



# 8-Science

## Science Basics

### Standards

MS-ETS1-1

### Resources

Foss and Kesler Science

### Competencies

- Observe and understand the scientific process and to apply this to scientific inquiry and discovery.

### I can

- I can explain the scientific method and I can apply it to my life.
- I can recognize lab safety violations and correct these issues.

### Vocab

**Content:** constraints, limitations, criteria, design, solution, scientific principles, impact

**Academic:** Understand, Recognize, Construct, Observe, Apply



# 8-Science

## Solar System and Beyond

### Standards

MS-ESS1-2  
MS-ESS1-3

### Resources

Foss and Kesler Science

### Competencies

- Understand the properties and predictable patterns of objects and phenomena in the universe and our solar system.

### I can

- I can name our solar systems planets.
- I can explain relative size and distance.

### Vocab

**Content:** galaxy, solar system, gravity, mass, milky way, orbit, ellipse, scale, distance, telescopes, astronomical unit, gravitational force

**Academic:** Understand, Recognize, Construct, Observe, Apply



# 8-Science

## Earth's Place in the Universe

### Standards

MS-ESS1-1

### Resources

Foss and Kesler Science

### Competencies

- Understand the properties and predictable patterns of objects and phenomena in the universe and our solar system.

### I can

- I can recognize lunar patterns.
- I can explain the impact of the moon on earth.

### Vocab

**Content:** lunar phase, eclipse, seasons, waning, waxing, new moon, full moon, gibbous, crescent, solstice, equinox, rotation, revolution, orbit, axis, equator

**Academic:** Understand, Recognize, Construct, Observe, Apply



# 8-Science

## Earth's Timeline

### Standards

MS-ESS1-4  
MS-ESS2-3

### Resources

Foss and Kesler Science

### Competencies

- Understand how Earth's conditions and processes and life on Earth have changed over time.

### I can

- I can interpret the relative and absolute age of rock strata and the fossil remains which provide evidence of Earth's geologic history.
- I can discover how the Earth's geologic history is classified.
- I can give examples of major events in the Earth's geologic history.

### Vocab

**Content:** geological time scale, rock strata, relative age, fossils, era, period, extinction

**Academic:** Understand, Recognize, Construct, Observe, Apply



# 8-Science

## Earth's Systems

### Standards

MS-ESS2-1; MS-ESS2-2  
MS-ESS2-3; MS-ESS3-2

### Resources

Foss and Kesler Science

### Competencies

- Understand how Earth's materials and the major systems of Earth have changed over time.

### I can

- I can classify rocks as metamorphic, igneous, or sedimentary by the processes of their formation.
- I can define the properties of a mineral.
- I can describe how different minerals are identified.
- I can list common minerals and their uses.

### Vocab

**Content:** sedimentary, metamorphic, igneous, sediments, compaction, cementation, pressure, weathering, erosion, plasticity, lava, magma, deposition, mineral, luster, streak, inorganic, organic, cleavage, hardness, fracture, crust, asthenosphere, lithosphere, mantle, outer core, inner core, density, convection

**Academic:** Understand, Recognize, Construct, Observe, Apply



# 8-Science

## Earth's Changing Surface

### Standards

MS-ESS2-2

### Resources

Foss and Kesler Science

### Competencies

- Understand how Earth materials and the major systems of Earth interact over time.
- Understand the changing topography of the Earth caused by convection currents within the mantle.
- Understand engineering designs to define problems, develop solutions, and optimize solutions to a problem in life science.

### I can

- I can identify the role plate boundaries plays in earthquakes.
- I can model different types of faults and their related stresses.
- I can compare seismic waves and interpret graphs relating to seismic waves.
- I can identify the process by which epicenters are determined.
- I can describe how tsunamis form and their effects.
- I can determine how humans can reduce the impact of very unpredictable earthquakes.

### Vocab

**Content:** seismic waves, magnetic field, weathering, chemical weathering, physical weathering, eco-regions, continental drift theory, plate tectonics, fossils, Pangaea, landform, oceanic crust, continental crust, subduction zone, earthquake, plate boundary, transform boundary, convergent boundary, divergent boundary, subduction zone, mid-Atlantic ridge, convergent, divergent, sea floor spreading, ring of fire, trench, shield volcano, composite volcano, cinder cone volcano, hot spot, pyroclastic flow, intrusive, extrusive, Richter scale, epicenter, magnitude, seismograph, stress, compression, shearing, tension, earthquake, fault line

**Academic:** Understand, Recognize, Construct, Observe, Apply



# 8-Science

## Earth's Atmospheric Systems

### Standards

MS-ESS2-4; MS-ESS2-5  
MS-ESS2-6

### Resources

Foss and Kesler Science

### Competencies

- Understand the factors and processes that regulate climate and weather on Earth.

### I can

- I can calculate the density of regularly shaped objects.
- I can identify an object using its density.
- I can calculate the density of irregularly shaped objects.
- I can recognize that a limited number of the many known elements comprise the largest portion of the atmosphere.
- I can identify the composition of the atmosphere.
- I can identify the layers of Earth's atmosphere.
- I can demonstrate how the Sun's energy impacts weather and atmospheric movement.
- I can identify the 4 main cloud types.
- I can describe how water continually cycles among land, ocean, and atmosphere.
- I can identify the forms water takes through the water cycle.
- I can describe how the sun and gravity affect the water cycle.
- I can identify how global patterns of atmospheric movement influence local weather using weather maps that show high and low pressures and fronts.
- I can recognize that the Sun provides the energy that drives convection within the atmosphere and oceans, producing winds and ocean currents.

### Vocab

**Content:** density, volume, mass, atmosphere, troposphere, wind, clouds, stratosphere, ozone layer, mesosphere, thermosphere, exosphere, water cycle, water storage, evaporation, sublimation, transpiration, evapotranspiration, condensation, precipitation, runoff, infiltration, groundwater, aquifer, watershed, air masses, high pressure, low pressure, isobars, barometer, weather, front, cold front, warm front, stationary front, occluded front, convection currents, ocean currents, global winds

**Academic:** Understand, Recognize, Construct, Observe, Apply



# 8-Science

## Earth and Human Activity

### Standards

MS-ESS3-3; MS-ESS3-4  
MS-ESS3-5

### Resources

Foss and Kesler Science

### Competencies

- Understand how natural hazards can be predicted and how human activities affect Earth systems.
- Understand engineering designs to define problems, develop solutions, and optimize solutions to a problem in life science.

### I can

- I can research and debate the advantages and disadvantage of renewable energy resources.

### Vocab

**Content:** Renewable energy resources, non-renewable energy, biomass, wind, hydroelectric, geothermal, solar, dam, turbine, generator, natural resources, biodegradable, fossil fuels, pollution, recycle, conservation, green house effect, global warming, deforestation, watershed management

**Academic:** Understand, Recognize, Construct, Observe, Apply