

Cell Logic Puzzle – Mystery Organelle

Teacher Step-by-Step Instructions

1) Prep (prior to class)

1. Print **1 copy per student** (or 1 per pair) of the activity packet.
2. Decide grouping:
 - **Pairs** recommended (best discussion + fastest pacing)
 - **Solo** works for quiet classes / assessment

2) Launch the Activity (3–5 minutes)

Teacher say/do

1. Read the task aloud: students will solve organelle “mysteries” using logic—not guessing.
2. Show the key routine:
 - Read **one clue**
 - Cross out any organelles that **cannot** fit
 - Repeat until **one** remainsMystery Organelle Logic Lab
3. Set the norm: students must be able to explain **why** they crossed something out.

3) Quick Organelle Warm-Up (8–12 minutes)

What students do: Fill in the function for each organelle on the master list. Can use notes if needed.

Teacher moves

1. Tell students: “Use what you know first. If you get stuck, leave it blank and keep moving.”
2. After 6–8 minutes, do a fast check:
 - Ask for 3–4 organelle functions aloud (cold call or volunteers).

4) How to Solve a Logic Puzzle (Model once, 3 minutes)

1. “On the organelle list, put an ✕ next to anything that *cannot* be true.”
2. “Do **not** pick the answer early—let the clues eliminate choices.”

This matches the printed instructions students see for each puzzle.

5) Logic Puzzle: Mystery Organelle (10–12 minutes)

Student directions: Read each clue, cross out organelles that can’t be the answer, continue until one remains. Circulate and check for the most common issue: students crossing out based on “feels right” instead of clue evidence.

6) Create Your Own Logic Puzzle (10–15 minutes)

Students choose an organelle and write 4–6 clues in the same way they just completed, then test on a partner.

7) Extension

Student directions: Write a description of each organelle’s function on the Target Organelles List.

Target Organelles List

- ☐ Nucleus
- ☐ Cell Membrane
- ☐ Cytoplasm
- ☐ Mitochondria
- ☐ Ribosomes
- ☐ Rough ER
- ☐ Smooth ER
- ☐ Golgi Apparatus
- ☐ Lysosome
- ☐ Large Central Vacuole
- ☐ Chloroplasts

Clues

Clue 1: This organelle is found in both plant and animal cells.

Clue 2: This organelle is NOT responsible for releasing energy from food.

Clue 3: This organelle is NOT responsible for packaging and shipping materials.

Clue 4: This organelle is the control center of the cell and contains DNA.

Clue 5: This organelle is surrounded by a membrane and is usually the largest organelle in an animal cell.

Final Answer: _____

Answer Key

Clue 1 (“found in both plant and animal cells”)

→ Cross out **Chloroplasts** and **Large Central Vacuole** (plant-only).

Clue 2 (“NOT responsible for releasing energy from food”)

→ Cross out **Mitochondria**.

Clue 3 (“NOT responsible for packaging and shipping materials”)

→ Cross out **Golgi Apparatus**.

Clue 4 (“control center...contains DNA”)

→ Points directly to the **Nucleus** (this is the key identifier).

Clue 5 (“surrounded by a membrane...usually the largest organelle in an animal cell”)

→ Confirms **Nucleus**.