

Activity: The "Virtual Cell"

Purpose: To get a close-up view of several organelles in 3-D! You will be able to choose certain organelles within the cell and manipulate them by zooming in on the organelle, rotating the image, and dissecting several organelles to view their contents.

The intent of the activity is to provide you with a better feeling of the appearance (structure), function, and location of the organelles.

Search for "virtual cell" or go to: <http://www.ibiblio.org/virtualcell/>

You should explore the following organelles within "The Virtual Cell". Check them off as you go:

1. Mitochondria
2. Centrioles
3. Smooth Endoplasmic Reticulum (ER)
4. Rough Endoplasmic Reticulum (ER)
5. Lysosomes
6. Golgi Body
7. Nucleus (chromatin, nucleolus, ribosomes)

Click on the "Virtual Cell Tour" and answer the following questions:

1. Describe the process in which proteins are packaged by the golgi body.
2. Describe the structure of lysosomes.
3. What are the functions of lysosomes.
4. What is autolysis?
5. Describe the outer and inner structure of mitochondria.
6. Why is the inner membrane of mitochondria ruffled?
7. Where might have mitochondria originated from? Why?
8. Describe the arrangement of microtubules that compose the centrioles.
(Hint: ?look carefully at the image)
9. Describe the outer membrane of the nucleus.
10. Describe the inner contents of the nucleus.
11. Describe the appearance of the nucleolus.
12. Describe the appearance of the endoplasmic reticulum.
13. What makes rough ER "rough"?
14. Illustrate a typical animal cell as shown in the virtual tour and label all parts.