

Earth Science 11

Unit 0 – Introduction

Day 1 – Intro to Earth Science

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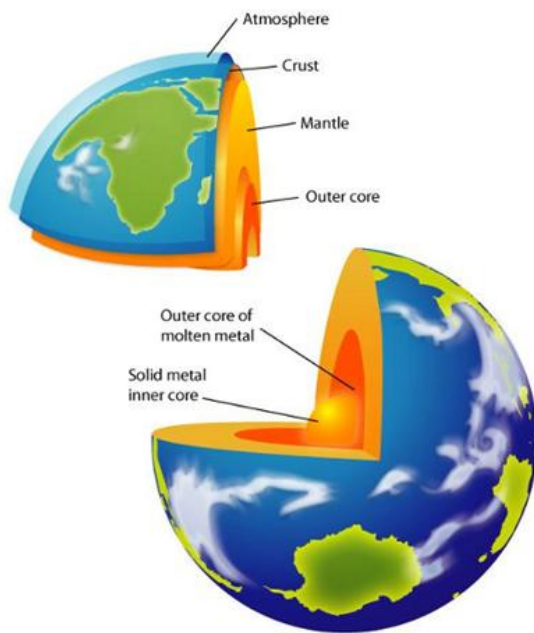
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What is science? literally means "having knowledge"... it is the process of observing and studying our world

Earth Science: the study of earth and its place in the universe

- astronomy... study of the universe -> galaxies solar system, planets and & space exploration
- geology... the study of earth -> minerals, rocks, volcanoes, earthquakes & plate tectonics
- meteorology... study of weather -> atmosphere, weather, climate, and climate change
- oceanography.... study of the ocean -> seawater, marine life, bathymetry & ocean floor



Earth's four major spheres:

Hydrosphere: all the water on earth

Atmosphere: life sustaining thin, gaseous envelope surrounding earth

Geosphere: composed of the core, mantle, crust. Below atmosphere and the ocean

Biosphere: contains all life on earth.
deepest depth of the sea all the way up to several km into the sky

Scientific Method:

Observation: Observe your surroundings or anything in the natural world and record it

Hypothesis: Form a question from the observation
the question must be testable

Experiment: Develop an experiment to test the hypothesis....Includes materials and procedures to conduct the experiment
The experiment should be able to be recreated by any other person in the world

Conclusion: Analyze the results from the experiment and decide whether it supports your hypothesis
anything unusual?.... compare your results to other similar experiments.... come up with improvements to your experiment

Scientific Method:

Independent Variable: the variable that is changed by the experimenter

Also known as the manipulated variable

example: hours spent studying...

Dependent Variable: the variable that is influenced by the independent variable

This is what you are trying to find out

example: how did your grade increase

Control: Testing the normal conditions (nothing is changed).

Experimental results can be compared to the control, to get a better understanding

example: studying a normal amount to get a baseline grade...

Constant Variables: Keeping conditions the same throughout the experiment

ensuring that it is not another external factor changing your results

example: how much sleep you get and how healthy of food you eat

Scientific Measurement:



Length

meters
millimeters
micrometers
nanometers



Temperature

kelvin
celsius
fahrenheit
 $k=273+C$
 $F = C*9/5 + 32$



Mass

kilograms
grams
milligrams



Time

hours
minutes
seconds

SI Units:

Quantity	Unit	Symbol
length	meter	m
mass	gram	g
temperature	celsius	c
time	second	s
amount of substance	mole	mol