

cell organelle analogy project

Biology Choice Board and Student Guidelines

Project Goals and General Guidelines

- Create analogies between the functions of cell structures and everyday objects or places (all from the **same system**) to demonstrate how organelles work.
- Select either a **Plant Cell** or **Animal Cell** (clearly label your choice on your submission).
- Analyze **at least 10 cell structures/organelles** from the master organelle list (additional organelles can be added for bonus points, if analogies are accurate)
- Include a **picture** or **visual representation** for each everyday object used in your analogies.
- Write **2 to 3 complete sentences** for each part explaining the function and comparison.
 - Your description should include the 1) biological function of the organelle, 2) the function of the item that you're comparing it to, then 3) tie together how they are similar or the same.
- This project will be worth **30 Points** (15% overall points deducted if late)

Master Cell Organelles List (Choose *at least 10*)

- Cell Membrane
- Cell Wall*
- Cilia*
- Centriole*
- Cytoplasm
- Chloroplast
- Cytoskeleton
- Flagella*
- Golgi Apparatus
- Rough Endoplasmic Reticulum
- Smooth Endoplasmic Reticulum
- Lysosome
- Mitochondria
- Nucleus
- Nucleolus
- Ribosome
- Vacuole / Central Vacuole*
- Vesicle

**Only found in plant cells*

Grading Rubric (30 Points Total)

Criteria	Description	Points
Cell Diagram and Labels	Clear and accurate cell diagram (plant or animal) with correct structure labels and the biological functions explained in your own words in 1 complete sentence.	10 Points
Analogy Visuals	Picture/drawing of an everyday object with a similar function provided for at least 10 organelles	10 Points
Analogy Explanations	1 to 2 complete sentences explaining the function and each comparison clearly for at least 10 organelles	10 Points

Project Presentation Options

Select **ONE** Option to complete

Option 1: Poster Board Collage	Option 2: Interactive Digital Tour
• Diagram: Place or draw a diagram of a cell (plant or animal) in the center of a poster board. • Labels: Draw lines pointing to at least 10 cell structures and label them clearly. • Functions: Explain the biological function of each organelle in your own words (1 sentence) • Analogy Visuals: Find or draw a picture of an everyday object with a similar function and paste it next to each label – all must be part of the same system (ex. car, house, computer) • Written Analogy: Write 1–2 complete sentences explaining the function and connection for each analogy.	• Format: Create a slideshow or digital presentation using Google Slides, Canva, Prezi • Main Map: Slide 1 must feature a fully labeled diagram of your chosen plant or animal cell. • Organelle Slides: Create individual slides for at least 10 organelles. • Content On Each Slide: Include the organelle name, biological function in your own words, an image of the matching everyday object – all must be part of the same system (ex. car, house, computer), and an analogy explanation.
Option 3: Cell Story or Comic	Option 4: 3D Model
• Format: Design an illustrated storybook, comic strip, or graphic novel (physically, on paper only). • Cell Diagram: Include a labeled cell diagram on the front cover or intro page. • Narrative: Write a story where a city, factory, castle, or school (or other location of your choosing) represents the cell. • Integration: Integrate at least 10 organelles naturally into the story as characters, locations, or tools. • Explanations: For each part, clearly state its biological function, provide a picture of the object/place, and write 1–2 sentences explaining the analogy.	• Format: Build a 3D physical model of an everyday system (ex., airport, restaurant, cruise ship, amusement park) comparing it to a cell using food, Legos blocks, recycled materials, or craft supplies. • Cell Reference: Attach a hand-drawn or printed labeled cell diagram to the display base. • Analogy Tags: Neatly attach flag-labels or index cards to 10 parts of your 3D model. • Tag Details: Each tag must list the organelle name, actual biological function (1 sentence), matching 3D part, and an additional 1–2 sentence explanation connecting them back to the organelle.

