

**Life Science – Grade 5  
Standard 1**

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| <b>Standard: 1:</b> Classify plants and animals according to the physical characteristics that they share   |
| <b>Essential Guiding Question:</b> How do we group organisms?   |
| <b>Focus Questions:</b> What are vertebrates and invertebrates? How do organisms behave differently according to their kingdom, class, and species? |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b>  | <b>Assessment Techniques</b>          | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>      |
|---|--|---------------------------------------|--|--------------------------|
| <p>Students will review and solidify principles of classification and sorting</p> <p>Students will understand that there are different ways to classify</p> | <p>Classification Activity Text; Harcourt Science A36-37, A34, A40</p> | <p>ORQ</p> <p>Teacher Observation</p> | <p>Project Life – Lesson 1</p>           | <p>September-October</p> |

**Life Science – Grade 5  
Standard 2**

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| <b>Standard: 2.</b> Identify the structures in plants (leaves, roots, flowers, stem, bark, wood) that are responsible for food production, support, water transport, reproduction, growth, and protection |
| <b>Essential Guiding Question:</b> How do structures differ in different types of plants?   |
| <b>Focus Questions:</b> What are the different ways that plants can reproduce? How do life cycles differ in different groups of plants?   |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b>   | <b>Assessment Techniques</b>                              | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>      |
|---|---|---|--|--------------------------|
| <p>Students will build on prior knowledge of plant parts and structures</p> <p>Students will understand photosynthesis as an exchange of gases and also as the fundamental food source of Earth</p> <p>Students will understand the restructuring of water and carbon dioxide molecules to form molecular oxygen and carbohydrate</p> | <p>Review Prior Knowledge</p> <p>Guided Inquiry and Discussion</p> <p>Text A90-A107</p> | <p>Journals</p> <p>Teacher Observation</p> <p>Posters</p> | <p>Project Life</p>                      | <p>September-October</p> |

**Life Science – Grade 5  
Standard 3 & 4**

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| <b>Standard: 3.</b> Recognize that plants and animals go through predictable life cycles that include birth, growth, development, reproduction, and death   |
| <b>4.</b> Describe the major stages that characterize the life cycle of the frog and butterfly as they go through metamorphosis   |
| <b>Essential Guiding Question:</b> What changes do plants and animals go through between the time they're born and the time they die?   |
| Focus Questions: What is metamorphosis? What animals go through metamorphosis? What are the stages of metamorphosis in butterflies and in frogs? What kind of changes do other insects go through? How is this different from direct development? |

| <b>Learning Expectations and Course Specific Goals</b>   | <b>Instructional Strategies</b>   | <b>Assessment Techniques</b>         | <b>Materials, Supplies and Resources</b>   | <b>Pacing Guide</b> |
|--|-----------------------------------|--------------------------------------|--|---------------------|
| Students will review and solidify life cycle concepts<br><br>Students will understand metamorphosis and the stages of change | Review Prior Knowledge;<br>A62-75 | ORQ<br><br>Draw and Label Life Cycle | Project Life Lesson 2<br><br>Video on Life Cycles<br><br>Project Life Lesson 3<br><br>Field Lesson | September-October   |

**Life Science – Grade 5  
Standard 5**

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| <b>Standard: 5.</b> Differentiate between observed characteristics of plants and animals that are fully inherited (e.g., color of flower, shape of leaves, color of eyes, number of appendages) and characteristics that are affected by the climate or environment (e.g., browning of leaves due to too much sun, language spoken) |
| <b>Essential Guiding Question:</b> Why do plants and animals look and behave certain ways? How did they get to be that way?   |
| <b>Focus Questions:</b> How can I tell the difference between a characteristic that all the members of a species have and a characteristic that occurred because of an unexpected change in that organism’s life? What are abiotic factors? How do they affect organisms?   |

| <b>Learning Expectations and Course Specific Goals</b>                      | <b>Instructional Strategies</b> | <b>Assessment Techniques</b> | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b> |
|---|---------------------------------|------------------------------|--|---------------------|
| Students will understand that organisms can be affected by the environment. | A76-A77                         | ORQ                          | Text<br>Field Trip                       | September-October   |

**Life Science – Grade 5  
Standard 6**

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| <b>Standard: 6.</b> Give examples of how inherited characteristics may change over time as adaptations to changes in the environment that enable organisms to survive, e.g., shape of beak or feet, placements of eyes on head, length of neck, shape of teeth, color |
| <b>Essential Guiding Question:</b> How did different species come to be different over time?  |
| <b>Focus Questions:</b> How do an organism’s characteristics help it survive? How do an animal’s characteristics help it get food? Help it avoid being eaten? What characteristics help plants survive in different environments?                                     |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b>  | <b>Assessment Techniques</b>         | <b>Materials, Supplies and Resources</b>                                 | <b>Pacing Guide</b>      |
|---|--|--------------------------------------|--|--------------------------|
| <p>Students will access prior knowledge of adaptations</p> <p>Students will understand that the adaptations of certain organisms are the model for many human inventions and technologies</p> | <p>Text B40-B47</p> <p>Creative Creature Activity</p> <p>Create-a-Creature Game in Project Life Book</p> | <p>ORQ</p> <p>Class Presentation</p> | <p>Project Life Video</p> <p>Adaptations Video</p> <p>Watershed Unit</p> | <p>September-October</p> |

**Life Science – Grade 5  
Standard 7**

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| <b>Standard: 7. Give examples of how changes in the environment (drought, cold) have caused some plants and animals to die or move to new locations (migration)</b> |
| <b>Essential Guiding Question:</b> What would cause organisms to move to a new location?  |
| <b>Focus Questions:</b> How do animals know when it is time to change locations? What happens to the pattern of migrations when the climate changes?                |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b>  | <b>Assessment Techniques</b>          | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>      |
|---|--|---------------------------------------|--|--------------------------|
| <p>Students will access prior knowledge about the response of organisms to changes in the environment</p> <p>Students will understand that when organisms are confronted with non-cyclical changes in the environment they can move, adapt, or die.</p> | <p>Text B40-B47</p> <p>Review Previous Concepts</p> <p>Guided Inquiry and Discussion</p> | <p>Teacher Observation</p> <p>ORQ</p> | <p>Project Life Watershed Unit</p>       | <p>September-October</p> |

**Life Science – Grade 5  
Standard 8**

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| <b>Standard: 8.</b> Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment. Recognize that some animal behaviors are instinctive (e.g., turtles burying their eggs), and others are learned (e.g., humans building fires for warmth, chimpanzees learning how to use tools) |
| <b>Essential Guiding Question:</b> How do plants and animals respond to non-living factors in the environment?  |
| <b>Focus Questions:</b> How do light and gravity affect plants? What adaptations do plants and animals have to survive heat or cold?  |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b>  | <b>Assessment Techniques</b>          | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>      |
|---|--|---------------------------------------|--|--------------------------|
| <p>Students will recognize that adaptations can be behaviors as well as physical structures</p> <p>Students will understand that some adaptive behaviors are instinctive but others must be learned</p> | <p>Review Prior Knowledge</p> <p>Guided Inquiry and Discussion</p> <p>Text B40-B47</p> | <p>Teacher Observation</p> <p>ORQ</p> | <p>Project Life Watershed Unit</p>       | <p>September-October</p> |

**Life Science – Grade 5  
Standard 9**

**Standard: 9.** Recognize plant behaviors, such as the way seedlings’ stem grow toward light and their roots grow downward in response to gravity. Recognize that many plants and animals can survive harsh environments because of seasonal behaviors, e.g., in winter, some trees shed leaves, some animals hibernate, and other animals migrate.

**Essential Guiding Question:** How do plants and animals respond to non-living factors in the environment?

**Focus Questions:** How does light and gravity affect plants? What adaptations to plants and animals have to survive heat or cold?

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b> | <b>Assessment Techniques</b> | <b>Materials, Supplies and Resources</b>  | <b>Pacing Guide</b>      |
|---|---------------------------------|------------------------------|---|--------------------------|
| <p>Students will understand that plants respond in specific ways to gravity and to light</p> <p>Students will articulate that hibernation and migration are behaviors that animals use to survive winter</p> <p>Students will understand that some trees shed leaves in order to survive winter</p> | <p>Review</p> <p>Discussion</p> | <p>Observation</p>           | <p>Project Life</p> <p>Watershed trip</p> | <p>September-October</p> |



**Life Science – Grade 5  
Standard 10**

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| <b>Standard: 10.</b> Give examples of how organisms can cause changes in their environment to ensure survival. Explain how some of these changes may affect the ecosystem   |
| <b>Essential Guiding Question:</b> How can living things change their environment?  |
| <b>Focus Questions:</b> How can an overabundance of certain organisms cause changes? What kinds of changes to the environment do human make to ensure that people will be safe? Can a species change an environment to make it better for itself but worse for other species? |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b>  | <b>Assessment Techniques</b>                                 | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b> |
|---|--|--|--|---------------------|
| Students will understand that changes by species to the environment can be deliberate or inadvertent, but that they may have effects on other species, causing the environment itself to become different | <p>Discussion of the Importance of Wetlands to Human Survival</p> <p>Investigate How an Invasive Species Changes an Ecosystem</p> <p>Research Local Projects (where humans are changing the environment to ensure a species' survival)</p> | <p>ORQ</p> <p>Journal Entries</p> <p>Teacher Observation</p> |  | September-October   |

**Life Science – Grade 5  
Standard 11**

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| <b>Standard: 11.</b> Describe how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within a food chain from producers (plants) to consumers to decomposers  |
| <b>Essential Guiding Question:</b> Where does the energy on this planet come from and how does it move through the food chain?   |
| <b>Focus Questions:</b> Where does the food chain start? What is a producer? What is a consumer? What is a decomposer? What happens when a food chain gets out of balance? How much energy is lost as it goes up the food chain? How does the energy get lost? |

| <b>Learning Expectations and Course Specific Goals</b>   | <b>Instructional Strategies</b>   | <b>Assessment Techniques</b>  | <b>Materials, Supplies and Resources</b>    | <b>Pacing Guide</b>      |
|--|---|---|---|--------------------------|
| <p>Students will have a solid understanding of the sun’s role in life, photosynthesis, and how energy is transferred through the food chain</p> <p>Students will understand that 90% of the energy at each level in the food chain is lost through the functions of living so only 10% is passed on to the next level</p> <p>Students will understand that the energy transferred is in the form of chemical energy is released when the molecules are broken apart into smaller molecules</p> | <p>Design and Construct a Compost Bin</p> <p>Use a Thermometer to Measure the Temperature Rise during Composting</p> <p>Discussion Regarding Where Heat (Energy) comes from (T/E 1.2)</p> <p>Make a Poster Showing a Food Chain in a Specific Ecosystem and Identify Components</p> | <p>Poster</p> <p>Teacher Observation</p> <p>Journal Entries</p> <p>Test</p> | <p>Thornton Burgess Pond Program B28-38</p> | <p>September-October</p> |

**Earth & Space Science – Grade 5  
Standard 1**

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| <b>Standard: 1.</b> Give a simple explanation of what a mineral is and some examples, e.g., quartz, mica |
| <b>Essential Guiding Question:</b> What is a mineral?  |
| <b>Focus Questions:</b> How are minerals formed? Where are they found? What are they used for?           |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b>   | <b>Assessment Techniques</b>   | <b>Materials, Supplies and Resources</b>  | <b>Pacing Guide</b>                |
|---|---|--|---|------------------------------------|
| <p>Students will be able to give the definition of a mineral and distinguish it from a rock</p> <p>Students will identify common minerals</p> | <p>Access Prior Knowledge<br/>Read Text<br/>Guided Inquiry and Discussion<br/>Describe Properties of Mineral,<br/>Mineral Properties Game</p> | <p>Text test unit C,<br/>Ch.2<br/>Performance Task<br/>Science Log</p> | <p>Poster Board<br/>Internet research<br/>Rock and Mineral<br/>Field Guide<br/>Minerals Video<br/>Text Harcourt<br/>Science C32-C39</p> | <p>November – mid-<br/>January</p> |

**Earth & Space Science – Grade 5  
Standard 2**

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| <b>Standard: 2.</b> Identify the physical properties of minerals (hardness, color, luster, cleavage, and streak), and explain how minerals can be tested for these different physical properties |
| <b>Essential Guiding Question:</b> What distinguishes one mineral from another and how can minerals be tested for these properties?  |
| <b>Focus Questions:</b> What is luster? What is streak? What is a Moh’s Scale?   |

| <b>Learning Expectations and Course Specific Goals</b>   | <b>Instructional Strategies</b>   | <b>Assessment Techniques</b>                             | <b>Materials, Supplies and Resources</b>   | <b>Pacing Guide</b>        |
|--|---|--|--|----------------------------|
| Students will be able to perform simple tests on minerals and explain the meaning of the results | Model Testing Process<br>Investigate Properties<br>Streak Test Text C35<br>Moh’s Test | Text Assessment<br>Unit C, Ch. 2;<br>Performance<br>Task | Rock Collections<br><u>Gems, Metals, Minerals</u> Video<br>Text Harcourt Science<br>C32-C39 R2 | November – mid-<br>January |

**Earth & Space Science – Grade 5  
Standard 3**

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| <b>Standard: 3.</b> Identify the three categories of rocks (metamorphic, igneous, and sedimentary) based on how they are formed, and explain the natural and physical processes that create these rocks |
| <b>Essential Guiding Question:</b> What is the rock cycle?  |
| <b>Focus Questions:</b> What is an igneous rock? What does metamorphic mean? What does sedimentary mean? How are the three categories of rocks formed?  |

| <b>Learning Expectations and Course Specific Goals</b>   | <b>Instructional Strategies</b>   | <b>Assessment Techniques</b>  | <b>Materials, Supplies and Resources</b>   | <b>Pacing Guide</b>    |
|--|---|---|--|------------------------|
| Students will be able to explain how rocks are formed and how one kind transforms into another<br>Students will be able to distinguish basic samples | Lecture<br>Instruction<br>Model<br>Performance Task<br>Create Models of Rock<br>Rock Cycle Wheel<br>Draw Rock Cycle<br>Rock Cycle Investigation C48-C49 | Text Test unit C, Ch. 2<br>ORQ<br>Three Rock Types<br>How Rock Types<br>Form<br>Science Log | <u>Rocks</u> video<br><u>Three Rock Types</u><br>Chart<br>Internet<br>Research<br>Text Harcourt<br>Science C48-C53<br>R2 | November – mid-January |

**Earth & Space Science – Grade 5  
Standard 4**

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| <b>Standard: 4.</b> Explain and give examples of the ways in which soil is formed (the weathering of rock by water and wind and from the decomposition of plant and animal remains) |
| <b>Essential Guiding Question:</b> What is soil and how is it formed?   |
| <b>Focus Questions:</b> What are the different parts of soil? What are the proportions of the parts? Why is soil important?   |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b>   | <b>Assessment Techniques</b>  | <b>Materials, Supplies and Resources</b>                     | <b>Pacing Guide</b>         |
|---|---|---|--|-----------------------------|
| <p>Students will demonstrate understanding of the importance of soil and be able to list its components</p> <p>Students will experience different kinds of soil</p> | <p>Pair-Share with Experiment Prediction</p> <p>Cooperative Learning</p> <p>Create Soil Demonstration</p> <p>Shake Rattle and Roll Experiment;</p> <p>Weathering Activity C57</p> | <p>Text test unit C, CH. 1</p> <p>ORQ: How is Soil Formed?</p> <p>Science Log</p> | <p><u>Soil</u> video</p> <p>Text Harcourt Science C4-C11</p> | <p>November-mid-January</p> |

**Earth & Space Science – Grade 5  
Standard 5**

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| <b>Standard: 5.</b> Recognize and discuss the different properties of soil, including color, texture (size of particles), the ability to retain water, and the ability to support the growth of plants |
| <b>Essential Guiding Question:</b> What makes one kind of soil different from another and why does it matter?  |
| <b>Focus Questions:</b> How can you distinguish between the kinds of soil?   |

| <b>Learning Expectations and Course Specific Goals</b>          | <b>Instructional Strategies</b>            | <b>Assessment Techniques</b>   | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>      |
|---|--|--|--|--------------------------|
| Students will be able to experiment with soil's water retention | Model Process<br>Pond Unit Lessons 1 and 2 | Text Test Unit B, Ch.1,<br>Science Log<br>Evaluate<br>Text Harcourt Science<br>B26-B39 | Text<br>Soil samples                     | November-mid-<br>January |

**Earth & Space Science – Grade 5  
Standard 6**

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| <b>Standard: 6.</b> Explain how air temperature, moisture, wind speed and direction, and precipitation make up the weather in a particular place and time |
| <b>Essential Guiding Question:</b> What is weather?   |
| <b>Focus Questions:</b> What are the components that make up weather?   |

| <b>Learning Expectations and Course Specific Goals</b>     | <b>Instructional Strategies</b>        | <b>Assessment Techniques</b> | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>  |
|--|--|------------------------------|--|----------------------|
| Students will be able to explain the components of weather | Review Prior Knowledge<br>Text C70-C77 | Observation<br>Discussion    |  | November-mid-January |



**Earth & Space Science – Grade 5  
Standard 7**

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| <b>Standard: 7.</b> Distinguish among the various forms of precipitation (rain, snow, sleet, and hail), making connections to the weather in a particular place and time |
| <b>Essential Guiding Question:</b> What are the forms of precipitation?  |
| <b>Focus Questions:</b> Why does precipitation change?   |

| <b>Learning Expectations and Course Specific Goals</b> | <b>Instructional Strategies</b> | <b>Assessment Techniques</b> | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>  |
|--|---------------------------------|------------------------------|--|----------------------|
| Students will be able to explain precipitation         | Text C6-C29 review only         | Observation<br>Discussion    |  | November-mid-January |

**Earth & Space Science – Grade 5  
Standard 8**

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| <b>Standard: 8.</b> Describe how global patterns such as the jet stream and water currents influence local weather in measurable terms such as temperature, wind direction and speed, and precipitation |
| <b>Essential Guiding Question:</b> What part does convection play in global patterns such as the jet stream and water currents?   |
| <b>Focus Questions:</b> What is a jet stream? How do large currents affect local weather?   |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b> | <b>Assessment Techniques</b>     | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>  |
|---|---------------------------------|----------------------------------|--|----------------------|
| Students will understand that large convection currents are an important force in climate and weather | Discussion                      | Part of Unit Test<br>Observation |  | November-mid-January |

**Earth & Space Science – Grade 5  
Standard 9**

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| <b>Standard: 9.</b> Differentiate between weather and climate.                                     |
| <b>Essential Guiding Question:</b> What is the difference between weather and climate?             |
| <b>Focus Questions:</b> Why is it important to be able to distinguish between weather and climate? |

| <b>Learning Expectations and Course Specific Goals</b>             | <b>Instructional Strategies</b> | <b>Assessment Techniques</b>              | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>  |
|--|---------------------------------|---|--|----------------------|
| Students will be able to differentiate between weather and climate | Text C62-C85 review only        | Observation<br>Discussion<br>Quick Writes |  | November-mid-January |

**Earth & Space Science – Grade 5  
Standard 10**

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| <b>Standard: 10.</b> Describe how water on earth cycles in different forms and in different locals, including underground and in the atmosphere. |
| <b>Essential Guiding Question:</b> What is the water cycle?  |
| <b>Focus Questions:</b> What is the aquifer? What is precipitation, condensation, and evaporation?   |

| <b>Learning Expectations and Course Specific Goals</b> | <b>Instructional Strategies</b>  | <b>Assessment Techniques</b>   | <b>Materials, Supplies and Resources</b>   | <b>Pacing Guide</b>  |
|--|--|--|--|----------------------|
| Students will demonstrate knowledge of the water cycle | Model Making (working water cycle)<br>Teacher Lecture<br>Pond Field Trip<br>Waquoit Bay Presenter.<br>Text C67-C69 Investigation<br>Water Cycle Wheel<br>Read <u>Journey of a Raindrop</u> | ORQ<br>Explain Water Cycle<br>Science Log<br>Project Based<br>Assessment | Video <u>Water Cycle</u><br>Water Festival<br>Waquoit Bay Reserve Staff<br>Groundwater Model<br>Groundwater Poster | November-mid-January |

**Earth & Space Science – Grade 5  
Standard 11**

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| <b>Standard: 11.</b> Give examples of how the cycling of water, both in and out of the atmosphere, has an effect on climate |
| <b>Essential Guiding Question:</b> How does the water cycle affect climate?   |
| <b>Focus Questions:</b> Why are some areas wet and humid and others desert?   |

| <b>Learning Expectations and Course Specific Goals</b>   | <b>Instructional Strategies</b>                                    | <b>Assessment Techniques</b>                                       | <b>Materials, Supplies and Resources</b>                                     | <b>Pacing Guide</b>  |
|--|--|--|--|----------------------|
| Students will be able to explain different ecosystems and what part the water cycle plays in creating them | Activate Prior Knowledge<br>Prediction of Future Climates<br>Media | ORQ: How the Water Cycle Affects Climate<br>Teacher<br>Observation | Video <u>Common Ground</u><br>Water Festival<br>Text C78-C85<br>Text B12-B17 | November-mid-January |

**Earth & Space Science – Grade 5  
Standard 12**

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| <b>Standard: 12.</b> Give examples of how the surface of the earth changes due to slow processes such as erosion and weathering, and rapid processes such as landslides, volcanic eruptions, and earthquakes |
| <b>Essential Guiding Question:</b> What are slow and fast earth processes?   |
| <b>Focus Questions:</b> What is erosion and weathering? What causes them? What are the causes of fast processes like landslides, volcanic eruptions, and earthquakes?  |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b>  | <b>Assessment Techniques</b>   | <b>Materials, Supplies and Resources</b>  | <b>Pacing Guide</b>         |
|---|--|--|---|-----------------------------|
| <p>Students will be able to explain what erosion and weathering is, and the causes of rapid processes</p> <p>Students will be able to explain the consequences of these processes</p> | <p>Access Prior Knowledge<br/>           Predict Outcomes<br/>           Discuss Effects of Outcomes<br/>           Model Use of Stream Table<br/>           Observe Changes<br/>           Weather Experiments<br/>           Demonstrate a Slow or Rapid Change<br/>           Research Rapid Processes and Report to Class,</p> | <p>Teacher<br/>           Observation<br/>           Concept Test – Earth Science<br/>           Product-Based<br/>           Models<br/>           Unit C Ch.1 Test</p> | <p>Earthquake/Volcano<br/>           Video<br/>           Library Texts<br/>           Internet<br/>           Investigations<br/>           Text Harcourt<br/>           Science C36-C46</p> | <p>November-mid-January</p> |

**Earth & Space Science – Grade 5  
Standard 13**

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| <b>Standard: 13.</b> Recognize that the earth is part of a system called the “solar system” that includes the sun (a star), planets, and many moons. The earth is the third planet from the sun in our solar system |
| <b>Essential Guiding Question:</b> What is a solar system?  |
| <b>Focus Questions:</b> What is the difference between a solar system and a galaxy?   |

| <b>Learning Expectations and Course Specific Goals</b>  | <b>Instructional Strategies</b> | <b>Assessment Techniques</b> | <b>Materials, Supplies and Resources</b>  | <b>Pacing Guide</b>  |
|---|---------------------------------|------------------------------|---|----------------------|
| <p>Students will have the concept of solar system internalized and be able to distinguish it from a galaxy</p> <p>Students will know the relative sizes of the planets and the distances between them</p> | Review prior knowledge          | Discussion                   | <p><u>Solar System Rescue Software</u></p> <p><u>Planets and the Solar System Video</u></p> | November-mid-January |

**Earth & Space Science – Grade 5  
Standard 14**

**Standard: 14.** Recognize that the earth revolves around (orbits) the sun in a year’s time and that the earth rotates on its axis once approximately every 24 hours. Make connections between the rotation of the earth and day/night, and the apparent movement of the sun, moon, and stars across the sky

**Essential Guiding Question:** What is the difference between rotation and revolution?

**Focus Questions:** Why do we have day and night? How long is an earth rotation? How long is a full revolution? Why does it look like the sun, the moon, and the stars move?

| <b>Learning Expectations and Course Specific Goals</b>   | <b>Instructional Strategies</b> | <b>Assessment Techniques</b> | <b>Materials, Supplies and Resources</b> | <b>Pacing Guide</b>         |
|--|---------------------------------|------------------------------|--|-----------------------------|
| <p>Students will be able to explain the concepts of a day and a year</p> <p>Students will be able to distinguish between revolution and rotation</p> | <p>Discussion<br/>Starlab</p>   | <p>Journal entries</p>       | <p>Starlab</p>                           | <p>November-mid-January</p> |



**Earth & Space Science – Grade 5  
Standard 15**

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| <b>Standard: 15.</b> Describe the changes that occur in the observable shape of the moon over the course of a month          |
| <b>Essential Guiding Question:</b> Why does the moon seem to change shape over the course of a month?                        |
| <b>Focus Questions:</b> What is a full moon? A new moon? A crescent moon? A gibbous moon? What does it mean to wax and wane? |

| <b>Learning Expectations and Course Specific Goals</b>   | <b>Instructional Strategies</b>   | <b>Assessment Techniques</b>  | <b>Materials, Supplies and Resources</b>                     | <b>Pacing Guide</b>         |
|--|---|---|--|-----------------------------|
| <p>Students will be able to explain why the moon appears to change</p> <p>Students will be able to name the phases and explain waxing and waning</p> | <p>Teacher Instruction</p> <p>Activate Prior Knowledge</p> <p>Explain and Model showing the Correct Sequence of Moon Phases</p> <p>Observe Changes.</p> <p>Moon Calendar</p> <p>Moon Flipbook</p> | <p>ORQ: List, Show, and Explain Phases of Moon</p> <p>Teacher Observation</p> | <p>Video: <u>Moon</u></p> <p>Text Harcourt Science D6-D7</p> | <p>November-mid-January</p> |

