

Edible Cell Project

Grade VII Science · International Class Program

Name: _____

Group: _____

1. Project Overview

In this project you will design, build and present a **3D model of a cell** using edible materials. You should make an **animal cell** and a **plant cell**. Your model must show the main parts of the cell clearly, and your video must explain what each part does and how animal and plant cells are different.

Learning objectives. By the end of this project, I can :

- identify the main parts of animal and plant cells (cell membrane, cytoplasm, nucleus, mitochondria, cell wall, chloroplast, vacuole);
- describe the function of each part;
- compare and contrast animal and plant cells;
- explain how a model represents a real object and where the model has limitations.

What you will hand in:

1. Completed worksheet (Parts A, B and D)
2. Your edible cell model
3. A 3–5 minute video presentation (Part C)

2. Suggested Timeline

Stage	Task
Week 1	Part A: Planning (research, materials, sketch) Part B: Build the model and take process photos
Week 2	Part C: Record and edit the video; complete Part D reflection Submit worksheet, video and present the model

Part A: Planning

A1. Research: cell parts and food analogies

Use your textbook to complete the table. Choose a food item to represent each part and explain **why** it is a good match (colour, shape, texture or function).

Cell part	Function (in your own words)	Found in animal cell?	Found in plant cell?	Food I will use	Why this food?
Cell membrane					
Cytoplasm					
Nucleus					

Cell part	Function (in your own words)	Found in animal cell?	Found in plant cell?	Food I will use	Why this food?
Mitochondria					
Vacuole					
Cell wall					
Chloroplast					

A3. Food ideas (examples only, be creative!)

Cell part	Possible foods
Cytoplasm	Clear jelly or agar-agar, gelatin, pudding, cake base
Cell membrane	Fruit leather, thin fondant, rice paper, thin layer of icing
Cell wall	Wafer or graham crackers, thick fondant, pretzel sticks, chocolate bars
Nucleus	Round candy, grape, chocolate ball, gummy
Mitochondria	Jelly beans, bean-shaped candy, raisins
Chloroplast	Green sprinkles, green gummies, green candy, mint candy
Vacuole	Large round gummy, big jelly piece, nata de coco, young coconut flesh

A4. Materials

Material	Quantity	Used for

Safety and hygiene checklist

- ☐ I washed my hands and cleaned my workspace.
- ☐ I used only food-safe containers, plates and utensils.
- ☐ I asked a parent or adult for help when using heat or sharp tools.
- ☐ I will not share my model for eating if it contains an ingredient someone is allergic to.

A5. Design sketch

Draw a labelled sketch of your model (top view and side view). Label every part with the **cell part name** and the **food** you will use.

(Draw here or attach a photo of your sketch.)

Part B: Building the Model

B1. Step-by-step procedure

1. **Prepare the base.** Choose a container, plate or cake to hold your cell. Make sure it matches the shape you chose in A1.
2. **Make the cytoplasm.** Prepare the filling and let it set if needed (this may take several hours, so start early).
3. **Add the outer layer.** Build the cell membrane (animal cell) or the cell wall and cell membrane (plant cell) around the cytoplasm.
4. **Place the nucleus.** Put it in a suitable position inside the cytoplasm.
5. **Add the other organelles.** Place the mitochondria. For a plant cell, also add chloroplasts and the large central vacuole.
6. **Label every part.** Make small flags with toothpicks and paper, or write on edible paper. Use the correct scientific names.
7. **Photograph the finished model** from at least 3 angles.

B2. Build log

Date	What I did	Problems / changes	Photo taken ✓

B3. Model check before presenting

- ☐ My model is **3D**.
- ☐ All required parts are included and in sensible positions.
- ☐ Each part is labelled with the correct name.
- ☐ Parts that are only in plant cells (or only in animal cells) are correct for my cell type.
- ☐ Everything used is edible and safe.

Part C: Final Product, Video Presentation

C1. Video requirements

- Length: **3–5 minutes**
- Language: English
- Everyone in the group speaks at least once
- Show your model clearly (close-ups of each organelle)
- Include a short clip or photos from your building process
- Speak clearly; use slides, captions or labels if you wish

C2. Script planner

Time	Section	What I will say / show	Who speaks
0:00–0:30	Introduction: who we are, which cell we made, why		
0:30–2:30	Tour of the model: name each part, its function, and the food used		
2:30–3:30	Compare: three differences and two similarities between animal and plant cells		
3:30–4:15	Evaluate the model: what the food model does well and where it is not accurate		
4:15–5:00	Conclusion: what we learned		

C3. Video checklist

- ☐ Introduction with cell type
- ☐ All parts named, with function and food analogy
- ☐ Animal vs plant cell comparison
- ☐ Limitations of the model
- ☐ Clear sound and picture
- ☐ Within the time limit

Part D: Compare and Reflect

D1. Animal cell vs plant cell

Complete the table.

Cell Organel	Animal cell	Plant cell
Cell wall		
Cell membrane		
Chloroplasts		
Vacuole (size and number)		
Shape		

Cell Organel	Animal cell	Plant cell
Nucleus		
Mitochondria		
Energy source / how it gets food		

D2. Reflection questions

1. Which part of your model was the best representation of a real cell part? Explain why.

Answer :

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2. Which food was a poor match, and what could you use instead?

Answer :

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3. In what ways is your edible model **different** from a real cell? (Think about size, materials, the working parts, and what the cell actually does.)

Answer :

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4. What was the most difficult part of the project, and how did you solve it?

Answer :

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5. What would you improve if you made the model again?

Answer :

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