

Objectives, Concepts & Skills, and Vocabulary

UNIT	LAB	OBJECTIVES
1: Exploring Rocks	1: The Rock Cycle	<ul style="list-style-type: none"> Describe the processes involved in the rock cycle Identify physical properties of sedimentary, metamorphic, and igneous rock samples Model the processes involved in the formation of a sedimentary rock Examine effects of heat and pressure on rock layers Identify how cooling rates affect crystal formation
	2: Rock Formation and Identification	<ul style="list-style-type: none"> Classify igneous rocks as intrusive or extrusive Learn about grain size and cooling rates Examine physical characteristics of igneous, sedimentary, and metamorphic rocks Classify sedimentary rocks as organic, chemical, or clastic Identify how igneous, sedimentary, and metamorphic rocks are formed
2: Exploring Minerals	3: Mineral Formation and Identification	<ul style="list-style-type: none"> Learn about the physical properties of minerals Identify minerals as metallic or non-metallic Calculate the specific gravity of various mineral samples
	4: How Minerals Get Their Color	<ul style="list-style-type: none"> Learn how we see colors Identify the streak of various mineral samples Classify minerals as idiochromatic or allochromatic Conduct a flame test on known and unknown samples Identify unknown mineral samples
3: Hunting for Fossils	5: Fossil Formation and Identification	<ul style="list-style-type: none"> Learn about geologic time and the divisions of the time scale Identify fossils from different geologic time periods Simulate the formation of fossil molds and casts
4: Earth's Processes	6: Weathering	<ul style="list-style-type: none"> Define mechanical and chemical weathering Explore how rocks are mechanically weathered Investigate the rate of weathering Investigate how acid chemically weathers some rocks
	7: Soils	<ul style="list-style-type: none"> Identify and describe various types of soils Create soil horizons Analyze and compare local soil horizons
	8: Continental Drift	<ul style="list-style-type: none"> Model the breakup of Pangaea Learn about plate tectonics and continental drift Simulate sea floor spreading
5: Comprehensive Inquiry Investigation	9: Culminating Lab	<ul style="list-style-type: none"> Identify unknown rock, mineral, gem, and fossil samples Make observations to identify samples Learn about the differences among rocks, minerals, and fossils



CONCEPTS & SKILLS	VOCABULARY
Analytical thinking, making observations and inferences, the rock cycle, sedimentary rock, metamorphic rock, igneous rock, magma, weathering, erosion, lithification, crystallization, uplifting	Crust, plate tectonics, mantle, core, minerals, homogenous, rocks, rock cycle, igneous rocks, magma, lava, extrusive rock, intrusive rock, plutons, batholiths, sedimentary rocks, lithification, fossils, weathering, erosion, clastic rocks, metamorphic rocks
Analytical thinking, making observations and inferences, the rock cycle, sedimentary rock, metamorphic rock, igneous rock, intrusive and extrusive rocks, clastic rock, organic rock, and chemical rock, foliation and layering, heat and pressure, magma and lava, weathering, erosion, lithification, crystallization, uplifting	Mineral, rock, igneous rocks, magma, intrusive igneous rocks, extrusive igneous rocks, lava, weathering, sediments, sedimentary rocks, erosion, deposition, compaction, cementation, clastic rock, organic rocks, fossil fuel, nonrenewable resources, chemical rocks, metamorphic rocks
Analytical thinking, making observations and inferences, experimental design, minerals, luster, cleavage and fracture, color, specific gravity, density, hardness, uses of minerals	Mineral, crust, mantle, core, cleavage, fracture, streak, streak plate, luster, metallic luster, nonmetallic luster, specific gravity, hardness, Mohs hardness scale
Analytical thinking, making observations and inferences, experimental design, physical properties of minerals, idiochromatic minerals, allochromatic minerals, flame test, chemical composition of minerals, electromagnetic spectrum	Prism, wavelength, electromagnetic spectrum, idiochromatic minerals, allochromatic minerals, flame test
Analytical thinking, making observations and inferences, experimental design, fossils, molds, casts, geologic time scale	Fossils, climate, relative age, index fossil, geologic time scale, eons, eras, periods, epochs, sedimentary rock, relative dating, absolute dating, permineralization, petrification, recrystallization, molds, casts
Analytical thinking, making observations and inferences, experimental design, mechanical weathering, hardness, erosion, chemical weathering, carbonic acid	Weathering, erosion, deposition, deconstructive forces, constructive force, mechanical weathering, glaciers, abrasion, chemical weathering, carbonic acid
Analytical thinking, making observations and inferences, experimental design, soil identification, soil horizons, clay, silt, sand, humus, loam, porosity and permeability, soil formation	Soil, humus, loam, permeability, porosity, pedogenesis, bedrock, climate, topography, soil profile, soil horizons, topsoil, leaching
Analytical thinking, making observations and inferences, sea floor spreading, Pangaea, plate tectonics, continental drift, fossil record	Fossils, Pangaea, continental drift, lithosphere, plates, asthenosphere, plate tectonics, sonar mapping, mid-ocean ridge, rift, trenches, subduction, sea-floor spreading
Mineral identification, rock identification, fossil identification, rock cycle, mineral color, weathering	Geology, minerals, gemstones, rocks, igneous rocks, magma, lava, sedimentary rocks, lithification, metamorphic rocks, fossils, geological time scale