

Layers of the Atmosphere

1. Label the four layers of the atmosphere on the diagram provided.
2. Draw some features like mountains, buildings or trees on the Earth's surface (keep them small).
3. About 35 to 45 kilometers above the Earth's surface in the stratosphere is the giant protective umbrella or shield known as the "**ozone layer**" which is made up of ozone gas. Using the symbol for ozone, draw a band across the diagram at the proper level. 
4. The ozone layer is important because it absorbs **ultraviolet radiation** and does not let it get through to the Earth's surface to cause us harm. Draw three wavy lines coming from space to represent the UV radiation that is absorbed by the ozone layer. 
5. **Ions** are electrically charged particles. When nitrogen and oxygen atoms absorb energy in the upper mesosphere and lower thermosphere, they become ions. This forms what is called the **ionosphere** and makes long distance radio communication possible. Draw a band of ion symbols across the diagram at the proper altitude to represent the ionosphere. 
6. The ionosphere is also home to the auroras and the altitude that the space shuttle flies. Draw a few colorful auroras and a space shuttle.
7. Find the layer where weather occurs and draw a few clouds and some precipitation at the proper altitude.
8. The atmosphere becomes less dense (more space between air particles) as you get further above the Earth's surface. Use an arrow and words to show this on the diagram.
9. At some elevations there are layers of gases that absorb radiation from the sun and cause the temperature to increase. This occurs at the ozone layer and the outer portions of the thermosphere. This causes the air temperature to rise in some layers and lower in some layers of the atmosphere. Use arrows and words to describe which layers are getting warmer and which layers are getting cooler as altitude increases.
10. Use the space below to create a key for all the symbols that you used on the diagram.

