

Here are a few center ideas. Read them over, use or adapt the ones you like.

## CELL CENTERS

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### Activity 1

This activity requires the use of the microscopes. Read through the information to make sure you understand what it is you have to do and then start the activity. Remember to jot down your observations and sketch your diagrams as accurately as possible. When you are finished, your first job is to clean up. When everything has been put away you may then start your good copy which is due in your next science class. Your good copy should be written in pen, diagrams in pencil and fully labeled, and should include the following information: Purpose, Materials, Method, Observations and Conclusions.

### PLANT CELLS - Onion Activity

Place a drop of water in the middle of a clean slide. Using the forceps, gently remove a section of the skin from the inside layer of the onion and place it on the slide in the drop of water. Put the cover slip over the top by placing the edge of the cover slip on the end of the drop of water then gently lower the cover slip down on the drop of water using the forceps to hold it. Observe through the microscope (by first using low-power and working up to high-power). What internal structures do you see? Now place one drop of iodine on the slide just to the side of the cover slip. Let the slide set for 3 minutes letting the iodine stain the cells. Again observe the cells through the microscope. Do you see more details in the cell? Again in the space provided make a perfect circle, then draw one cell in that space labeling all the parts identified. Include as many structures as you can see. Indicate the power at which you are observing the cell and give the estimated size of the cell (length and width). Clean and dry the slide and cover slip when done. Possible structures that could be identified: cell wall, cell membrane, cytoplasm, nucleus, and vacuole.

## Activity 2

You will use the resources in the room to complete the activity on protozoa. When you are finished, remember to put away your resources and clean up the station so it is ready for the next team.

### PROTOZOA

You are to draw 3 fully labelled diagrams of the following unicellular organisms: amoeba, paramecium and euglena. Each diagram should be one half page in size including the border. Diagrams should be completed in pencil as accurately as possible and labels and titles should be in pen. When you have completed your diagrams you are to research the characteristic of *locomotion* and are to explain how each of the organisms is able to move about. This written description should be no more than one half of a page.

### **Activity 3**

This activity requires the use of the microscopes. Read through the information to make sure you understand what it is you have to do and then start the activity. Remember to jot down your observations and sketch your diagrams as accurately as possible. When you are finished, your first job is to clean up. When everything has been put away you may then start your good copy that is due in your next science class. Your good copy should be written in pen, diagrams in pencil and fully labeled, and should include the following information: Purpose, Materials, Method, Observations and Conclusions.

#### **ANIMAL CELLS - Human**

**Check to see if you are able to do this activity. You may have to obtain prepared cells.**

Place a drop of iodine in the middle of the slide. With the end of the toothpick rub the inside of your cheek then stir the toothpick in the iodine. Place a cover slip over the iodine by placing the edge of the cover slip on the end of the iodine, then gently lower the cover slip down on the drop of iodine using the forceps to hold it as you have done before to avoid air bubbles then place the slide under the microscope. Observe starting with the low objective and working up to the high power objective. Again after making the circle in the space, make a drawing of the cell and label all of the structures that you see. Clean and dry the slide after your observations and data collection. Possible structures that could be identified: cell membrane, cytoplasm, nucleus and vacuoles. Make sure that your lab station is clean and that the microscope is not left on high power, that it is unplugged and covered, that the slides have been cleaned and are dry and the station is ready for the next team.

## Activity 4

In this activity you will be using the computer to research the topic of cell structures and functions. The sites you are to use have been book marked for you. Remember to shut down properly when you have finished

### CELL STRUCTURE and FUNCTION

Give a brief description (1-2 sentences) of the function or job of each of the following cell parts. You will find that all the parts except for two of them are common to both animal and plant cells. Make sure that you write your description in your own words to ensure your understanding. You may set this activity up in chart form, list form or in the form of your choice.

<b><i>Cell Parts:</i></b>	Cytoplasm	Nucleus	Vacuole
Mitochondria	Ribosomes	Lysosomes	Endoplasmic Reticulum
Golgi apparatus	Cell wall	Chloroplasts	Cell membrane

## Activity 5

This activity requires the use of the microscopes. Read through the information to make sure you understand what it is you have to do and then start the activity. Remember to jot down your observations and sketch your diagrams as accurately as possible. When you are finished, your first job is to clean up. When everything has been put away you may then start your good copy which is due in your next science class. Your good copy should be written in pen, diagrams in pencil and fully labeled, and should include the following information: Purpose, Materials, Method, Observations and Conclusions.

### Animal and Plant Cells - Pond Water

Place a drop of pond water (see me ) in the middle of the slide, then gently lower the cover slip down on the drop of water using the forceps to hold it as you have been instructed to avoid air bubbles, then place the slide under the microscope. Observe starting with the low objective and working up to the high power objective. Look carefully and slowly! You may have to move the slide around so that you have a chance to examine your entire drop of water. You are looking for living protists and other living things. You may have to wipe your slide clean and get a second drop of pond water to study. Your job is to try and identify and sketch any microorganisms that you see. When you are finished make sure that your lab station is clean and that the microscope is not left on high power, that it is unplugged and covered, that the slides have been cleaned and are dry and the station is ready for the next team.

## Activity 6

In this activity you will be using various resources to become more familiar with plant and animal cells. When you are finished, please remember to tidy up your work area and return all materials to the proper place.

### PLANT and ANIMAL CELLS - diagrams

Use whatever resources are available to you to construct two detailed illustrations of a plant cell and an animal cell. Be accurate, take your time, and remember to add colour. The following labels should also be on your diagrams:

Cell membrane	Cytoplasm	Nucleus	Vacuole
Mitochondria	Ribosomes	Lysosomes	Endoplasmic Reticulum
Golgi apparatus	☺ Cell wall	☺ Chloroplasts	

☺ - *a reminder that this particular part of a cell is only found in plant cells*  
**Please make your diagrams about 3/4 of a page each.**