



## 6-CA2 Cell Unit Culminating Activity: The Cell as a System

2/5/08

### Student Directions:

**Objective:** Students will understand the cell as a system by comparing it to a more familiar example of a system, such as a factory, a school, a city, or a human body.

Your job is to design a factory or city where each organelle is a part of the overall system. Use the Cell Function Chart to assign each organelle to be a part of your system and explain its job and function. You will explain how the individual parts of your design operate so that the entire system performs successfully.

### Cell Function Chart Sample - A School as a System:

#1 Cell Organelle	#2 Function of the Organelle	#3 Corresponding Part	#4 Explain the Connection between #1 and #3
Nucleus	<i>Directs the cell's activities</i>	<i>The principal's office in a school</i>	<i>A principal directs the activities in a school like the nucleus directs the activities in a cell.</i>

**Use this checklist and your rubric (see back) to help you complete all of the parts of this project successfully:**

#### 1. Complete the Cell Function Chart

- Complete column #2: Function of the Organelle. Review sample above.

Due Date: \_\_\_\_\_

- Choose either a plant or animal cell. Choose a system to design:

The system I will design is a \_\_\_\_\_ based upon a(n) \_\_\_\_\_ cell.

- Complete column #3: Corresponding Part and column #4: Explanation. Review sample above.

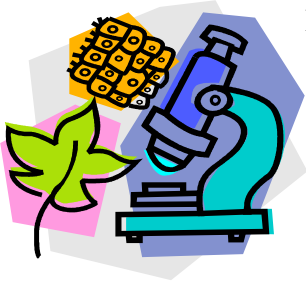
Due Date: \_\_\_\_\_

**2. Use the information from your chart and create a project which demonstrates your system. Your project may be a model, diagram, power point, play, poem, or an original idea. You must get approval from your teacher before you begin your project.**

- Teacher approval
- Complete project

Due Date: \_\_\_\_\_

**3. Complete the Assessment Questions** Due Date: \_\_\_\_\_



Name \_\_\_\_\_ Hr. \_\_\_\_\_ Date \_\_\_\_\_

## 6-SCA2 Assessment Questions

Think about how the cell operates as a system and answer the following questions in complete sentences.

1. Cells need energy to work. Explain where the energy comes from.

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2. The cell operates as a system. What is produced when this system is working?

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3. Can any one part of this system do what the whole system does? Explain your response.

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4. Identify at least two parts of this system that must interact and describe how they work together.

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5. Describe how the function of this system would change if any part wears out.

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**Cell Function Chart** \* Organelles with a star may not be in your type of cell.

The system I will design is a \_\_\_\_\_ based upon a \_\_\_\_\_ cell.

#1 Cell Organelle	#2 Function of the Organelle	#3 Corresponding Part	#4 Explain the Connection Between #1 and #3
Nucleus			
Mitochondria			
Lysosome *			
Cytoplasm			
Vacuole			
Cell Wall *			

#1 Cell Organelle	#2 Function of the Organelle	#3 Corresponding Part	#4 Explain the Connection Between #1 and #3
Endoplasmic Reticulum			
Golgi Body			
Nucleolus			
Chloroplasts*			
Chromatin			
Cell membrane			
Ribosomes			

