Earth - I can **c**ommunicate an understanding of interactions between Earth’s spheres and the interconnectedness of everything within the Earth System.

There are \_\_\_\_\_\_\_\_\_major parts in the Earth system. Each part has its own collection of materials and processes. However, the parts of the Earth system do not operate on their own.  They all interact with other parts in many ways as nutrients cycle and energy moves through the spheres.

The four spheres are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. [**The atmosphere**](http://www.windows2universe.org/earth/Atmosphere/overview.html) - extends up from the Earth surface for several hundred \_\_\_\_\_\_\_\_\_

The most important layers of the atmosphere to life on Earth are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

-**Troposphere** **-** This is the lowest part of the atmosphere - the part we \_\_\_\_\_\_\_\_\_\_\_\_\_.

It contains most of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ i.e. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

It contains about \_\_\_\_\_\_\_\_\_\_\_\_\_ of all the air in the atmosphere and water in the form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Water vapour** in the air helps \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ from the \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ our planet. The **tropopause** is the boundary of this layer.

-**Stratosphere -** extends upwards from the tropopause to about \_\_\_\_\_\_km.

It contains much of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the atmosphere. This layer is essential to life on earth as it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_harmful \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the sun.

1. [**The biosphere**](http://www.windows2universe.org/earth/Life/biosphere.html) is all \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ things, from single-celled bacteria to plants and animals.
2. [**The geosphere**](http://www.windows2universe.org/earth/geology/geology.html) = \_\_\_\_\_\_\_\_\_\_\_\_\_ - includes all minerals, \_\_\_\_\_\_\_\_\_\_\_, molten rock,

sediments, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The Earth’s core, crust and mantle.
3. [**The hydrosphere**](http://www.windows2universe.org/earth/Water/overview.html) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - includes the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

rivers, lakes, streams, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, water vapor, and even puddles.
* [**The cryosphere**](http://www.windows2universe.org/earth/polar/cryosphere_intro.html) is the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ part of the hydrosphere and includes snow, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and polar ice caps (sea ice).

**The Sun’s Importance to the Earth System**

* The Sun has a large impact on the Earth and so it is also considered a part of the Earth system. Almost all the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on [Earth](http://www.windows2universe.org/earth/earth.html) comes from the [Sun](http://www.windows2universe.org/sun/sun.html).
* The sun provides the primary source of \_\_\_\_\_\_\_\_\_\_\_\_\_ for all living \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Plants and other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ use the sun’s energy to create high energy molecules for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* This process is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Biogeochemical cycles that provide essential \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for living things are driven by the sun’s energy as well.
* Water is cycled through the different spheres with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ being the driving force maintaining the cycle.
* Gases and materials in the atmosphere interact, \_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_ and absorb the sun’s radiation which influences global \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is impacted by \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_currents which in turn are driven by the Sun’s energy.

**Interactions in the Earth System**

* The **Earth System** is dynamic and always \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Materials in the system move from one sphere to the next in different ways.
* Such as through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mountains grow out of the geosphere as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ collide. Volcanos erupt releasing materials into the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Water moves in different states ( ) through the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cycle.
* Elements important to life, cycle between the living and nonliving parts of the Earth system through biogeochemical cycles such as the \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_cycles.
* Ocean currents and wind patterns in the atmosphere play a major role in \_\_\_\_\_\_\_\_\_\_\_\_\_nutrients as well as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_from the sun throughout the Earth System.

*Complete Prezi interactive and questions! Then view Video on Bennett Dam Impact and reflection questions!*