

Inquiry Investigations™
Earth's Resources MODULE - 1287232
Grades: 6-9

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Washington D.C. Learning Standards
Science
Grade 6

CONTENT STANDARD / STRAND / DISCIPLINE	DC.6.1. Scientific Thinking and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	<p>6.1.1. Give examples of different ways scientists investigate natural phenomena and identify processes all scientists use, such as collection of relevant evidence, the use of reasoning, the development and testing of hypotheses, and the use and construction of theory in order to make sense of the evidence.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering

		<ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	6.1.2.	<p>Plan and conduct simple investigations based on student-developed questions that pertain to the content under study, and write instructions others can follow in carrying out the investigations.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	6.1.7.	<p>Draw conclusions based on scientific evidence, and indicate whether further information is needed to support a specific conclusion or to</p>

		<p>discriminate among several possible conclusions.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
CONTENT STANDARD / STRAND / DISCIPLINE	DC.6.6.	Resources: Broad Concept: Sources of materials differ in amounts, distribution, usefulness, and the time required for their formation. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	6.6.5.	<p>Investigate and describe how pollutants can affect weather and the atmosphere.</p> <ul style="list-style-type: none"> • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD / STRAND / DISCIPLINE	DC.6.7.	Rock Cycle: Broad Concept: Rock materials are continuously recycled in the rock cycle. As a basis for understanding this concept, students:

STANDARD / ESSENTIAL SKILL	6.7.1.	<p>Recognize minerals are naturally occurring crystalline solids with definite chemical compositions and identify common minerals using a key to their diagnostic properties.)</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	6.7.2.	<p>Examine and recognize most rocks are made of one or more minerals.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	6.7.3.	<p>Describe how igneous rocks are formed when older rocks are melted and then recrystallized. Understand they may be cooled deep in the Earth or at or near the surface as part of volcanic systems.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.7.4.	<p>Explain how metamorphic rocks are formed when older rocks are heated (short of melting) and/or subjected to increased pressure.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.7.5.	<p>Describe how sedimentary rocks are formed when older rocks are subjected to weathering into sediments, and those sediments are</p>

		<p>eroded, transported, deposited, then compacted and cemented.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.7.6.	<p>Observe and describe common igneous, metamorphic, and sedimentary rocks, including granite, obsidian, pumice (igneous), slate, schist, marble (metamorphic), sandstone, shale, and limestone (sedimentary).</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD / STRAND / DISCIPLINE	DC.6.8.	<p>Plate Tectonics: Broad Concept: Plate tectonics explain important features of the Earth's surface and major geologic events. As the basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	6.8.1.	<p>Describe the solid lithosphere of Earth, including both the continents and the ocean basins, and how it is broken into several plates that ride on a denser, hot, and gradually deformable layer in the mantle called the asthenosphere (weak sphere).</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.8.2.	<p>Explain why the Earth has a hot interior.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	6.8.3.	<p>Explain how lithosphere plates move very slowly, pressing against one another in some places, pulling apart in other places, and sliding past one another in others.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes

STANDARD / ESSENTIAL SKILL	6.8.4.	<p>Compare and contrast oceanic plates and continental plates.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.8.5.	<p>Explain the process in which plates push against one another, one of them may be dense enough to sink under the other, a process called subduction. Explain that oceanic lithosphere may sink under continental or oceanic lithosphere, but continental lithosphere does not subduct.</p> <ul style="list-style-type: none"> • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.8.6.	<p>Describe that subducting plates may partially melt and form magma, which rises to the surface as lava to feed volcanoes at the end form volcanic mountain chains associated with deep-sea trenches.</p> <ul style="list-style-type: none"> • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.8.7.	<p>Explain when plates push against each other and neither is dense enough to subduct (both continental), the plates will crumple and fold and form large mountain chains.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.8.8.	<p>Explain that earthquakes are sudden motions along breaks in the crust called faults, and volcanoes/fissures are locations where magma reaches the surface as lava.</p> <ul style="list-style-type: none"> • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.8.9.	<p>Describe how earthquakes and volcanoes often, but not always, occur along the boundaries between plates.</p> <ul style="list-style-type: none"> • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.8.10.	<p>Describe that under the ocean basins, molten rock may well up between separating plates to create new ocean floor.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.8.12.	<p>Explain how physical evidence, such as fossils and surface features of glaciation, supports detailed explanations of how Earth's surface has evolved over geologic time.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification

		<ul style="list-style-type: none"> • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time
CONTENT STANDARD / STRAND / DISCIPLINE	DC.6.9.	Earth and Life History: Broad Concept: Evidence from rocks allows us to understand the evolution of life on Earth. As the basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	6.9.1.	<p>Explain how the Earth's surface is built up and broken down by natural processes, including deposition of sediments, rock formation, erosion, and weathering.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.9.2.	<p>Describe that the history of life on Earth has been disrupted by major catastrophic events, such as major volcanic eruptions or the impact of asteroids.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea
STANDARD / ESSENTIAL SKILL	6.9.3.	<p>Explain that although weathered rock is the basic component of soil, the composition and texture of soil and its fertility and resistance to erosion are greatly influenced by plant roots and debris, bacteria, fungi, worms, insects, and other organisms.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	6.9.4.	<p>Explain how thousands of layers of rock confirm the long history of the changing surface of Earth.</p> <ul style="list-style-type: none"> • Teacher Resource CD: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	6.9.5.	<p>Illustrate and describe that remains of changing life forms are found in successive layers, although the youngest layers are not always found on top because of the folding, breaking, and uplifting of layers.</p>

		<ul style="list-style-type: none"> Teacher Resource CD: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	6.9.6.	<p>Recognize that evidence from geologic layers and radioactive dating indicates that Earth is approximately 4.6 billion years old and life on this planet has existed for more than 3 billion years.</p> <ul style="list-style-type: none"> Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	6.9.7.	<p>Observe and explain that fossils provide evidence of how life and environmental conditions have changed.</p> <ul style="list-style-type: none"> Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig Teacher Resource CD: Fossils and Geologic Time

Washington D.C. Learning Standards

Science

Grade 7

CONTENT STANDARD / STRAND / DISCIPLINE	DC.7.1.	<p>Scientific Thinking and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:</p>
STANDARD / ESSENTIAL SKILL	7.1.4.	<p>Recognize testable hypotheses in investigations that pertain to the content under study, and write instructions others can follow in carrying out the investigation.</p> <ul style="list-style-type: none"> Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity

		<ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	7.1.6.	<p>Incorporate circle charts, bar and line graphs, diagrams, scatter plots, and symbols into writing, such as lab or research reports, to serve as visual displays of evidence for claims and/or conclusions.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts
STANDARD / ESSENTIAL SKILL	7.1.7.	<p>Recognize whether evidence is consistent with a proposed explanation, and know that different explanations can be given for the same evidence and that partial evidence may be exploited for reasons other than truth seeking.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	7.1.8.	<p>Question claims based on vague attributes or on authority, such as 'Leading doctors say...' or on statements made by celebrities or others outside the area of their particular expertise.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time

Washington D.C. Learning Standards

Science

Grade 8

CONTENT STANDARD / STRAND / DISCIPLINE	DC.8.1.	Scientific Thinking and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	8.1.1.	Describe how scientific knowledge is subject to modification and refinement as new information challenges prevailing theories.

		<ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Fossils and Geologic Time • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	8.1.5.	<p>Write clear step-by-step instructions (procedural summaries) for conducting investigations.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral

		<p>Color</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	8.1.9.	<p>Explain why arguments may be invalid if based on very small samples of data, biased samples, or experiments in which there was no control sample.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	8.1.12.	<p>Apply simple mathematical models to problems (e.g., formulas such as $F = ma$).</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
CONTENT STANDARD / STRAND / DISCIPLINE	DC.8.2.	<p>Structure of Matter: Broad Concept: Elements have distinct macroscopic properties and atomic structures. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	8.2.4.	<p>Diagram and describe how atoms may combine (bond) into molecules or into large crystalline arrays.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD /	DC.8.3.	<p>Reactions: Broad Concept: Chemical reactions are processes in which atoms are rearranged into different combinations of molecules. As a</p>

STRAND / DISCIPLINE		basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	8.3.1.	<p>Discover and explain how elements and compounds (reactants) react with each other to form products with different properties.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	8.3.6.	<p>Recognize that solutions can be acidic, basic, or neutral depending on the concentration of hydrogen ions in the solution. Understand that because this concentration can vary over a very large range, the logarithmic (each increase of one in the pH scale is an increase of 10 times in concentration) pH scale is used to describe how acidic or basic a solution is.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	8.3.7.	<p>Recognize that indicators of chemical changes include temperature change, the production of a gas, the production of a precipitate, or a color change.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
CONTENT STANDARD / STRAND / DISCIPLINE	DC.8.4.	<p>Density and Buoyancy: Broad Concept: All objects experience a buoyant force when immersed in a fluid. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	8.4.2.	<p>Know density is mass per unit volume.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
STANDARD / ESSENTIAL SKILL	8.4.3.	<p>Investigate and explain that equal volumes of different substances usually have different masses and, therefore, different densities.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
STANDARD / ESSENTIAL SKILL	8.4.5.	<p>Determine the density of substances (regular and irregular solids, and liquids) from direct measurements of mass and volume, or of volume by water displacement.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical

		<p>Weathering</p> <ul style="list-style-type: none"> Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
CONTENT STANDARD / STRAND / DISCIPLINE	DC.8.8.	Waves: Broad Concept: Waves have characteristic properties that are common to all types of wave. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	8.8.6.	<p>Demonstrate that vibrations in materials set up wave disturbances, such as sound and earthquake waves, that spread away from the source.</p> <ul style="list-style-type: none"> Teacher Resource CD: Rocks, Minerals, and Earth Processes

**Washington D.C. Learning Standards
Science
Grade 9**

CONTENT STANDARD / STRAND / DISCIPLINE	DC.ES.1.	Earth Science: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	ES.1.1.	<p>Know the elements of scientific methodology (identification of a problem, hypothesis formulation and prediction, performance of experimental tests, analysis of data, falsification, developing conclusions, reporting results) and be able to use a sequence of those elements to solve a problem or test a hypothesis. Also understand the limitations of any single scientific method (sequence of elements) in solving problems.</p> <ul style="list-style-type: none"> Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification

		<ul style="list-style-type: none"> • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	ES.1.3.	<p>Recognize the cumulative nature of scientific evidence.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	ES.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	ES.1.6.	<p>Plan and conduct scientific investigations in order to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a

		<p>Mineral</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
<p>STANDARD / ESSENTIAL SKILL</p>	<p>ES.1.10.</p>	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis

		<p>of Minerals</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	ES.1.13.	<p>Apply mathematical relationships involving proportionalities, linear relations, quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
CONTENT STANDARD / STRAND / DISCIPLINE	DC.ES.2.	<p>Earth Science: The Universe: Broad Concept: Galaxies are made of billions of stars and form most of the visible mass of the universe. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	ES.2.2.	<p>Describe various instrumentation used to study deep space and the solar system (e.g., telescopes which record in various parts of the electromagnetic spectrum, including visible, infrared, and radio, refracting telescope, reflecting telescope, spectrophotometer.)</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
CONTENT STANDARD / STRAND / DISCIPLINE	DC.ES.4.	<p>Earth Science: The Earth System: Broad Concept: Interactions among the solid Earth, hydrosphere, and atmosphere have resulted in ongoing evolution of the earth system over geologic time. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	ES.4.5.	<p>Explain the possible mechanisms and effects of atmospheric changes brought on by things such as acid rain, smoke, volcanic dust, greenhouse gases, and ozone depletion.</p> <ul style="list-style-type: none"> • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	ES.4.9.	<p>Describe the development and dynamics of climatic changes over time corresponding to changes in the Earth's geography (continental drift), orbital parameters (the Milankovitch cycles), and atmospheric composition.</p>

		<ul style="list-style-type: none"> Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification
STANDARD / ESSENTIAL SKILL	ES.4.10.	<p>Describe the nitrogen and carbon cycles and their roles in the improvement of soils for agriculture.</p> <ul style="list-style-type: none"> Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD / STRAND / DISCIPLINE	DC.ES.6.	<p>Earth Science: Rock Cycle: Broad Concept: Rocks and minerals are continually being modified within the rock cycle. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	ES.6.1.	<p>Differentiate among the processes of weathering, erosion, transportation of materials, deposition, and soil formation.</p> <ul style="list-style-type: none"> Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	ES.6.2.	<p>Illustrate the various processes and rock types that are involved in the rock cycle, and describe how the total amount of material stays the same throughout formation, weathering, sedimentation, and reformation.</p> <ul style="list-style-type: none"> Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	ES.6.3.	<p>Explain the absolute and relative dating methods used to measure geologic time.</p> <ul style="list-style-type: none"> Teacher Resource CD: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	ES.6.4.	<p>Recognize and explain geologic evidence - including fossils and radioactive dating - which indicates the age of the Earth.</p> <ul style="list-style-type: none"> Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time

STANDARD / ESSENTIAL SKILL	ES.6.5.	Trace the evolution of the solid Earth in terms of the major geologic eras. <ul style="list-style-type: none"> • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time
CONTENT STANDARD / STRAND / DISCIPLINE	DC.ES.7.	Earth Science: Plate Tectonics: Broad Concept: Plate tectonics operating over geologic time have altered the features of land, sea, and mountains on the Earth's surface. As the basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	ES.7.1.	Explain the work of Alfred Wegener, including reintroduction of the idea of moving continents, and the skepticism with which his theories were first received and why. <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	ES.7.2.	Analyze the evidence that supports the hypothesis of movement of the plates (from paleomagnetism, paleontology, paleoclimate, and the continuity of geological structure and stratigraphy across ocean basins). <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	ES.7.3.	Trace the development of a lithospheric plate from its growing margin at a divergent boundary (mid-ocean ridge) to its destructive margin at a convergent boundary (subduction zone). <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	ES.7.4.	Explain the relationship between convection currents and the motion of the lithospheric plates. <ul style="list-style-type: none"> • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	ES.7.5.	Explain why, how, and where earthquakes occur, how they are located and measured, and the ways that they can cause damage (directly by shaking and secondarily by fire, tsunami, landsliding, or liquefaction). <ul style="list-style-type: none"> • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD / STRAND / DISCIPLINE	DC.B.1.	Biology: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD /	B.1.1.	Know the elements of scientific methodology (identification of a

ESSENTIAL SKILL		<p>problem, hypothesis formulation and prediction, performance of experimental tests, analysis of data, falsification, developing conclusions, reporting results) and be able to use a sequence of those elements to solve a problem or test a hypothesis. Also understand the limitations of any single scientific method (sequence of elements) in solving problems.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	B.1.3.	<p>Recognize the cumulative nature of scientific evidence.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	B.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p>

		<ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	B.1.6.	<p>Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea
STANDARD / ESSENTIAL SKILL	B.1.10.	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic

		<p>Time</p> <ul style="list-style-type: none"> • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
<p>STANDARD / ESSENTIAL SKILL</p>	<p>B.1.11.</p>	<p>Formulate and revise explanations using logic and evidence.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea

		<ul style="list-style-type: none"> • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	B.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
CONTENT STANDARD / STRAND / DISCIPLINE	DC.B.5.	<p>Biology: Biological Evolution: Broad Concept: Evolution and biodiversity are the result of genetic changes that occur in constantly changing environments. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	B.5.4.	<p>Explain that biological diversity, episodic speciation, and mass extinction are depicted in the fossil record, comparative anatomy, and other evidence.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Fossils and Geologic Time
CONTENT STANDARD / STRAND / DISCIPLINE	DC.C.1.	<p>Chemistry: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:</p>
STANDARD / ESSENTIAL SKILL	C.1.1.	<p>Know the elements of scientific methodology (identification of a problem, hypothesis formulation and prediction, performance of experimental tests, analysis of data, falsification, developing conclusions, reporting results) and be able to use a sequence of those elements to solve a problem or test a hypothesis. Also understand the limitations of any single scientific method (sequence of elements) in solving problems.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral

		<ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	C.1.3.	<p>Recognize the cumulative nature of scientific evidence.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and

		<p>Identification</p> <ul style="list-style-type: none"> • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	C.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	C.1.6.	<p>Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea
STANDARD / ESSENTIAL SKILL	C.1.10.	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral

		<p>Color</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	C.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
CONTENT STANDARD / STRAND / DISCIPLINE	DC.C.2.	<p>Chemistry: Properties of Matter: Broad Concept: Physical and chemical properties can be used to classify and describe matter. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	C.2.1.	<p>Investigate and classify properties of matter, including density, melting point, boiling point, and solubility.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
STANDARD / ESSENTIAL SKILL	C.2.2.	<p>Determine the definitions of and use properties such as mass, volume, temperature, density, melting point, boiling point, conductivity, solubility, and color to differentiate between types of matter.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
STANDARD / ESSENTIAL SKILL	C.2.5.	<p>Infer and explain that physical properties of substances, such as melting points, boiling points, and solubility are due to the strength of their</p>

		<p>various types (interatomic, intermolecular, or ionic) of bonds.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes • Virtual Laboratory: Mineral Identification
CONTENT STANDARD / STRAND / DISCIPLINE	DC.C.3.	Chemistry: Acids and Bases: Broad Concept: Acids, bases, and salts are three classes of compounds that form ions in water solutions. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	C.3.1.	<p>Explain that strong acids (and bases) fully dissociate and weak acids (and bases) partially dissociate.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	C.3.4.	<p>Describe the observable properties of acids, bases, and salt solutions.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	C.3.5.	<p>Explain the Arrhenius theory of acids and bases: An acid donates hydrogen ions (hydronium) and a base donates hydroxide ions to a water solution.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig

CONTENT STANDARD / STRAND / DISCIPLINE	DC.C.7.	Chemistry: Chemical Bonds: Broad Concept: The enormous variety of physical, chemical, and biological properties of matter depends upon the ability of atoms to form bonds. This ability results from the electrostatic forces between electrons and protons and between atoms and molecules. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	C.7.3.	Recognize names and chemical formulas for simple molecular compounds (such as nitrous oxide), ionic compounds, including those with polyatomic ions, simple organic compounds, and acids, including oxyacids. <ul style="list-style-type: none"> Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	C.7.9.	Predict chemical formulas based on the number of valence electrons. <ul style="list-style-type: none"> Virtual Laboratory: Mineral Identification
CONTENT STANDARD / STRAND / DISCIPLINE	DC.C.8.	Chemistry: Conservation of Matter: Broad Concept: The microscopic conservation of atoms in chemical reactions implies the macroscopic principle of conservation of matter and the ability to calculate the mass of products and reactants. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	C.8.1.	Name substances and describe their reactions based on Lavoisier's system and explain how this system contributed to the rapid growth of chemistry by enabling scientists everywhere to share their findings about chemical reactions with one another without ambiguity. <ul style="list-style-type: none"> Virtual Laboratory: Mineral Identification
CONTENT STANDARD / STRAND / DISCIPLINE	DC.C.12.	Chemistry: Chemical Thermodynamics: Broad Concept: Energy is exchanged or transformed in all chemical reactions and physical changes of matter. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	C.12.3.	Explain how energy is released when a material condenses or freezes and is absorbed when a material evaporates or melts. <ul style="list-style-type: none"> Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks
CONTENT STANDARD / STRAND / DISCIPLINE	DC.C.13.	Chemistry: Organic and Biochemistry: Broad Concept: The bonding characteristics of carbon lead to the possibility of many different molecules of many sizes, shapes, and chemical properties. This provides the biochemical basis of life. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	C.13.4.	Convert between chemical formulas, structural formulas, and names of simple common organic compounds (hydrocarbons, proteins, fats, carbohydrates). <ul style="list-style-type: none"> Virtual Laboratory: Mineral Identification
CONTENT STANDARD / STRAND / DISCIPLINE	DC.P.1.	Physics: Scientific Investigation and Inquiry: Broad Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	P.1.1.	Know the elements of scientific methodology (identification of a problem, hypothesis formulation and prediction, performance of experimental tests, analysis of data, falsification, developing conclusions, reporting results) and be able to use a sequence of those elements to

		<p>solve a problem or test a hypothesis. Also understand the limitations of any single scientific method (sequence of elements) in solving problems.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	P.1.3.	<p>Recognize the cumulative nature of scientific evidence.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	P.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and

		<p>Pressure on Rock Layers</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	P.1.6.	<p>Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea
STANDARD / ESSENTIAL SKILL	P.1.10.	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification

		<ul style="list-style-type: none"> • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	P.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
CONTENT STANDARD / STRAND / DISCIPLINE	DC.P.4.	Physics: Mechanics of Fluids: Broad Concept: All objects experience a buoyant force when immersed in a fluid. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	P.4.3.	<p>Identify that the pressure in an incompressible fluid (e.g., water) is a function of density; depth; and gravitational acceleration.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
CONTENT STANDARD / STRAND / DISCIPLINE	DC.P.6.	Physics: Waves: Broad Concept: Waves carry energy from place to place without the transfer of matter. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	P.6.10.	<p>Predict and explain how light travels through a transparent medium at a speed, v, less than c. The index of refraction of the medium is defined to be $n = c/v$.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	P.6.11.	<p>Explain that when a light ray passes from air into a transparent substance, such as glass, having index of refraction n, it is refracted through an angle given by Snell's law, $n \sin A = n \sin B$, where A is the angle of incidence of the ray and B is the angle of refraction.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	P.6.13.	<p>Identify transverse and longitudinal waves in mechanical media such as springs, ropes, and the Earth (seismic waves).</p> <ul style="list-style-type: none"> • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT	DC.E.1.	Environmental Science: Scientific Investigation and Inquiry: Broad

STANDARD / STRAND / DISCIPLINE		Concept: Scientific progress is made by asking relevant questions and conducting careful investigations. As a basis for understanding this concept, and to address the content in this grade, students should develop their own questions and perform investigations. Students:
STANDARD / ESSENTIAL SKILL	E.1.1.	<p>Know the elements of scientific methodology (identification of a problem, hypothesis formulation and prediction, performance of experimental tests, analysis of data, falsification, developing conclusions, reporting results) and be able to use a sequence of those elements to solve a problem or test a hypothesis. Also understand the limitations of any single scientific method (sequence of elements) in solving problems.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	E.1.3.	<p>Recognize the cumulative nature of scientific evidence.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea

		<ul style="list-style-type: none"> Teacher Resource CD: Fossils and Geologic Time
STANDARD / ESSENTIAL SKILL	E.1.4.	<p>Recognize the use and limitations of models and theories as scientific representations of reality.</p> <ul style="list-style-type: none"> Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
STANDARD / ESSENTIAL SKILL	E.1.6.	<p>Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.</p> <ul style="list-style-type: none"> Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea
STANDARD / ESSENTIAL SKILL	E.1.10.	<p>Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)</p> <ul style="list-style-type: none"> Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals

		<ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 4 Lab 6 Activity 2: Chemical Weathering • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Earth Resources: Unit 4 Lab 7 Activity 2: Soil Horizons • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	E.1.11.	<p>Formulate and revise explanations using logic and evidence.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock • Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers • Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization • Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks • Earth Resources: Unit 1 Lab 2 Activity 2: Sedimentary Rocks • Earth Resources: Unit 1 Lab 2 Activity 3: Metamorphic Rocks • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • Earth Resources: Unit 2 Lab 3 Activity 2: Mineral Luster • Earth Resources: Unit 2 Lab 3 Activity 3: The Streak of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 4: Testing the Hardness of a Mineral • Earth Resources: Unit 2 Lab 3 Activity 5: Cleavage and Fracture • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Earth Resources: Unit 2 Lab 4 Activity 2: Chemical Analysis of Minerals • Earth Resources: Unit 2 Lab 4 Activity 3: Using the Flame Test to Identify Unknown Mineral Samples • Earth Resources: Unit 3 Lab 5 Activity 1: Fossils and Geologic Time • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 3 Lab 5 Activity 3: Fossil Formation - Preparing Molds and Casts • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering

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STANDARD / ESSENTIAL SKILL	E.1.13.	<p>Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
CONTENT STANDARD / STRAND / DISCIPLINE	DC.E.3.	<p>Environmental Science: Ecosystems: Broad Concept: Stability in an ecosystem is a balance between competing effects. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	E.3.8.	<p>Describe the role of nitrogen and carbon cycles in the improvement of soils for agriculture.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD / STRAND / DISCIPLINE	DC.E.5.	<p>Environmental Science: Natural Resources: Broad Concept: Numerous Earth resources are used to sustain human affairs. The abundance and accessibility of these resources can influence their use. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	E.5.4.	<p>Demonstrate knowledge of the distribution of natural resources in the U.S. and the world, and explain how natural resources influence relationships among nations.</p> <ul style="list-style-type: none"> • Virtual Laboratory: Mineral Identification
STANDARD / ESSENTIAL SKILL	E.5.5.	<p>Recognize and describe the role of natural resources in providing the raw materials for an industrial society.</p> <ul style="list-style-type: none"> • Virtual Laboratory: Mineral Identification
CONTENT STANDARD / STRAND / DISCIPLINE	DC.E.6.	<p>Environmental Science: Watersheds and Wetlands: Broad Concept: Water is continually being recycled by the hydrologic cycle through the watersheds, oceans, and the atmosphere by processes such as evaporation, condensation, precipitation runoff, and infiltration. This life-giving cycle is continually and increasingly impacted by human affairs. As a basis for understanding this concept, students:</p>
STANDARD / ESSENTIAL SKILL	E.6.5.	<p>Describe the causes of, and the efforts to control, erosion in the Chesapeake Bay.</p> <ul style="list-style-type: none"> • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock
CONTENT STANDARD / STRAND / DISCIPLINE	DC.E.8.	<p>Environmental Science: Environmental Quality: Broad Concept: Environmental quality is linked to natural and human-induced hazards, and the ability of science and technology to meet local, national, and</p>

DISCIPLINE		global challenges. As a basis for understanding this concept, students:
STANDARD / ESSENTIAL SKILL	E.8.1.	Differentiate between natural pollution and pollution caused by humans and give examples of each. <ul style="list-style-type: none"> Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	E.8.2.	Describe sources of air and water pollution and explain how air and water quality impact wildlife, vegetation, and human health. <ul style="list-style-type: none"> Teacher Resource CD: Rocks, Minerals, and Earth Processes
STANDARD / ESSENTIAL SKILL	E.8.3.	Describe the historical and current methods of water management and recycling, including the waste treatment practices of landfills, incineration, reuse/recycle and source reduction. <ul style="list-style-type: none"> Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure
STANDARD / ESSENTIAL SKILL	E.8.6.	Identify natural Earth hazards, such as earthquakes and hurricanes, and identify the regions in which they occur as well as the short-term and long-term effects on the environment and on people. <ul style="list-style-type: none"> Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle Earth Resources: Unit 1 Lab 1 Activity 2: Creating a Sedimentary Rock Earth Resources: Unit 1 Lab 1 Activity 3: Effects of Heat and Pressure on Rock Layers Earth Resources: Unit 1 Lab 1 Activity 4: Crystallization Earth Resources: Unit 1 Lab 2 Activity 1: Igneous Rocks Earth Resources: Unit 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea Teacher Resource CD: Rocks, Minerals, and Earth Processes

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