Name_____ Date_____ Hour _____

A Model of Earth's Atmosphere

Purpose: The purpose of this activity is to draw a model of the four layers of Earth's Atmosphere.
Objectives: Students will be able to describe the four layers of Earth's atmosphere and the characteristics of each.

Materials:
- metric ruler, pencil, colored pencils

Procedure:
Check off each task as you do it.

1. Use the back of this paper.
2. The half circle that is on the edge of the paper represents Earth.
3. Color Earth blue and green to represent oceans and continents.

4. Draw the **troposphere.**
   The first layer of Earth's atmosphere, the ***troposphere,*** extends 16 km above Earth.
   a. Using a scale of 1mm for 1 km, place a series of dots around Earth, 16mm from the planet's surface. Connect the dots to form a circle around Earth.
   c. Label the inside of this circle 'troposphere.'
   d. Color this area orange.
   e. Draw pictures to indicate that this is the area in which airplanes fly and weather happens.

5. Draw the **stratosphere.**
   The second atmospheric layer, the *stratosphere,* extends 48 km above Earth's surface.
   a. Measure and draw a circle 48 mm ***from Earth's surface.***
   b. Label this layer 'stratosphere.'
   c. Color this area yellow.
   d. The jet stream occurs between the troposphere and the stratosphere, so draw arrows to represent this fast moving current of air on the borderline between the two layers.

6. Draw the **mesosphere.**
   The third layer of the atmosphere, the *mesosphere,* extends 80 km from Earth's surface.
   a. Measure and draw a circle 80 mm from the Earth's surface.
   b. Label this layer 'mesosphere'.
   c. Color this area blue.
   d. This is the coldest layer, so draw a thermometer to represent the very cold weather.

7. Label the **ozone.** The ozone is not a main layer of Earth's atmosphere, but it plays a very important role in the atmosphere.
   a. The ozone is between the stratosphere and mesosphere.
   b. Ozone is made of three atoms of oxygen.
   c. Along the border of the stratosphere and mesosphere, draw molecules of ozone in red - 3 connected dots - leaving a tiny area empty to represent the 'hole' in the ozone layer.

8. Draw the **thermosphere.**
   The fourth layer of atmosphere, the *thermosphere,* extends 480 km above Earth's surface.
   a. Label this next layer 'thermosphere'.
   b. Color the remaining part of your paper green.

9. Label the **ionosphere.**
   a. A thin region in the thermosphere, called the ionosphere, contains charged atoms.
   b. Label the ionosphere and draw + and - signs to represent those atoms.
   (Remember, this is not a layer, just a region in the thermosphere.)

When meteoroids enter Earth's atmosphere, they enter the thermosphere, which is extremely hot. Because of the heat and friction with molecules in the atmosphere, most meteoroids burn up. A meteoroid falling through Earth's atmosphere is called a meteor.

10. Draw and label a meteor entering Earth's atmosphere

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