

REAL Science Odyssey EARTH & SPACE level 1 (grades 1-4)

Class Description:

In this science class, students will study weather, seasons, the earth, minerals, rocks, our solar system, and space. Students study the weather and atmosphere with several hands-on labs including making an anemometer, a rain gage, and water cycle in a bowl. Rocks and minerals are studied in depth with students identifying their samples through the same tests used by geologists. Each planet in our solar system is studied individually as students make their own planet book.

Learning Materials: Main Curriculum:

Real Science Odyssey: Earth and Space Level 1 by Pandia Press

Supplemental:

The Naturalists handbook: Activities for Young Explorers by Lynn Kuntz

The Kids Book of the Night Sky by Ann Love and Jane Drake

Our Solar System by Seymour Simon

Learning Goals/Performance Objectives:

- 1.1.2 Understand the position and motion of common objects.
- 2.1.1 Understand how to ask a question about objects, organisms, and events in the environment.
- 2.1.2 Understand how to plan and conduct simple investigations following all safety rules.
- 1.1.5 Understand physical properties of Earth materials.
- 1.2.6 Know that living things are made of small parts.
- 1.1.5 Understand physical properties of Earth materials including rocks, soil, water, and air.
- 1.2.4 Understand that Earth's system includes a mostly solid interior, landforms, bodies of water, and an atmosphere.
- 1.3.6 Understand weather indicators and understand how water cycles through the atmosphere.
- 1.2.5 Know how the Sun, Moon, and stars appear from Earth.
- 1.3.7 Know how the appearance of the Sun, Moon, and stars changes as seen from Earth.

Learning Activities: The following is a list of topics the student will learn during the year while completing Earth & Space (level one). Each topic and/or subtopic will include 1 to 3 lessons complete with lesson story, labs, reading, and other activities. Each topic will take anywhere from 1 to 4 weeks to complete.

The Earth

Weather and Seasons - monitoring weather, understanding seasons

The Water Cycle

The Earth's Interior - crust, mantle, outer core and inner core

The Earth's Surface - water and land

Minerals - what they are and how to identify them

Rocks and the Rock Cycle - igneous, sedimentary and metamorphic rocks

Erosion - wind, water, ice, and biological erosion

Soil

The Solar System
The Earth/Moon System
The Solar System - the sun, planets, and asteroid belts
The Planets - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.
Pluto is studied as a dwarf planet
Space
Stars, Comets, Meteoroids and Asteroids
What's Not in Space?

Progress Criteria/Methods of Evaluation: For successful completion of this course, the student will complete at least 70% of the lessons/goals, at a minimum of 70% accuracy, following the timeline below. The timeline includes reviews and student work. Formative assessments will be given as deemed necessary, and there will be a summative assessment at the end of each unit.

SEPTEMBER—

Week 1: Weather changes, Thermometer exploration
Week 2: Make a rain gauge, Measuring wind speed
Week 3: Make a weather vane, Start weather journal, The reasons for the seasons
Week 4: The water cycle, Water can be solid, liquid, or gas

OCTOBER—

Week 1: Water cycle in a bowl, water cycle diagram
Week 2: Air surrounds the earth & takes up space, Air has mass
Week 3: Earth's surface is changing, Earth – the water planet, —Water We're Going to Drink?!
Week 4: What is inside the earth? Pizza crust to the core

NOVEMBER—

Week 1: Rocks are made of minerals
Week 2: Mineral identification
Week 3: Mineral hardness, luster, and shape

DECEMBER—

Week 1: Grow your own crystals, crystals models
Week 2: The earth recycles rock, going on a rock hunt

JANUARY—

Week 1: My rock – a closer look, rocks can be grouped
Week 2: Igneous rocks
Week 3: Sedimentary rocks
Week 4: Metamorphic rocks, Start a rock collection

FEBRUARY—

Week 1: Weather and Water make rocks weather
Week 2: Ice weathers rock, living things weather rock
Week 3: Wind causes erosion, deposition creates layers
Week 4: Soils is dirt, what's the dirt on dirt, Soil Recipe

MARCH—

Week 1: The Moon
Week 2: The sun, solar system, planets, & more
Week 3: Make a solar oven, solar system book
Week 4: Mercury, Venus

APRIL—

Week 1: Earth

Week 2: Mars

Week 3: Jupiter

MAY—

Week 1: Saturn

Week 2: Uranus

Week 3: Neptune & Pluto

Week 4: What's out in space, Constellations

JUNE—

Week 1: Finding the north star, meteor what?

Week 2: A greater crater, be a night sky detective.