Cells Inquiry Activity

Student Directions:
In this activity you will find out more information about cells. Then you will select one way to present your information on cells.

Part 1 is DUE Thursday 4-18 at the beginning of class.

Part 1

Your Assignment: Using the available reading selections and internet sources, you will answer the questions below about cells. You may complete this independently or in pairs.

You will need to use at least 2 reading source and at least 2 internet source. Be sure to properly cite each source.

1. What are the vital organelles for plant and animal cells? What are the functions of those organelles?
2. Explain how each group of organelles are connected. How do they work together to use proteins/food in the cells?
   a. Golgi body, endoplasmic reticulum, ribosomes
   b. Vacuoles and chloroplasts

3. What is the function of a cell membrane? Name at least 2 organelles that act like a cell membrane and explain why.

4. Fill in the Venn Diagram below about plant and animal cells. You must have at least 3 differences of each and at least 2 similarities.

![Venn Diagram]
Scoring for Cells Inquiry Part 1

- **Advanced= 4**
  - used 3 different sources and 3-4 different ones of each source
  - All answers cited
  - All ?’s correct and answered
  - Very detailed answers and research on all ?’s
  - All complete sentences

- **Proficient= 3**
  - Used at least 2 reading & 2 internet sources
  - All answers cited
  - All ?’s answered
  - 1 question incorrect

- **Basic= 2**
  - Used only 1 reading & 1 internet source
  - 1-3 ?’s not cited
  - 1-2 ?’s not answered
  - 2 ?’s incorrect

- **Below Basic= 1**
  - Used 1-0 sources
  - 4 or more ?’s not cited
  - 3 or more ?’s not answered
  - 3 or more ?’s incorrect

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**Part 2:**

**Your Assignment:** Take the information you researched and learned in part 1 and develop 1 final project.

**Presentations will be Tues. 4-23 & Wed. 4-24.**

**Options:**

1. **Cell Brochure**- (see separate handout for more info)
   a. Make a cell brochure advertising the cell as an amusement park. You will need to include all the information from part 1.
   b. You may work independently or with 1 other person. If you work with another person you must both create a brochure.

2. **Puppet Show**- (see separate rubric for scoring)
   a. Write a **script** and **perform** a puppet show that uses puppets to tell the audience a story about the cells. It will need to include all the information from part 1.
   b. You may work independently or in groups of 2, 3, or 4.
# Cells: Puppet Show or Play

**Student Name:**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expression</strong></td>
<td>Puppeteers' voices showed a lot of expression and emotion.</td>
<td>Puppeteers' voices showed some expression and emotion.</td>
<td>Puppeteers' voices showed a little expression and emotion.</td>
<td>Puppeteers' voices were monotone and not expressive.</td>
</tr>
<tr>
<td><strong>Voice Projection</strong></td>
<td>Voices of puppeteers were always audible to people sitting in the back row.</td>
<td>Voices of puppeteers were usually audible to people sitting in the back row.</td>
<td>Voices of puppeteers were sometimes audible to people sitting in the back row.</td>
<td>Voices of puppeteers were rarely audible to people sitting in the back row.</td>
</tr>
<tr>
<td><strong>Accuracy of Story &amp; Scripts</strong></td>
<td>All important parts of story were included and were accurate. Used script has one written.</td>
<td>Almost all important parts of story were included and were accurate. Used script has one written.</td>
<td>Quite a few important parts of story were included and were accurate. Script not fully written.</td>
<td>Much of the story was left out or was inaccurate. No script.</td>
</tr>
<tr>
<td><strong>Puppet Manipulation</strong></td>
<td>Puppeteers always manipulated puppets so audience could see them.</td>
<td>Puppeteers usually manipulated puppets so audience could see them.</td>
<td>Puppeteers sometimes manipulated puppets so audience could see them.</td>
<td>Puppeteers rarely manipulated puppets so audience could see them.</td>
</tr>
<tr>
<td><strong>Rehearsed</strong></td>
<td>Well rehearsed and practiced.</td>
<td>Have rehearsed and practiced.</td>
<td>Sort of rehearsed and practiced.</td>
<td>Did not rehearse or practice.</td>
</tr>
</tbody>
</table>

| Total: | 150 points | TURN IN THIS RUBRIC WITH YOUR Presentation |

**PRO = 50 - 43 pts**

**BAS = 42 - 35 pts**

**BB = 34 - 1 pts**
PROJECT DESCRIPTION

ABSTRACT:

You will be required to produce a travel brochure to attract visitors to spend money to visit an animal and plant cells. Students can think about their cell as a huge amusement park, or even better, a small roadside attraction. The brochure must describe at 11(plant) & 9(animal) "attractions" (organelles or cell processes) that will "delight and amaze" their potential customers. Humor and creativity are encouraged. Brochures are evaluated by accuracy of organelle descriptions, answering all of cell inquiry part 1 questions, design and creativity.

PROCEDURE:

Using small roadside attractions as an inspiration, students produce a travel brochure to entice visitors to take the next exit and visit the "incredible, amazing!, and unbelievable!" sights of an animal and plant cells. For example, visitors might want to "visit the ribosomes, located just outside the nucleus, and watch as proteins are synthesized RIGHT BEFORE YOUR VERY EYES!". Students will be allowed a creative license in their descriptions, such as "be sure to visit the Golgi center inside the gift shop, and have your purchases gift wrapped for you before you leave."

GRADING:

- Grades will be based on the following:
- Is your name on the brochure?
- Are all the organelles included?
  - (11 for plant cells, 9 for animal cells) - listed on other side
- Are the organelles describes as an “attraction” and include their function?
- Are the relationships between the parts (if any) shown correctly?
  - Are some of the ribosomes on or near the endoplasmic reticulum?
  - Is the endoplasmic reticulum near the nucleus?
  - Are the chloroplasts around the vacuole?
- Did you use humor and creativity to entice visitors to your park or attraction?

PROJECT DUE DATE:
# Cell Brochure Rubric

**Student's Name:**

<table>
<thead>
<tr>
<th><strong>Project Requirements:</strong></th>
<th><strong>Score:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name on project</td>
<td>0</td>
</tr>
<tr>
<td>Cell type identified</td>
<td>0</td>
</tr>
<tr>
<td>All organelles, function, and attraction included:</td>
<td></td>
</tr>
<tr>
<td>cell wall (plant)</td>
<td>0</td>
</tr>
<tr>
<td>chloroplasts (plant)</td>
<td>0</td>
</tr>
<tr>
<td>cellulose (plant)</td>
<td>0</td>
</tr>
<tr>
<td>cell membrane</td>
<td>0</td>
</tr>
<tr>
<td>nucleus</td>
<td>0</td>
</tr>
<tr>
<td>chromosomes</td>
<td>0</td>
</tr>
<tr>
<td>cytoplasm</td>
<td>0</td>
</tr>
<tr>
<td>endoplasmic reticulum</td>
<td>0</td>
</tr>
<tr>
<td>golgi body</td>
<td>0</td>
</tr>
<tr>
<td>ribosomes</td>
<td>0</td>
</tr>
<tr>
<td>mitochondria</td>
<td>0</td>
</tr>
<tr>
<td>vacuole</td>
<td>0</td>
</tr>
<tr>
<td>lysosomes (animal)</td>
<td>0</td>
</tr>
</tbody>
</table>

Relationships correct?

| some ribosomes on ER?     | 0         | 5         |
| ER near nucleus           | 0         | 5         |
| chloroplasts around vacuole (plant) | 0   | 5 |

Neatness (FDQ)        | 0 | 1 | 2 | 3 | 4 | 5 |
Creativity            | 0 | 1 | 2 | 3 | 4 | 5 |

**CELL TOTAL:**

out of 40

**Percent**

PRO = 40 - 34 pts
BAS = 33 - 28 pts
BB = 27 - 1 pts