

Weather Journal: Layers of the atmosphere

In this activity, we will be making a graphic scale model of the layers of the atmosphere.

Materials: scissors, glue stick, white paper (8.5x11), colored construction paper

Start by turning your paper to a 'landscape' view. We will be adding some information to your model, so keep a margin of about 10 cm on the right side of your paper. We will be using a *scale* where 1 mm will be equal to 1KM in the real world.

The bottom layer will be light blue. It is about 16Km thick. Cut a rectangle that is 10 cm wide and the correct height for your layer. Glue that rectangle on the lower right side of your sheet. The correct scale for this layer should be ____ cm high. You may neatly label it 'Troposphere'.

The next layer will be purple. It is about 32Km thick. This layer will be _____ cm high and 10 cm wide. You may neatly label it 'Stratosphere'.

The next layer will be dark blue. It is about 40 Km thick. This layer will be _____ cm high and 10 cm wide. You may neatly label it 'Mesosphere'.

The next layer will be red. It is about 340 Km thick. This layer will be _____ cm high and 10 cm wide. Don't worry if it is too long - you can fold it over in order to store your model. You may neatly label it 'Thermosphere/Ionosphere'.

With a red marker, draw a line across your diagram at about 46 Km. Make your line about 3mm thick (a marker is good). Label this line off to the right as 'Ozone Layer'.

Mark the bottom of your paper 'Sea Level'.

Now cut a small triangle out of white paper to represent Mt. Everest. Mt. Everest is about 9Km high. The triangle should be _____ cm high.

The SR -71 Blackbird can fly as high as 90 Km. You may draw one at the correct scale for 90Km.

You may draw a small space shuttle at the correct scale for 300Km.

The highest human village is at 4Km. You can make an icon for that if you can!

The highest clouds are at 14Km. You may use a thin strip of white to mark the highest clouds.

Questions

1. When does the atmosphere end and space begin? Explain your choice of altitude.

2. List some other good words for altitude:

3. Is the hydrosphere part of the atmosphere? Explain your answer.

4. Why can't humans or other large mammals live above 4,000meters (4Km) of altitude?

5. Does what the atmosphere is made of change as you get higher in altitude?