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EXOSPHERE



IONOSPHERE grows and shrinks based on energy

THERMOSPHERE



KÁRMÁN LINE

MESOSPHERE

OZONE LAYER

STRATOSPHERE



TROPOSPHERE



Troposphere

Atmosphere Notes

This is the layer of the atmosphere every living thing resides in. It is the densest layer of the atmosphere. Almost all weather occurs here. Most humans will spend their entire lives in the troposphere. Air

temperature gets very cold as altitude increases until the top of the troposphere is reached.

Stratosphere

The layer just above the troposphere. This layer has extremely thin air. Humans would not be able to breathe in the stratosphere. The extremely important ozone layer is at the top of this layer. Because the ozone layer absorbs solar energy, temperatures rise as altitude increases in the stratosphere.

Mesosphere

On top of the stratosphere is the mesosphere. This is the coldest layer. There is not much to this area of the atmosphere except the molecules of the atmosphere are beginning to become thick enough to burn up meteors in this layer. Temperatures once again grow colder as altitude increases. In fact, this is the coldest layer of the atmosphere.

Thermosphere

This next layer has extremely high temperatures but there is no heat. This is because heat and temperature are different. Temperature is a measure of the energy of a particle in motion. Heat is created when those particles hit each other. The molecules in the thermosphere have a lot of energy because they are heated from the sun. However, they are so far apart they cannot touch to transfer that energy and create heat. The International Space Station and certain satellites are in this layer. The unofficial boundary between our atmosphere and space is at 100 km and is called the Karman Line.

Ionosphere

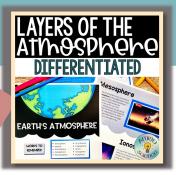
This area is a special sub-layer of the atmosphere, and not a distinct layer like the others. It overlaps into the mesosphere and thermosphere. The ionosphere is created through radiation from the sun and continually varies in thickness depending upon the amount of energy it absorbed. This solar absorption causes nitrogen and oxygen atoms in the atmosphere to become electrically charged, creating a glow. This is the aurora borealis or aurora Australis, which occurs in this layer.

Exosphere

The last and extremely thin layer of the atmosphere. This layer gradually fades out over thousands of miles until it disappears. Objects like the Hubble Space Telescope and satellites are in this layer.



Weather Activities:





Teach the atmosphere with this activity!







