**Cell Analogy Poster Name:**

**Cell Structure & Function**

**Objective**: Relate the main features and properties of cells to their functions

**Goal**: For this project you will need to make original and appropriate functional analogies between cell structures and everyday objects. When the collages are displayed every one will be different. By reading and discussing different analogies, you will gain a deeper understanding of the function of cell parts.

**Directions: Cell Diagrams**

Look at your cell diagrams of the plant an animal cell, and make sure that the diagrams have the following structures:

1. Cell membrane
2. Cytosol
3. DNA
4. Vacuole
5. Rough endoplasmic reticulum
6. Smooth endoplasmic reticulum
7. Golgi Bodies
8. Secretory vesicles
9. Mitochondria
10. Nucleus
11. Cytoskeleton (animal cell only)
12. Lysosome (animal cell only)
13. Chloroplast (plant cell only)
14. Cell wall (plant cell only)

Color each organelle/structure a different color.

**Factory Analogy**

As a small group, discuss what we mean by a “Factory Analogy” of a cell. Describe your discussion in the space provided below.

**Your Analogy**

Pick a theme for your analogy. You have already discussed the factory analogy, and now you should come up with your own. You can make a school analogy, a garden analogy, or whatever you like!

For your analogy you will need to do the following:

1. Find a picture (magazine, newspaper, Internet, or your own drawing) of an object that has a similar function (or use) as each cell structure.
2. Write an analogy to show the similarity between the cell structure and the everyday object. Be sure to use the guide to writing analogies.
3. TYPE your analogy.
4. Create a poster of your cell analogy that includes your colored diagram of the cell. Paste the pictures around your cell diagram. Be creative with your poster!
5. Label the pictures with your TYPED analogies and make a pointer (you can use colored string or simply draw a straight line) to the correct structure in your cell diagram. Make sure that your pointers are clear.
6. Come up with a creative title for your poster. Your poster should include the title and your name on the front and a bibliography (with all of your sources!) on the back.

**Guide to Writing Your Analogies:**

**Analogy Guide**: The (insert name of organelle) is like a (insert name of everyday object), because it (insert the function of the organelle) in the same way that the (insert the name of everyday object) (insert the function of the everyday object).

**Example**: The nucleus is like a brain, because it controls and coordinates the activities of the whole cell in the same way that the brain controls and coordinates the activities of the whole body.

**Cell Organelle Poster Preparation Sheet – Grade 8 Science**

**Step 1: Match the organelle function to the list of cell organelles below.**

1. This is the main power source of the cell.
2. This large structure stores water and other liquids.
3. This rigid, outermost structure is only found in plant cells, not in animal cells.
4. This structure contains chlorophyll and is the place where photosynthesis occurs.
5. This is a bubble or a sac that forms from the Golgi body and its job is to transport materials out of a cell.
6. This large, round organelle contains the DNA. Control center of the cell.
7. This maze of membranes makes lipids (fats) and breaks down toxic materials.
8. This web of proteins acts like a muscle or skeleton in animal cells.
9. This maze of membranes makes proteins that are transported to the Golgi body.
10. This protective barrier encloses all cells. It is found in both animal and plant cells.
11. This organelle packages and distributes proteins and lipids that it gets from the endoplasmic reticulum (ER).
12. These bubbles or sacs digest food, destroy worn out organelles, and break down cellular waste.
13. This is a gel of water and proteins that surrounds all of the organelles.
14. This molecule contains the instructions for how to make proteins.
15. Smooth ER
16. Rough ER
17. Cell wall
18. Cell membrane
19. Nucleus
20. DNA
21. Cytosol
22. Vacuole
23. Chloroplast
24. Mitochondria
25. Secretory Vesicles
26. Cytoskeleton
27. Golgi Body
28. Lysosome

**Step 2: Making connections between your theme and cell organelles.**

1. Choose whether you want to do a plant or animal cell for your poster.
2. Decide on the topic or the theme for your analogy.
3. Identify an object or item from your analogy that goes with each of these organelles.
   1. Nucleus
   2. DNA
   3. Cell membrane
   4. Cytosol
   5. Smooth ER
   6. Rough ER
   7. Vacuole
   8. Mitochondria
   9. Secretory Vesicles
   10. Golgi Body
   11. Cytoskeleton (animal)
   12. Lysosome (animal)
   13. Chloroplast (plant)
   14. Cell wall (plant)

**Name of Student Who Checked this Sheet for You: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Checked by Mrs. Childs: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Once this sheet is done and checked by a classmate and by Mrs. Childs you can begin collecting pictures and writing analogies!