Spheres of Earth

• Earth is a system, called the **ecosphere**

• Earth is a system made of smaller, interacting systems

• To more easily study the natural world, we divide the study of earth into spheres . . .

Ecosphere

• **Ecosphere**: the entire Earth system
  
  – **Ecology**: study of living organisms and how the interact with their physical surroundings
  
  – **Environmental Science**: study of the environment, including the physical, biological, and information sciences
Time to start taking notes . . .

. . . in your foldable!

Atmosphere

• **Atmosphere** (air): contains all the air in the Earth system
  – Includes wind, weather, gases (oxygen, nitrogen, water vapor, & others)
  – Is layered by density, movement, temperature, composition
  – **Meteorology**: study of weather
  – **Climatology**: study of climate
### Hydrosphere

- **Hydrosphere** (water): all of the water in the Earth system
  - Includes oceans, lakes, rivers, groundwater, glaciers, rain, clouds
- **Cryosphere** (ice): all of the frozen water in the Earth system, such as glaciers, ice caps, and snow
- **Hydrology**: study of water
- **Oceanography**: study of the oceans

### Geosphere

- **Geosphere** (Land): the study of all the land, or rock, in the Earth system
  - Includes continents, islands, ocean floors, rock all the way to the Earth’s core
  - Layered by density, movement, temperature, composition
  - **Lithosphere**: upper layer of Earth’s interior, includes the crust
  - **Pedosphere**: soil
  - **Geology**: study of rocks and Earth’s internal processes
Biosphere

- **Biosphere** (Life): all living things found within the Earth system
  - Includes plants, animals, fungi, microorganisms, middle-school students
  - **Anthroposphere**: everything made or modified by humans in the Earth system
  - **Biology**: study of life
  - **Zoology**: study of animals
  - **Botany**: study of plants
  - **Anthropology**: study of humans

Exosphere

- **Exosphere** (Space): includes everything outside of the Earth system
  - Includes stars, planets, asteroids, comets, galaxies, the universe
  - **Astronomy**: the study of space
  - **Astrology**: the study of the influence stars have over human lives... so, so **not** science
  - **Aerospace Engineering**: study and design of atmospheric and space flight