

SCALE DRAWING OF THE ATMOSPHERE

Purpose:

The purpose of this activity is to draw a model of the four layers of Earth's Atmosphere using the information that you gathered in the Temperature and the Earth's Atmosphere handout.

Objectives:

Students will be able to describe the four layers of Earth's atmosphere and the characteristics of each.

Materials:

white paper
pencil
colored pencils, crayons
circle patterns

Procedure:

Check off each task as you do it. The scale of the drawing is 1 mm= 1 km.

1. Obtain a piece of white paper.
2. Draw the Earth (smallest circle=radius 2 cm)
 - a. Use a pencil to trace the smallest circle in the middle of the paper.
 - b. Color Earth blue and green to represent oceans and continents.

3. Draw the **troposphere**.

The first layer of Earth's atmosphere, the **troposphere**, extends _____ above Earth.

- a. Trace the next larger circle with a radius of _____ cm.
- b. Label the inside of this circle 'troposphere.'
- c. Color this area orange.
- d. Identify important characteristics of this layer on the drawing. Be sure to put these characteristics in this layer.

4. Draw the **stratosphere**.

The second atmospheric layer, the **stratosphere**, extends _____ above Earth's surface.

- a. Trace the next largest circle with a radius of _____ cm.
- 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.
- e. Identify important characteristics of this layer on the drawing. Be sure to put these characteristics in this layer

5. Draw the **mesosphere**.

The third layer of the atmosphere, the *mesosphere*, extends _____ km from Earth's surface.

- a. Trace the last circle with a radius of _____ cm.
- b. Label this layer 'mesosphere'.
- c. Color this area blue.
- d. Identify important characteristics of this layer on the drawing. Be sure to put these characteristics in this layer

6. 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 connected dots - leaving a tiny area empty to represent the 'hole' in the ozone layer.

7. Draw the **thermosphere**.

The fourth layer of atmosphere, the *thermosphere*, extends _____ km above Earth's surface.

- a. Label this next layer 'thermosphere'.
- b. Color the remaining part of your paper green.
- c. Identify important characteristics of this layer on the drawing. Be sure to put these characteristics in this layer.

8. 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.)

9. Add a scale to the lower right corner 1 mm= 1 km.