Cell Theory – Levels of Organization – Cell Parts - Homeostasis
Advanced - Station 1

1. What are the levels of organization in order from smallest to largest?

2. What is the pattern in the levels of organization?

2. The patterns in the levels of organization is ......
Advanced - Station 2

1. What levels of organization make up an organelle?
   1. An organelle is made up of ......

2. Describe the different between a compound and molecules.
   1. Compounds are..... While molecules.....

3. What is the relationship between cells and tissue?
   1. The relationship between cells and tissue ....
Station 3

1. What are the three postulates of the Cell Theory.
   1. The three parts of the cell theory are
      1. __________
      2. __________
      3. __________

2. What evidence supports the cell theory?
   1. Evidence that supports the cell theory is ........

3. Can the information in the Cell Theory explain metal? Explain.
   1. Information in the cell theory ____________ explain metal because ....
Station 4

1. Define homeostasis.
   1. Homeostasis is ......

2. How does an ecosystem maintain homeostasis?
   1. An ecosystem maintains homeostasis by ..... 

3. A biotic factor is a worm or llama. An abiotic factor is the sun or rocks. Define biotic factor. Define abiotic factor.
   1. A biotic factor is ......
   2. An abiotic factor is .....
Advanced - Station 5

1. How do the cells in a person’s body help them in homeostasis?
   1. A person’s cells help maintain homeostasis by ....

2. What organelles are involved in removing waste from the cell?
   1. Organelles involved in removing waste are ......

3. Describe the different between exocytosis and autophagy.
1. Write and fill in the chart below

<table>
<thead>
<tr>
<th>Location - Organelle</th>
<th>Process</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Photosynthesis</td>
<td></td>
</tr>
<tr>
<td>Mitochondria</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. What is the function of the Stoma?

2. Compare and contrast transpiration in plants to respiration in animals?
Station 8

1. Why is photosynthesis only found in plants?

2. How are the following terms related?
   • Mitochondria, carbon dioxide, photosynthesis
Station 9

1. What process creates energy for the cell?

2. How could the cytoplasm and vacuoles be similar?
Station 10

1. How are the ER, ribosomes, and Golgi apparatus related?

2. How are the cytoplasm and vacuoles similar?

3. If carnivorous plants consume insects why do they still need a chloroplast?
Answers
Advanced - Station 1

1. What are the levels of organization in order from smallest to largest?
   1. Atoms, elements, molecules, compounds, cells, tissue, organ, organ system, organisms

2. What is the pattern in the levels of organization?
   2. The patterns in the levels of organization is the smaller levels make up the larger levels.
Advanced - Station 2

1. What levels of organization make up an organelle?
   1. An organelle is made up of atoms, elements, molecules, and compounds

2. Describe the different between a compound and molecules.
   1. Compounds are made up of different elements (CO2) While molecules are made up of the same elements (O2)

3. What is the relationship between cells and tissue?
   1. The relationship between cells and tissue are similar cells working together create tissue.
1. What are the three postulates of the Cell Theory.
   1. The three parts of the cell theory are
      1. Cells make up all living things
      2. Cells come from other cells
      3. Cells are the basic (smallest) unit of life

2. What evidence supports the cell theory?
   1. Evidence that supports the cell theory is looking at plants, animals, insects, bacteria, etc all have cells However, things that are not alive and never have been alive do not have cells.

3. Can the information in the Cell Theory explain metal? Explain.
   1. Information in the cell theory can not explain metal because metal is not alive.
1. Define homeostasis.
   1. Homeostasis is keeping internal stable conditions.

2. How does an ecosystem maintain homeostasis?
   1. An ecosystem maintains homeostasis by having enough food for the animals, enough water, shelter, not having too many predators, etc.

3. A biotic factor is a worm or llama. An abiotic factor is the sun or rocks. Define biotic factor. Define abiotic factor.
   1. A biotic factor is living things
   2. An abiotic factor is non-living things
Advanced - Station 5

1. How do the cells in a person’s body help them in homeostasis?
   1. person’s cells help maintain homeostasis by
      1. removing waste
      2. reproducing and making more cells
      3. breaking down glucose to make energy

   What organelles are involved in removing waste from the cell?
   2. Organelles involved in removing waste are vacuoles, cytoplasm, cell membrane, lysosomes.

2. Describe the different between exocytosis and autophagy.
   1. Exocytosis the waste is removed from the cell. Autophagy the waste or cell parts are recycled.
### Advanced - Station 6

1. Write and fill in the chart below

<table>
<thead>
<tr>
<th>Location - Organelle</th>
<th>Process</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroplast</td>
<td>Photosynthesis</td>
<td>To make glucose or food for the plant</td>
</tr>
<tr>
<td>Mitochondria</td>
<td>Celluar Respiraiton</td>
<td>To convert the glucose and oxygen into energy</td>
</tr>
</tbody>
</table>
1. What is the function of the Stoma?
   1. Stomata bring in CO2 and release Oxygen and water.

2. Compare and contrast transpiration in plants to respiration in animals?
   1. Both transpiration and respiration is the release of gases and water. Transpiration is the intake of carbon dioxide and release of oxygen, while respiration is the intake of oxygen and release of carbon dioxide.
1. **Why is photosynthesis only found in plants?**
   1. Plants have to make their food (sugar / glucose) to get energy and photosynthesis is the process that makes the food.

2. **How are the following terms related?**
   • Mitochondria, carbon dioxide, photosynthesis
   • Photosynthesis makes glucose, and oxygen which is used in the mitochondria to make energy for the cell and release CO2
Station 9

1. What process creates energy for the cell?
   1. Cellular respiration

2. How could the cytoplasm and vacuoles be similar?
   1. Both are used in exocytosis
   2. The cytoplasm stores and holds things together in the cell, vacuoles stores things inside it self
Station 10

1. How are the ER, ribosomes, and Golgi apparatus related?
   1. The ribosomes read the DNA from the nucleus. The ER helps ribosomes make proteins. The Golgi apparatus receives and ships the proteins and other substances from the ER.

2. How are the cytoplasm and vacuoles similar?

3. If carnivorous plants consume insects why do they still need a chloroplast?
   1. There is no guarantee that they will catch enough insects and get enough nutrients. By still having the chloroplast they can make food for themselves and get extra energy by breaking down insects.