

Earth Science:

The Four Spheres



From Last Day....



Scenario:

A student is adding small drops of acid to a solution. They are leaning in closely to count how many drops of acid they are adding. The acid splashes and gets in their eyes.

In groups of 3-4 (your table groups) provide the following on a sheet of paper:

- Rule that was broken
- Appropriate response
- Location of any necessary safety equipment

Learning Goals:

- Understand the types of matter on Earth
- Identify and name the four environmental spheres of our earth.
- Understand the characteristics of each of the four spheres.



The Cycling of Matter

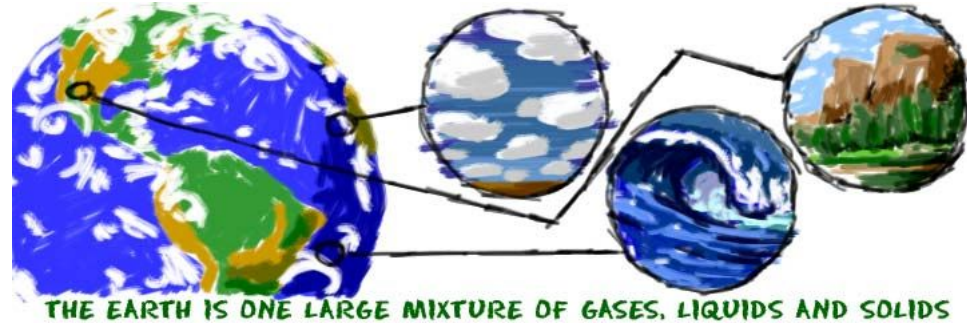
What is matter?

-matter makes up everything!

Matter “Cycles”

-matter isn't made or destroyed

-all matter changes form (and often returns)



Two Types of Matter: Biotic and Abiotic

Abiotic - non living parts of an environment



Biotic - living parts of an environment



Biotic and Abiotic Factors

Can we come up with 3 examples of biotic and abiotic matter?

Biotic	Abiotic
1.	1.
2.	2.
3.	3.



Geosphere



Atmosphere



Hydrosphere



Biosphere



EPISODE 6.1

FOUR SPHERES

PART 1



Geosphere

What is the Geosphere?

Geo - the Greek word for “ground”

-includes all rocks and minerals on Earth from boulders to sand

-the geosphere does not contain any living things



Biosphere

What is the Biosphere?

Bio - the Greek word for "life"

-the biosphere is made up of all living things (and the only sphere with living things in it)

Biome - a region with similar plants, animals, terrain and climate

Examples: tundra, forest, desert, etc



Geosphere and Biosphere

Investigation Examples:

Geosphere	Biosphere
1)	1)
2)	2)
3)	3)



EPISODE 6.2

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PART 2



Hydrosphere

What is the Hydrosphere?

Hydro - Greek word for “water”

- all water on the planet is part of the hydrosphere
- includes any body of water: lakes, rivers, and oceans
- even includes frozen water like glaciers



Atmosphere

What is the Atmosphere?

Atmos - Greek word for "air"

-contains all the gases on our planet

-there are five layers of the atmosphere

(you don't need to memorize the names of the five layers)

-rain is part of the hydrosphere but clouds are part of the atmosphere



Hydrosphere and Atmosphere

Investigation Examples:

Hydrosphere	Atmosphere
1)	1)
2)	2)
3)	3)



Going for a Walk Next Day

What to Bring?

- Shoes you are comfortable walking in
- Clothes you are comfortable walking in
- A jacket? (check the weather!)
- Your smartphone! (to take pictures)



Exit Slip

Give 3 examples of biotic and abiotic matter and which sphere they belong to:

Biotic	Abiotic
1)	1)
2)	2)
3)	3)

