

# INTRO TO EARTH AND ENVIRONMENTAL SCIENCE

WHAT IS EARTH/ENVIRONMENTAL SCIENCE?  
THE STUDY OF THE EARTH AND THE UNIVERSE AROUND IT.

## WHAT MAJOR AREAS OF STUDY ARE COVERED IN EARTH AND ENVIRONMENTAL SCIENCE?




### 5 MAJOR BRANCHES OF EARTH SCIENCE

- 1. Geology – Lithosphere
- 2. Hydrology – Hydrosphere
- 3. Meteorology – Atmosphere
- 4. Ecology – Biosphere
- 5. Astronomy – Celestial Sphere

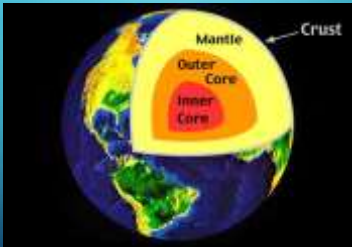
### GEOLOGY-LITHOSPHERE

- ⌘ Study of the origin and structure of the solid earth
- ⌘ Resources and human impact on them




| STRATIGRAPHIC UNIT | THICKNESS (m) | AGE (Ma)   |
|--------------------|---------------|------------|
| Quaternary         | 0-2           | 0-0.01     |
| Pleistocene        | 0-1.8         | 0.01-0.02  |
| Holocene           | 0-0.01        | 0.01-0.001 |
| Neogene            | 23-66         | 23-66      |
| - Quaternary       | 0-2           | 0-0.01     |
| - Pliocene         | 2.6-2.3       | 2.6-2.3    |
| - Pliocene         | 2.3-2.6       | 2.3-2.6    |
| - Pliocene         | 2.6-5.3       | 2.6-5.3    |
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| - Pliocene         | 99.5-100.0    | 99.5-100.0 |

### DIVIDED INTO CRUST, MANTLE AND CORE



### HYDROLOGY – HYDROSPHERE

- ⌘ Study of the oceans, rivers, and groundwater and human impact on them



## EARTH'S WATER

- ☞ 71% of Earth's surface is covered by water.
- ☞ 96.5% is salt water
- ☞ 3.5% is fresh water
- ☞ Water cycle

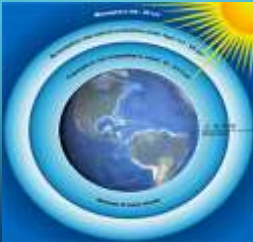


## METEOROLOGY- ATMOSPHERE

- ☞ Study the variations in atmospheric conditions that produce weather.
- ☞ Use technology to forecast weather events.



- ☞ Provides the air we breathe and protects us from the sun
- ☞ Contains mostly nitrogen and oxygen



## ECOLOGY - BIOSPHERE

- ☞ Includes all life on Earth
- ☞ Extends from the ocean floor into the atmosphere
- ☞ Encompasses all other spheres



## THE UNIVERSE BEYOND THE EARTH--- ASTRONOMY

- ☞ Origin, motion, and planets
- ☞ Use earth-based /space-based telescopes



## PROPERTIES

- ☞ The Earth is magnetic!
- ☞ Core composed mostly of iron → magnetic field
- ☞ Magnetic field protects us from the harmful rays of the sun.



## PROPERTIES

- ⌘ The Earth has gravity!
- ⌘ Gravity holds us on the Earth
- ⌘ It holds on to the atmosphere
- ⌘ It gives us weight.



## WHY SHOULD I STUDY EARTH SCIENCE?

- ⌘ Understand how natural forces shape our environment
- ⌘ Forecast daily weather and potential disasters
- ⌘ Teach wise use of resources



## HOW DOES EARTH SCIENCE RELATE TO OTHER SCIENCES?

- ⌘ Ecology = link between ES and Biology
- ⌘ Relationship between living things and their environment
- ⌘ Ecosystem = community of organisms and their environment
- ⌘ EX. Biosphere, tropical rainforest



## TRUE OR FALSE??

1. There are 3 branches of Earth Science.
  - False
2. Geology is the study of the solid earth.
  - True
3. Meteorology is the study of the universe beyond the earth.
  - False
4. The Earth is not magnetic.
  - False
5. The Biosphere contains some, but not all, life on Earth.
  - False
6. 71% of the Earth's surface is covered by water.
  - True