SE page 65** **Chapter 4, Lesson 2, Video A, SE page 77; Video B, SE page 78; Lesson 3, Video C, SE page 85; Critical Thinking, SE page 87** **Chapter 5, Lesson 1, Video C, SE page 93; Critical Thinking, SE page 95; Writing in Science, SE page 95; Lesson 2, Video C, SE page 99; Critical Thinking, SE page 101; LabTime Hands-On Activity 5, TRB pages 87-89, TG page 102** **Chapter 8, Lesson 1, Video C, SE page 159; Lesson 3, Video C, SE page 173; Critical Thinking, SE page 175**