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

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Tennessee Curriculum Standards
Science
Grade 6

CONTENT STANDARD	**TN.6.0.**	**Life Science: Biological Change: The student will understand that living things have changed over time.**
LEARNING EXPECTATION	**6.6.1.**	Investigate the fossil evidence found in sedimentary rock layers.
BENCHMARK	**6.6.1.a.**	Differentiate between the relative age of fossils in a sedimentary rock diagram. • 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
BENCHMARK	**6.6.1.b.**	Determine the geologic age of an object using a diagram or a time line. • 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 • Teacher Resource CD: Fossils and Geologic Time
CONTENT STANDARD	**TN.6.0.**	**Life Science: Biological Change: The student will understand that living things have changed over time.**
LEARNING EXPECTATION	**6.6.2.**	Recognize various types of evidence which indicate that life forms have changed over time.
BENCHMARK	**6.6.2.a.**	Identify additional lines of scientific evidence, other than fossils, that support the idea of change over time. • 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	**TN.9.0.**	**Earth and Space Science: Earth Features: The student will understand that the earth has many geological features that are constantly changing.** • **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** • **Teacher Resource CD: Fossils and Geologic Time**
CONTENT STANDARD	**TN.10.0.**	**Earth and Space Science: Earth Resources: The student will investigate the properties, uses, and conservation of earth's resources.** • **Virtual Laboratory: Mineral Identification**
CONTENT STANDARD	**TN.12.0.**	**Physical Science: Structure and Properties of Matter: The student will investigate the characteristic properties of matter.** • **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**

Tennessee Curriculum Standards
Science
Grade 7

CONTENT STANDARD	**TN.9.0.**	**Earth and Space Science: Earth Features: The student will understand that the earth has many geological features that are constantly changing.** • **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	**TN.12.0.**	**Physical Science: Structure and Properties of Matter: The student will investigate the characteristic properties of matter.**
LEARNING EXPECTATION	**7.12.1.**	Distinguish among elements, compounds and mixtures.
BENCHMARK	**7.12.1.a.**	Differentiate among elements, compounds, and mixtures. • Virtual Laboratory: Mineral Identification
CONTENT STANDARD	**TN.12.0.**	**Physical Science: Structure and Properties of Matter: The student will investigate the characteristic properties of matter.**
LEARNING EXPECTATION	**7.12.2.**	Identify and measure the simple properties of common substances.
BENCHMARK	**7.12.2.b.**	Identify the mass, volume, density, boiling point, melting point, and solubility of a given substance. • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity
BENCHMARK	**7.12.2.c.**	Measure and/or calculate the mass, volume, density, and temperature of a given substance. • Earth Resources: Unit 2 Lab 3 Activity 6: Specific Gravity • Earth Resources: Unit 4 Lab 6 Activity 1: Mechanical Weathering • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig

Tennessee Curriculum Standards
Science
Grade 8

CONTENT STANDARD	**TN.3.0.**	**Life Science: Food Production and Energy for Life: The student will study the basic parts of plants, investigate how plants produce food,**

		and discover that plants and animals use food to sustain life. • **Earth Resources: Unit 4 Lab 7 Activity 1: Soil Structure**
CONTENT STANDARD	**TN.9.0.**	**Earth and Space Science: Earth Features: The student will understand that the earth has many geological features that are constantly changing.**
LEARNING EXPECTATION	**8.9.1.**	Understand the characteristics of the earth's layers and the location of major plates.
BENCHMARK	**8.9.1.a.**	Differentiate among earth layers according to their physical properties. • 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 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes • Virtual Laboratory: Mineral Identification
BENCHMARK	**8.9.1.b.**	Illustrate the major plate boundaries. • 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
CONTENT STANDARD	**TN.9.0.**	**Earth and Space Science: Earth Features: The student will understand that the earth has many geological features that are constantly changing.**
LEARNING	**8.9.2.**	Describe the forces and processes that shape the earth.

EXPECTATION		
BENCHMARK	**8.9.2.a.**	Demonstrate how plate movements cause major geological events. • Earth Resources: Unit 1 Lab 1 Activity 1: The Rock Cycle • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes
BENCHMARK	**8.9.2.b.**	Compare and contrast processes that shape the earth in the past with those shaping the earth today (e.g., plate movements, human activity, mountain building). • 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 • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD	**TN.10.0.**	**Earth and Space Science: Earth Resources: The student will investigate the properties, uses, and conservation of the earth's resources.**
LEARNING EXPECTATION	**8.10.1.**	Investigate the characteristics of minerals and their uses.
BENCHMARK	**8.10.1.a.**	Distinguish between common minerals found in rock samples using test kits, descriptive charts, etc. • 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

BENCHMARK	**8.10.1.b.**	Describe how various minerals are used. • 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
CONTENT STANDARD	**TN.10.0.**	**Earth and Space Science: Earth Resources: The student will investigate the properties, uses, and conservation of the earth's resources.**
LEARNING EXPECTATION	**8.10.2.**	Describe the rock cycle.
BENCHMARK	**8.10.2.a.**	Label a diagram depicting the processes of the rock cycle. • 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 • Teacher Resource CD: Rocks, Minerals, and Earth Processes
BENCHMARK	**8.10.2.b.**	Explain how fossils are used to understand the earth's past. • 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	**TN.10.0.**	**Earth and Space Science: Earth Resources: The student will investigate the properties, uses, and conservation of the earth's resources.**
LEARNING EXPECTATION	**8.10.3.**	Investigate how human activities affect the earth's land, oceans, and atmosphere.

BENCHMARK	**8.10.3.a.**	Analyze and evaluate the impact of man's use of earth's resources. • Virtual Laboratory: Mineral Identification
BENCHMARK	**8.10.3.b.**	Research how technological advances have impacted the environment (e.g., the use of fertilizers, fossil fuels). • Virtual Laboratory: Mineral Identification
CONTENT STANDARD	**TN.12.0.**	**Physical Science: Structure and Properties of Matter: The student will investigate the characteristic properties of matter.** • **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	**TN.13.0.**	**Physical Science: Interactions of Matter: The student will investigate the interactions of matter.**
LEARNING EXPECTATION	**8.13.1.**	Understand the difference between acids and bases and how indicators are used.
BENCHMARK	**8.13.1.a.**	Determine whether a substance is an acid or base using an indicator.

		• 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	**TN.13.0.**	**Physical Science: Interactions of Matter: The student will investigate the interactions of matter.**
LEARNING EXPECTATION	**8.13.2.**	Differentiate between physical and chemical changes.
BENCHMARK	**8.13.2.a.**	Determine whether an interaction between substances results in a physical or a chemical change. • Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • 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
BENCHMARK	**8.13.2.b.**	Recognize that oxygen, in combination with another substance, results in a chemical change. • 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
CONTENT STANDARD	**TN.13.0.**	**Physical Science: Interactions of Matter: The student will investigate the interactions of matter.**
LEARNING EXPECTATION	**8.13.3.**	Understand what a chemical equation represents.
BENCHMARK	**8.13.3.a.**	Identify the reactants and/or products in a chemical reaction. • 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
BENCHMARK	**8.13.3.b.**	Explain why the mass of the reactants is the same as the mass of the products

		during a chemical change. • 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
BENCHMARK	8.13.3.c.	Describe how temperature and pH affect the rate of a reaction. • 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

Tennessee Curriculum Standards
Science
Grade 9

CONTENT STANDARD	TN.6.0.	**Life Science: Biological Evolution: The student will investigate physical, environmental, and chemical evidence that indicates that life on earth has changed over time.**
LEARNING EXPECTATION	LS.6.1.	Investigate the process of fossil formation. • Teacher Resource CD: Fossils and Geologic Time
CONTENT STANDARD	TN.6.0.	**Biology I: Biological Evolution: The student will investigate the process of natural selection and examine the evidence for biological evolution.**
LEARNING EXPECTATION	BI.6.1.	Interpret and evaluate the evidence for biological evolution in the fossil record. • Teacher Resource CD: Fossils and Geologic Time
CONTENT STANDARD	TN.3.0.	**Chemistry I: Interactions of Matter: The student will examine the interactions of matter.**
LEARNING EXPECTATION	CI.3.2.	Analyze chemical reactions. • 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
LEARNING EXPECTATION	**CI.3.3.**	Apply the mathematics of chemical formulas and equations. • Virtual Laboratory: Mineral Identification
CONTENT STANDARD	**TN.4.0.**	**Chemistry I: Solutions and Acids/Bases: The student will investigate the characteristics of solutions with particular attention to acids and bases.**
LEARNING EXPECTATION	**CI.4.2.**	Investigate the characteristics of acids and bases. • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
CONTENT STANDARD	**TN.3.0.**	**Chemistry II: Reactions: The student will investigate types of reactions, stoichiometry, equilibrium phenomena, kinetics, and thermodynamics of chemical reactions.**
LEARNING EXPECTATION	**CII.3.1.**	Investigate various chemical reactions associated with acids and bases, precipitation, and oxidation and reduction. • 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
LEARNING EXPECTATION	**CII.3.3.**	Explore the concept of physical and chemical equilibrium. • 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
LEARNING EXPECTATION	**CII.3.4.**	Investigate chemical kinetics and the rate of reaction concept. • 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

LEARNING EXPECTATION	**CII.3.5.**	Explore the concept of thermodynamics. • 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
CONTENT STANDARD	**TN.3.0.**	**Earth Science: Cycles in the Earth System: The student will investigate the principal features of the cycles in the Earth system.**
LEARNING EXPECTATION	**ES.3.1.**	Explain the components of the tectonic cycle. • 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
LEARNING EXPECTATION	**ES.3.2.**	Investigate the rock cycle. • 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 • Teacher Resource CD: Rocks, Minerals, and Earth Processes
LEARNING EXPECTATION	**ES.3.6.**	Evaluate the role of living organisms within the Earth system cycles. • 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 • Teacher Resource CD: Fossils and Geologic Time
CONTENT STANDARD	**TN.4.0.**	**Earth Science: Geologic History: The student will explore the geologic history of the Earth.**
LEARNING EXPECTATION	**ES.4.1.**	Interpret and evaluate the nature of geologic time. • 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 • Teacher Resource CD: Fossils and Geologic Time
LEARNING EXPECTATION	**ES.4.2.**	Investigate the evolution of Earth. • 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 • Teacher Resource CD: Fossils and Geologic Time
LEARNING EXPECTATION	**ES.4.3.**	Interpret and evaluate the evidence for biological evolution in the fossil record. • 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
LEARNING EXPECTATION	**ES.4.4.**	Demonstrate the effect of the environment on the formation and extinction of species. • 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
CONTENT STANDARD	**TN.2.0.**	**Geology: Matter and Minerals: The student will explore matter and how it relates to the formation of minerals.**
LEARNING EXPECTATION	**G.2.1.**	Investigate the atom as the basic building block of all matter. • 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 5 Lab 9 Activity 1: Geology Dig • Teacher Resource CD: Rocks, Minerals, and Earth Processes • Virtual Laboratory: Mineral Identification
LEARNING EXPECTATION	**G.2.2.**	Apply the periodic table as a learning tool. • 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
LEARNING EXPECTATION	**G.2.3.**	Investigate the structure, geometry, and shape of crystals. • 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
LEARNING EXPECTATION	**G.2.4.**	Distinguish between physical and chemical properties of minerals. • 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
LEARNING EXPECTATION	**G.2.5.**	Investigate the location, abundance, and use of minerals. • 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
CONTENT STANDARD	**TN.3.0.**	**Geology: Rocks and the Rock Cycle: The student will investigate the three rock classes and the rock cycle.**

LEARNING EXPECTATION	**G.3.1.**	Identify and differentiate among the three rock classes. • 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 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
LEARNING EXPECTATION	**G.3.2.**	Examine the processes responsible for forming the three rock classes. • 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 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
LEARNING EXPECTATION	**G.3.3.**	Examine characteristics within each rock class. • 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 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
LEARNING EXPECTATION	**G.3.4.**	Analyze and interpret the rock cycle. • 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 • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD	**TN.4.0.**	**Geology: Geologic History: The student will explore the geologic history of the Earth and evidence of life through time.**
LEARNING EXPECTATION	**G.4.1.**	Interpret and evaluate the nature of geologic time. • 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 • Teacher Resource CD: Fossils and Geologic Time

LEARNING EXPECTATION	**G.4.2.**	Investigate the evolution of Earth. • 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 • Teacher Resource CD: Fossils and Geologic Time
LEARNING EXPECTATION	**G.4.3.**	Investigate the history of life. • 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
LEARNING EXPECTATION	**G.4.4.**	Interpret and evaluate the fossil record for evidence of biological evolution. • 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
LEARNING EXPECTATION	**G.4.5.**	Demonstrate the effect of the environment in the formation and extinction of species through geologic time using fossils. • 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
CONTENT STANDARD	**TN.5.0.**	**Geology: Plate Tectonics: The student will relate the theory of plate tectonics to the evidence for continental drift and seafloor spreading.**
LEARNING	**G.5.1.**	Recognize different types of plate boundaries (e.g., divergent,

EXPECTATION		convergent, and transform including continental vs. oceanic). • 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
LEARNING EXPECTATION	**G.5.2.**	Interpret evidence for plate tectonics using paleomagnetism, fossil record, continental boundaries, and hot spots. • 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
LEARNING EXPECTATION	**G.5.3.**	Recognize that convection currents are the driving mechanisms for plate tectonics. • 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
LEARNING EXPECTATION	**G.5.4.**	Describe the processes associated with volcanoes, earthquakes, and mountain building. • 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 • Earth Resources: Unit 3 Lab 5 Activity 2: Fossil Sorting and Identification • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD	**TN.6.0.**	**Geology: Landforms: The student will investigate landforms created by many different surficial processes and their relationships to various sources of energy in the Earth System.**
LEARNING EXPECTATION	**G.6.2.**	Associate surface processes such as wind, glaciers, gravity, oceans, rivers, and mankind with resulting landforms. • 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
CONTENT STANDARD	**TN.3.0.**	**Physical Science: Interactions of Matter: The student will investigate the interactions of matter.**
LEARNING EXPECTATION	**PS.3.1.**	Investigate chemical and physical changes.

		• Earth Resources: Unit 2 Lab 3 Activity 1: Identifying Mineral Color • 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
LEARNING EXPECTATION	**PS.3.2.**	Analyze chemical equations. • Virtual Laboratory: Mineral Identification
LEARNING EXPECTATION	**PS.3.3.**	Compare and contrast acids and bases. • Earth Resources: Unit 5 Lab 9 Activity 1: Geology Dig
CONTENT STANDARD	**TN.1.0.**	**Scientific Research: Ethical Practices: The student will demonstrate ethical practices.**
LEARNING EXPECTATION	**SR.1.1.**	Critically examine data to determine its significance. • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time
LEARNING EXPECTATION	**SR.1.2.**	Repeat trials to enhance the reliability of data. • Earth Resources: Unit 4 Lab 8 Activity 1: Recreating Pangaea • Teacher Resource CD: Fossils and Geologic Time
LEARNING EXPECTATION	**SR.1.5.**	Follow safety procedures in the classroom, laboratory, and home environments. • 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
CONTENT STANDARD	**TN.2.0.**	**Scientific Research: Critical Thinking Skills: The student will identify and clarify problems using critical thinking skills.**
LEARNING EXPECTATION	**SR.2.1.**	Use scientific instruments for extending the human senses in observation. • 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
LEARNING EXPECTATION	**SR.2.2.**	Recognize limits to scientific investigations. • 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
LEARNING EXPECTATION	**SR.2.3.**	Use technological tools and mathematical models to analyze problems or questions. • 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
LEARNING EXPECTATION	**SR.2.5.**	Analyze and study classical problems.

		• 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	**TN.3.0.**	**Scientific Research: Scientific Inquiry: The student will design and implement a strategy for solving a scientific problem or a strategy for answering a scientific question.**
LEARNING EXPECTATION	**SR.3.1.**	Practice appropriate safety procedures. • 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
LEARNING EXPECTATION	**SR.3.4.**	Collect data using a variety of scientific tools. • 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
LEARNING EXPECTATION	**SR.3.5.**	Verify data for accuracy. • 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 2 Lab 4 Activity 1: Idiochromatic and Allochromatic Minerals • Teacher Resource CD: Rocks, Minerals, and Earth Processes
CONTENT STANDARD	**TN.4.0.**	**Scientific Research: Analyzing and Evaluating Data: The student will develop abilities to analyze and evaluate data.**
LEARNING EXPECTATION	**SR.4.2.**	Evaluate data based in terms of accuracy and precision. • 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
LEARNING EXPECTATION	**SR.4.3.**	Make conclusions based on data analysis and evaluations. • 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	**TN.5.0.**	**Scientific Research: Communicating Scientific Results: The student will publish, present, and communicate results of a scientific investigation.**
LEARNING EXPECTATION	**SR.5.1.**	Present scientific reports in a clear, accurate, and appropriate manner to a variety of audiences. • 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
LEARNING EXPECTATION	**SR.5.2.**	Communicate findings in order to extend the research base. • 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