Syllabus

PLAR Prep – Earth and Space Science Applied Pathway

3 Units: 13 lessons, 1 PDF, 1 Article **Estimated time:** 15 – 20 hours

OALCF Levels: A1.2, A1.3, A2.2, A2.3, A3

Suggested Milestones: 3, 4, 5, 6 or 7, 10, 11, 12 or 13, 14

Course Overview

This course focuses on Earth and space science. You will study the characteristics of our solar system including the Earth's composition, subsystems and natural resources. You will also examine effects humans are having on the earth and plant growth.

Unit 1: Introduction to Earth and Space Science (6 lessons)

Introduction to Earth and Space Science
(43 slide tutorial and mastery test)
In this lesson, you will identify responsible practices used by Earth and space scientists and apply the physical tools they use.

Planets and Moons
(43 slide tutorial and mastery test)
In this lesson, you will analyze and interpret data to compare and contrast properties of planets and moons.

Earth's Composition
(32 slide tutorial, practice and mastery test)
In this lesson, you will examine the different layers that make up the Earth's composition.

Earth's Subsystems
(43 slide tutorial and mastery test)
In this lesson, you will model Earth as an interaction of several subsystems that exchange matter and energy.

The Atmosphere
(42 slide tutorial and mastery test)
In this lesson, you will analyze data to identify changes in Earth's atmosphere since its formation and explain how the atmosphere interacts with other subsystems.

Natural Resources
(45 slide tutorial and mastery test)

In this lesson, you will use evidence to explain that natural geological processes result in uneven distributions of natural resources across the globe.

Unit 2: Climate Change (5 lessons)

Global Climate Change
(50 slide tutorial and mastery test)
In this lesson, you will use models and mathematics to forecast the effects of climate change on Earth's ecosystems.

The Mechanics of Climate Change
(51 slide tutorial and mastery test)
In this lesson, you will use data of carbon dioxide levels to explain how current trends affect Earth's climate.

Evidence of a Changing Climate
(50 slide tutorial and mastery test)
In this lesson, you will ask questions to clarify evidence of the cause of changing global temperatures over the past century.

Human Interactions with Earth's Subsystems
(45 slide tutorial and mastery test)
In this lesson, you will explain how natural disasters affect human populations and predict how human activity will negatively influence the natural cycles of Earth.

Taking Care of Our Planet
(42 slide tutorial and mastery test)
In this lesson, you will design methods to reduce the negative impact that humans have on the environment.

Unit 3: Plant Growth (3 lessons, 1 PDF and 1 Article)

Stems
(21 slide tutorial and mastery test)
In this lesson, you will describe the structure and functions of stems.

Growth in Stems
(23 slide tutorial and mastery test)
In this lesson, you will describe the process of primary and secondary growth in stems.

Roots
(28 slide tutorial and mastery test)
In this lesson, you will describe the structure and functions of roots.

PDF Document: 5 Things you can learn from tree rings
(1 page)
By reading this document, you will examine characteristics of tree rings and how to identify the environmental conditions the tree grew.

Article: Tree rings provide snapshots of Earth's past climate
(1 page)
By reading this article, you will use tree rings to identify changes in climate conditions over time.