



The **Earth and Space Science** program effectively introduces students to geology and astronomy and builds their understanding of these branches of science. **Earth and Space Science** features 80 activities that cover all of the major topics in the earth and space sciences. A series of audio instructions and help buttons ensure that students will navigate these activities easily and with confidence. **Earth and Space Science** is a compelling and effective way to develop young students' skills in earth and space sciences and their understanding of their world and the universe beyond it.

Targeted Skills

- Introduces students to the differences between natural and man-made resources.
- Thoroughly teaches and tests students on the properties, uses, varieties and environmental aspects of water, air, rocks and soil.
- Climate and extreme weather are explored and students are taught how to measure basic weather conditions.
- Students are introduced to physical geography concepts like landforms, layers of the Earth and geographic change.
- Lessons on the planets, the lunar phases and the orbits of the Moon, Earth and Sun teach students the basic principles of space science.

Teacher Dashboard

The Teacher Dashboard tracks student progress throughout each program and records the percentage score for every activity completed. This feature provides an overview of how well a student is progressing and allows the teacher to identify strengths and weaknesses.

- Records students' results automatically as they work.
- Prints reports quickly and easily for sharing with parents and staff.
- Provides summary reports by subject or detailed reports by activity.
- Allows teachers to print reports for individual students or an entire class.
- Stores student marks in one central location for all programs.

Program Outline

The program is broken down into 8 units. On the following pages, each of the programs' units are broken down. The units are:

1 - What's On Earth

2 - Water

3 - Air

4 - Rocks

5 - Soil

6 - Weather

7 - The Planet Earth

8 - Space

1 - What's On Earth?

ACTIVITY NAME	INSTRUCTION	REQUIRED SKILLS
Picture Match	Students must identify whether the given photo shows soil, water or rocks.	<p>Understand the difference between soil, water, rocks and air.</p> <p>Understand the basic properties of soil, water, rocks and air.</p>
Find the Traits	From a given list of traits, students have to click on the traits that apply to either rocks, air, soil or water.	
What am I?	From some given clues, students must identify whether the riddle describes rocks, air, soil or water.	
Natural or Man-Made?	From a given series of pictures, students click on the natural things and then on the man-made things.	<p>Understand the difference between natural and man-made resources.</p> <p>Determine whether common resources are natural or man-made.</p>
Natural or Man-Made? II	Students have to identify whether a printed resource is natural or man-made.	
True or False?	Students must answer a variety of true or false questions about natural and man-made resources.	

2 - Water

ACTIVITY NAME	INSTRUCTION	REQUIRED SKILLS
The Changing State of Water	Students are walked through an experiment which shows a block of ice melting into water and then evaporating. They must answer questions about changes of state as the experiment goes along.	Understand the difference between solid, liquid and gaseous states of water. Understand the changes of state that water goes through and how these changes are brought about.
What is This State?	Students must identify which state of water they see in a given photo.	
Water State Riddles	Students must identify which state of water a given riddle describes.	
Name the Change	Students must identify which change of state is happening in a given picture.	
Change is Coming!	Students must identify which state of change is coming to a given substance if a given change of temperature takes place.	
Water in the Air	Students must identify which form of water is in the air that a given riddle describes.	Understand the difference between fog, clouds, steam, frost, dew, rain, snow and humidity.
Name the Body of Water	Students must identify which body of water they see in a given picture.	Understand the difference between oceans, rivers, lakes, ponds and puddles.
Is it Salt Water?	Students must identify whether a given body of water contains salt water or fresh water.	Understand which bodies of water contain salt water and which contain fresh water.
What Kind of Cloud?	Students must identify which kind of cloud they see in a given photo.	Understand the three major types of clouds and their properties.
Cloud Multiple Choice	Students must identify which kind of cloud is described in a given riddle.	
Jones Creek	Students are walked through an experiment which shows how a town pollutes and then cleans up a creek. They must answer questions about water pollution as the experiment goes along.	Understand the environmental threats to our water and how they can be cleaned up.
Helping or Hurting?	Students must identify whether a given real-world action helps or hurts the water quality.	

3 - Air

ACTIVITY NAME	INSTRUCTION	REQUIRED SKILLS
See the Wind	From a series of pictures, students have to identify which pictures show that the wind is blowing and which pictures do not show that the wind is blowing.	Understand how to tell if the wind is blowing in real life.
Build a Wind Indicator	Students are walked through an experiment which shows them how to build and use a wind indicator. They have to answer various questions about the wind.	Measure wind speed.
Does Air Take Up Space?	Students are walked through experiments which show them that air takes up space and has weight. They have to answer various questions about the properties of air.	Understand that air takes up space and has weight.
Does Air Take Up Space? II		
Does Air Weigh Anything?		
How Much Air is There?	Students are walked through an experiment which shows them how large the Earth's atmosphere is in relation to a desk globe. They have to answer various questions about our supply of air.	Understand that our supply of air is limited and should be taken care of.
The Cedarton Sky	Students are walked through an experiment which shows how a town pollutes and then cleans up the air. They must answer questions about air pollution as the experiment goes along.	Understand the environmental threats to our air and how they can be cleaned up.
Helping or Hurting?	Students must identify whether a given real-world action helps or hurts the air quality.	
True or False?	Various questions about the properties of air.	Understand the basic properties of air.

4 - Rocks

ACTIVITY NAME	INSTRUCTION	REQUIRED SKILLS
Order the Rock Names	Students must click on the names of rock segments in order from the largest to smallest.	Understand the names and properties of common rock names.
Pick the Rock	From a series of photos of rocks, students have to click on the rock that is shiniest, pointiest, smallest, etc.	Understand that there are many different kinds of rock and that they have different properties.
Rocks or Minerals?	Students must determine whether a given riddle describes rocks or minerals.	Understand the difference between rocks and minerals.
Rocking Riddles	Students must determine whether a given riddle describes igneous, sedimentary or metamorphic rock.	Understand the difference between igneous, sedimentary and metamorphic rock.
The Hardest Rock	Students are walked through an experiment where 3 rocks are rubbed against each other to determine which rock is the hardest. Along the way, they have to answer various questions about the properties of rocks.	Understand that some rocks are harder than others. Understand how to tell if one rock is harder than another.
The Heaviest Rock	Students are walked through an experiment where 3 rocks are placed on a scale to determine which rock is the heaviest. Along the way, they have to answer various questions about the properties of rocks.	Understand that some rocks are heavier than others. Understand how to tell if one rock is heavier than another.
Rock Uses	From a series of pictures, students have to identify the ways rocks are used and then the way rocks are not used.	Understand common uses of rocks.
True or False?	Various questions about the properties of rocks.	Understand the basic properties of rocks.

5 - Soil

ACTIVITY NAME	INSTRUCTION	REQUIRED SKILLS
How is Soil Important?	From a given series of pictures, students must click on the ways soil is used and then on the ways soil is not used.	Understand the common uses of soil.
What Lives in the Soil?	From a given series of pictures, students have to click on the living things that live in the soil and then the living things that do not live in the soil.	Identify the organisms who depend on soil for their homes.
What is Soil Made Of?	From a given series of things, students must click on the things that soil is made of and then the things that soil is not made of.	Understand what soil is made of.
Clay or Sand?	Students must decide whether a given photo shows clay or sand.	Understand the difference between clay, sand, silt and humus.
Pick the Properties	From a given list of properties, students have to click on the properties of clay, sand, silt and humus.	
How Much Water Will it Hold?	Students are walked through an experiment where water is poured through different kinds of soil to see which soil will retain the most water.	Understand that different kinds of soil hold different amounts of water.
Which Soil is the Best for Growing a Flower?	Students are walked through an experiment where seeds are planted in three different kinds of soil to see which kind will grow the tallest flower.	Understand that different kinds of soil have different abilities for growing plants.
How Much Soil is There?	Students are walked through an experiment which compares the size of the world to an apple and shows how much soil there is on the surface.	Understand that we have a limited supply of soil.
Helping or Hurting?	Students must identify whether a given real-world action helps or hurts the soil quality.	Understand the environmental threats to the soil and how they can be cleaned up.
How Does This Hurt the Soil?	Students must identify how a given environmental mistake hurts the soil.	
True or False?	Various questions about the properties of soil.	Understand the basic properties of soil.

6 - Weather

ACTIVITY NAME	INSTRUCTION	REQUIRED SKILLS
Fill in the Blanks	Various questions on weather principles.	Understand basic weather terminology.
Weather Words	Students must click on the correct definition for a given weather word.	
What Does the Sun Do?	From a given list of things, students must click on the things that the Sun does.	Understand the role that the Sun plays in the weather and climate.
Weather or Climate?	Students must identify whether a given weather phenomenon describes weather or climate.	Understand the difference between weather and climate.
Measure the Rainfall	Students must read various rain gauges and then compare the readings.	Understand how to use a rain gauge to measure rainfall.
Read the Thermometer	Students must read a thermometer and click on a picture from a given series which shows an activity appropriate for that temperature.	Understand how to use a thermometer to measure temperature.
Four Seasons	Students must read a weather chart and compare the data in it.	Understand how to read weather data from a chart. Understand basic cycle of weather within a year.
Extreme Weather Detective	Students must identify an extreme weather event by reading a series of clues which describe a particular storm.	Understand the names and characteristics of extreme weather events.
Staying Safe	From a multiple choice list, students must click on the correct ways to stay safe during a given storm.	Understand how to stay safe during extreme weather events.
True or False?	Various questions about weather basics.	Understand the basic concepts of weather.

7 - The Planet Earth

ACTIVITY NAME	INSTRUCTION	REQUIRED SKILLS
Clicking Around the Earth	On a given map of the world, students have to click on things like oceans, islands, hot places, etc.	Locate major landforms on a world map.
Name the Habitat	Students must decide what habitat they see in a given photo.	Understand the names and characteristics of the basic habitats - forest, jungle, desert, underwater, tundra.
Habitat Riddles	Students must decide what habitat is described in a given riddle.	
What Landform is This?	Students must decide what landform they see in a given photo.	Understand the names and characteristics of the basic landforms - dune, mountain, island, glacier, valley, cliff, field, cave.
Landform Riddles	Students must decide what landform is described in a given riddle.	
Rocks Through Time	Students are walked through an experiment which shows a cliff under a waterfall eroding over time. They will be led to conclude that water can shape rock over time.	Understand the principle of erosion of rocks over time.
Earth Mountain	Students are walked through an experiment which shows a mountain being created and changing shape over time. They will see how different factors affect the shape of the planet's features.	Understand the principle of geographic change. Understand the different factors which change the shape of the Earth's forms.
What Layer is This?	On a cross-section of the Earth, students must identify which layer is highlighted.	Understand the names and characteristics of the Earth's layers.
What Layer Am I?	Students must identify which layer of the Earth is described in a given riddle.	
Natural Disasters	Students must answer various questions about natural disasters.	Understand the basic characteristics of earthquakes, forest fires and volcanoes.
True or False?	Various questions about the geography of planet Earth.	Understand the basic concepts of the Earth's geography.

8 - Space

ACTIVITY NAME	INSTRUCTION	REQUIRED SKILLS
What's in Space?	Students must decide whether the object shown in a given picture is in space or not.	Understand that some things in the sky are in space and some are not.
Space Words	Students must match a column of space words with their definitions.	Understand basic space terminology.
Concentration	In this concentration puzzle, students must match space objects with their names.	
Name the Planets	From a given illustration of the solar system, students must identify which planet is highlighted	Understand the appearance, order and names of the planets in the solar system.
Order the Planets	From a mixed-up list of planet names, students must click on the planets in the correct order.	
Why is Earth Special?	From a given list of traits, students must pick the traits which show how Earth is special in the solar system.	Understand why Earth is unique among planets in our solar system.
How Many Stars?	Students are walked through an experiment which allows them to conclude that there are many more stars in the universe than we can see with our eyes.	Understand that there are many stars in the sky that we cannot see with our naked eyes.
The Spinning Earth	Students are walked through an experiment which shows how the Earth's spinning gives us the day/night cycle.	Understand that the Earth's spinning makes the day/night cycle.
Follow the Dipper	Students are walked through an experiment which shows them how the stars move through the night sky. They will have to relate this to the spinning of the Earth.	Understand that the Earth's spinning makes the stars move through the night sky.
Moving Shadows	Students are walked through an experiment which shows how shadows move through a yard during a day. They will relate this to the spinning of the Earth.	Understand that the Earth's spinning makes shadows move throughout the day.
The Phases of the Moon	Students are walked through an experiment which shows a simulation of how the Moon's orbit affects how it looks from Earth, in a cycle that repeats itself over and over.	Understand the phases of the Moon.
Order the Moon Phases	From a given series of photos, students must click on the phases of the moon in their correct order.	Understand the relationship between the Moon's orbit and the phases of the Moon.