

EARTH'S SPHERES

VOCABULARY – Use the resources on Mr. Hanna’s website to define the following key terms related to heredity.

- 1) HYDROSPHERE – *all of the water on Earth*
- 2) ATMOSPHERE – *layer of gases that surrounds Earth*
- 3) GEOSPHERE – *Earth’s interior, rocks and minerals, landforms, and processes that shape Earth’s surface*
- 4) BIOSPHERE – *all living components of the Earth, as well as all no-longer-living organic matter*

SHORT RESPONSE – Provide a short answer (a few sentences or less) in response to each prompt.

- 5) Some people think of science as its own language. In the language of science, prefixes are very important, and many of them are Greek/Latin in origin. There are several important prefixes that relate to the topic of Earth’s spheres. Identify the meaning of the following prefixes:
 - a. “hydro” – *having to do with water*
 - b. “atmos” – *air/vapor/gas*
 - c. “geo” – *earth/land/country*
 - d. “bio” – *life*
- 6) Why is liquid water so unique to Earth?
Because Earth is the “perfect” distance from the Sun, it has just the right temperature range (not too hot and not too cold) for liquid water to exist without it all evaporating or freezing.
- 7) How much of Earth’s water is found in the oceans?
More than 96%
- 8) Identify the correct layer of the atmosphere in each description below:
 - a. The outer layer that extends into space – *exosphere*
 - b. This layer is very hot – *thermosphere*
 - c. Most meteors burn up in this layer – *mesosphere*
 - d. This layer includes the ozone, which shields life from harmful UV radiation – *stratosphere*
 - e. Weather occurs in this layer – *troposphere*
- 9) Compare the geosphere to the hydrosphere. How are they similar? How are they different?
The geosphere and hydrosphere are similar in that they both include non-living components of the Earth. The difference is that the geosphere includes the solid components such as rocks and minerals while the hydrosphere includes only the components made of water (ice, liquid water, vapor).
- 10) What makes the biosphere different from the other “spheres” (ie – the hydrosphere, atmosphere, and geosphere)?
The biosphere is unique because it includes living things while the other spheres do not.
- 11) In what ways does the biosphere depend on the other “spheres”?
The hydrosphere provides moisture/water to plants and animals. The geosphere provides the solid surface on which animals and plants grow, and it provides warmth from beneath the Earth. The atmosphere provides gases needed by living things, such as oxygen, and protection from harmful UV radiation from the Sun.
- 12) How do both the hydrosphere and the atmosphere affect the geosphere in similar ways?
The hydrosphere and atmosphere are important in the weathering and erosion from ice, water, and wind that shape the geosphere.