

## Organelle of the Day-Cell Wall

Over 300 years ago a scientist named Robert Hooke examined cork under a microscope. When he saw the tiny, boxlike structures they reminded him of the small rooms in his monastery. Hooke was the first one to call these tiny structures cells.

Today you are going to look at some cork cells. Cork comes from the bark of a cork tree - a type of oak tree. The cork oak grows in southern Europe and northern Africa. The bark of these trees has a thick layer of cork that is harvested about every nine years. The cells in the cork layer are dead so they contain no cytoplasm but they do have a tough cell wall.

Follow the directions carefully so you can see the cork cells. Remember be sure to use the microscope carefully.

1. Get a clean slide and cover slip.
2. Put a drop of water on the middle of the slide.
3. Take the slide to your teacher to get some pieces of cork. Gently place the pieces of cork into the drop of water.
4. Gently put the cover slip on following the procedure you used for the letter "e" (using forceps hold the cover slip at an angle and lower it slowly onto the slide).
5. Using the low power lens (the smallest lens) find the cork piece. Try to find a single layer of cells at the edge-it will look like an old fishing net.
6. Have your teacher check to make sure you are looking at the right part of the cork. Have her/him put their initials here \_\_\_\_\_.
7. Now switch to high power!!
8. Bring the cells into focus under high power using **ONLY THE FINE ADJUSTMENT KNOB!**
9. Draw several cells in the space on the back of this sheet as they appear under high power. Make sure your drawing takes up the whole space.
10. Wash off the microscope slide, dry it thoroughly, and put it in the location that your teacher directs you.
11. Turn off your microscope. Make sure it is on the lowest power, and use a slightly damp paper towel to wipe off the stage of your microscope.

## Cork Cells

Make sure you label the cell walls. Use a ruler to draw the line for your label.

### Questions:

1. Cell walls are composed of \_\_\_\_\_. (hint: carbohydrate)
2. Why is there no cytoplasm in cork cells? \_\_\_\_\_  
\_\_\_\_\_
3. What is the function of the cell wall?  
\_\_\_\_\_
4. Would you expect to find a cell wall in one of your body cells? Why/Why not?  
\_\_\_\_\_
5. When you do a drawing of something you see under the microscope it is helpful to include the actual magnification. This is a measurement of how much you have enlarged the object in your drawing. For example let's see how much you have magnified cork cells in your drawing. Follow the procedure below.
  - a. Measure the length of one of your cork cells in the drawing in millimeters and write it here \_\_\_\_\_.
  - b. The average cork cell is about 0.02 mm. To calculate how much you have magnified a cork cell divide the number from "a." by 0.02. Write your answer here \_\_\_\_\_X. The "X" means that is how many times your drawing has magnified the cell. Write the magnification at the bottom of your drawing.