

## 3-5 Science

### Atmosphere and Weather

**Lesson Objective:** The student will describe atmospheric factors that impact weather.

**Subobjective 1:** The student will define the following terms: weather, air pressure, insolation, troposphere, air pressure, global wind, barometer, and humidity.

**Subobjective 2:** The student will apply knowledge of the above terms to interactive online weather simulations.

### Characteristics and Properties of Minerals

**Lesson Objective:** The student will identify the characteristics and properties of minerals, including: luster, hardness, streak acid test for calcite, and fluorescence.

**Subobjective 1:** The student will perform tests on minerals by virtual lab.

**Subobjective 2:** The student will identify the following minerals: halite, feldspar, sulfur, quartz, diamonds, gypsum, calcite, talc, hematite/iron, and the precious metals gold and silver.

### Chemical Change Energy Model

**Lesson Objective:** The student will identify negative numbers/temperatures on a thermometer using the chemical change energy model.

**Subobjective 1:** The student will identify physical and chemical changes.

**Subobjective 2:** The student will locate fractions and decimals less than zero on a number line.

**Subobjective 3:** The student will create a line plot using data from a number line

**Subobjective 4:** The student will create a Prezi presentation showing what he/she has learned.

### Climate

**Lesson Objective:** The student will collect and analyze local and regional weather data.

**Subobjective 1:** The student will identify six factors that affect climate.

**Subobjective 2:** The student will research and analyze local weather to describe an area's climate.

### Day and Night

**Lesson Objective:** The student will explain how the rotation of the Earth creates day and night.

**Subobjective 1:** The student will identify and describe the standard time zones.

**Subobjective 2:** The student will identify key vocabulary words related to the topic.

## Earth's Moving Crust

**Lesson Objective:** The student will describe how the movement of tectonic plates builds mountains and causes earthquakes and volcanoes.

**Subobjective 1:** The student will summarize causes and effects of mountains, earthquakes, and volcanoes.

**Subobjective 2:** The student will summarize how scientists use seismic waves to study earthquakes.

## Electrical Circuits

**Lesson Objective:** The student will describe the flow of electricity in multiple circuits.

**Subobjective 1:** The student will trace the flow of electricity from a power plant to a home.

**Subobjective 2:** The student will describe the components necessary in a circuit.

**Subobjective 3:** The student will compare and contrast open and closed circuits, series, and parallel circuits.

**Subobjective 4:** The student will manipulate different types of circuits.

## Electricity

**Lesson Objective:** The student will explain the basics of electricity.

**Subobjective 1:** The student will identify uses of electricity.

**Subobjective 2:** The student will identify ways to conserve electricity in the classroom and at home.

## Five Kingdoms

**Lesson Objective:** The student will compare and contrast the distinguishing characteristics of the five kingdoms of living organisms.

**Subobjective 1:** The student will group organisms by kingdom using their characteristics.

## Fossils

**Lesson Objective:** The student will explain how fossils can show how Earth's energy has changed over time.

**Subobjective 1:** The student will define the following: fossils, soil, minerals, and element.

**Subobjective 2:** The student will explain and give examples of how physical evidence from fossils supports the theory that Earth has changed over time.

**Subobjective 3:** The student will analyze fossil record evidence about plants and animals that lived long ago.

**Subobjective 4:** The student will infer the nature of ancient environments based on fossil record evidence.

## Greenhouse Effect

**Lesson Objective:** The student will explain what the Greenhouse Effect is.

**Subobjective 1:** The student will identify the effects of greenhouse gases on Earth.

**Subobjective 2:** The student will analyze the effects people have on the Greenhouse Effect.

## Interdependent Organisms

**Lesson Objective:** The student will identify ways that living organisms are interdependent.

**Subobjective 1:** The student will categorize examples of organisms and interdependence.

**Subobjective 2:** The student will identify the nutritional interdependence of organisms in an ecosystem.

**Subobjective 3:** The student will identify how the dispersal of seeds and fruits creates interdependence among organisms in an ecosystem.

**Subobjective 4:** The student will describe how the need of oxygen and carbon dioxide creates interdependence among organisms in an ecosystem.

**Subobjective 5:** The student will identify how pollination creates interdependence among organisms in an ecosystem.

## Invertebrates

**Lesson Objective:** The student will identify and classify invertebrates.

**Subobjective 1:** The student will identify characteristics of mollusks, segmented worms, and arthropods.

## Lab Safety and Tools for Equipment

**Lesson Objective:** The student will apply lab safety rules and use tools to conduct a science experiment.

**Subobjective 1:** The student will identify appropriate tools to measure with while conducting a science experiment.

**Subobjective 2:** The student will describe what it means to estimate.

## Layers of the Earth

**Lesson Objective:** The student will create a model of the Earth to show the four layers of the Earth.

**Subobjective 1:** The student will identify the four layers of the Earth.

## Light Interaction

**Lesson Objective:** The student will summarize how light interacts with objects in the natural world.

**Subobjective 1:** The student will summarize how light can interact with matter through absorption, refraction, and reflection using models, diagrams, and real world examples.

**Subobjective 2:** The student will visualize how light travels through and interacts with objects and different materials.

**Subobjective 3:** The student will investigate examples of pictures that are transparent, translucent, and opaque applied to light.

**Subobjective 4:** The student will analyze physical interactions of light and matter and the effect of color perception in refraction, absorption, transmission, and scattering.

## Phases of the Moon

**Lesson Objective:** The student will identify the Moon's phases

**Subobjective 1:** The student will explain how the Moon rotates around the Earth.

## Plant and Animal Cells

**Lesson Objective:** The student will explain that all living things are made of cells that carry out all life processes.

**Subobjective 1:** The student will explain that new cells come from existing cells, all of which are too small to see with the unaided eye.

## Plants Parts and Plant Function

**Lesson Objective:** The student will identify the parts of a common plant, including the roots, stems, leaves, and flowers, and explain the function of each part.

**Subobjective 1:** The student will explain the process of photosynthesis.

## Renewable and Nonrenewable Resources

**Lesson Objective:** The student will be able to identify a renewable and nonrenewable resource.

**Subobjective 1:** The student will be able to classify a renewable and nonrenewable resource.

## Respiratory and Muscular Systems

**Lesson Objective:** The student will explain how the respiratory system works.

**Subobjective 1:** The student will identify the parts of the respiratory system.

**Subobjective 2:** The student will explain the functions of the parts of the respiratory system.

**Subobjective 3:** The student will identify the types of muscles in our muscular system.

**Subobjective 4:** The student will explain the functions of the types of muscles in our muscular system.

## Scientific Method

**Lesson Objective:** The student will define and apply the components of the Scientific Method.

**Subobjective 1:** The student will define and give examples of a hypothesis.

**Subobjective 2:** The student will make accurate observations to produce evidence.

**Subobjective 3:** The student will identify and define components of experimental design to communicate results and conclusions.

**Subobjective 4:** The student will explain the role of observation in developing a theory.

## Soils

**Lesson Objective:** The student will identify the properties of soil and how soil supports most plant life.

**Subobjective 1:** The student will identify and define the following basic components of soils: sand, clay, and humus.

**Subobjective 2:** The student will observe and describe the properties of soil, including color, texture, and the capacity to hold water.

**Subobjective 3:** The student will investigate and observe how different soils absorb water at different rates.

**Subobjective 4:** The student will determine the ability of soil to support the growth of many plants, including those in our food supply.

**Subobjective 5:** The student will determine how composting can be used to recycle discarded plant and animal material and determine the relationship between heat and decaying plant matter in a compost pile.

## The Sense of Hearing

**Lesson Objective:** The student will identify how the sense of hearing works and participate in activities that use the sense of hearing.

**Subobjective 1:** The student will identify the basic parts of the ear.

**Subobjective 2:** The student will outline the path that sound takes on its way to the brain.

**Subobjective 3:** The student will match a picture to the correct sound.

**Subobjective 4:** The student will explore how our sense of hearing creates music.

**Subobjective 5:** The student will identify ways to protect his/her sense of hearing.

## The Sense of Sight

**Lesson Objective:** The student will identify how the sense of sight works and participate in activities that use the sense of sight.

**Subobjective 1:** The student will identify the basic parts of the eye.

**Subobjective 2:** The student will explain that "seeing" is when our eyes send messages to our brain.

**Subobjective 3:** The student will identify which word represents an item that can be observed by the sense of sight.

**Subobjective 4:** The student will locate a hidden object using his/her sense of sight.

**Subobjective 5:** The student will describe a picture using his/her sense of sight.

## The Sense of Smell

**Lesson Objective:** The student will identify components of the sense of smell.

**Subobjective 1:** The student will correctly identify the basic parts of the nose.

**Subobjective 2:** The student will identify the functions of the nose.

**Subobjective 3:** The student will categorize smells as good or bad.

**Subobjective 4:** The student will collect data about favorite smells and use that information to create a graph and answer questions.

## **The Solar System**

**Lesson Objective:** The student will describe the planets and some of their major features, as well as asteroids, meteors, and comets

**Subobjective 1:** The student will describe how humans have explored the solar system.

## **The Stars and the Universe**

**Lesson Objective:** The student will identify the cycles, colors, and sizes of stars.

**Subobjective 1:** The student will identify star systems and summarize the Big Bang Theory.

## **Transportation System in Vascular Plants**

**Lesson Objective:** The student will compare structures in plants (roots, stems, and leaves) that serve functions in the growth of vascular plants.

**Subobjective 1:** The student will identify the function of the phloem and the xylem and the part they play in the transportation of sugar, water, and minerals in a vascular plant.

**Subobjective 2:** The student will compare two types of roots and the function of the roots.

**Subobjective 3:** The student will explain the process of photosynthesis and its relationship to the growth of plants.

## **Wind Energy**

**Lesson Objective:** The student will describe how wind can provide energy efficiently through the use of wind turbines.