



Virtual STEAM

Science and Art

Plant Cell Building Innovation

Goal: I can create a model of a plant cell to help describe the parts and functions.

Science Indicator: SC.6.6.2.B Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.

Art Indicator: FA 5.2.1 Students will use the creative process to make works of art exploring subjects and themes with a variety of materials

Materials:

- 1 - Gelatin Pack
- 5 - Green Oval Beads
- 1 - Clear Cup
- 1 - Colored Marble
- 3 - Coffee Bean
- Clear Glass Gem
- Not included: Water

Instructions:

1. Watch YouTube Video for background knowledge: "The Plant Cell | 13 Key Structures"
<https://www.youtube.com/watch?v=TvQNRyWIKws>



Eukaryotic cell

Some Plant Cell Organelles:

- a. Cell wall
- b. Cell membrane
- c. Mitochondria
- d. Chloroplasts
- e. Nucleus
- f. Cytoplasm
- g. Central Vacuole

2. Pour the gelatin in the cup.
3. Fill the cup to the halfway mark with hot water from the sink. Stir until dissolved.



Book Extension:

[Christina Examines Plant Cells and Animal Cells](#)

[By Carole Marsh](#)





4. Place the cup in a refrigerator for 5-15 minutes until it starts to become thicker. (higher viscosity)
5. Set a timer at 5 minute intervals to check to see if it is beginning to thicken.
6. As it starts to thicken you will want to work quickly.
7. The gelatin will represent cytoplasm in the plant cell.
8. Place the clear oval gem in the cytoplasm.
9. This is the central vacuole of the cell.
10. Add the green oval beads and disperse (mix) them in the cytoplasm.
11. The green beads represent the chloroplast for your cell.
12. Add the blue marble.
13. The marble will represent the nucleus of the cell.
14. Mix the coffee beans in the cytoplasm. They will represent the mitochondria of the cell.
15. The outside of the transparent cup represents the cell wall.
16. The inside of the cup represents the cell membrane.
17. Reflection: Describe how the parts of a cell function together as a system.
18. Draw and label the parts of a plant cell in your cup on your recording sheet.

Extension:

- How do animal and plant cells differ? How are they similar?

Video Extensions:

- “Travel Deep Inside A Leaf” - <https://www.youtube.com/watch?v=pwymX2LxnQs>



- “Biology With NAMOO: Plant Cell Structure” - <https://www.youtube.com/watch?v=IWU6mq5405U>



Social Emotional Connection:

- **Teamwork and Cooperation** - When people work together to achieve a common goal or benefit. Today you learned the parts of a plant cell and how each part works together to help the plant grow and thrive!

Vocabulary:

- **Viscosity:** measurement of a fluid's resistance to flow
- **Plant Cell:** is a eukaryotic cell, Both plant and animal cells contain a nucleus along with similar organelles. One of the distinctive aspects of a plant cell is the presence of a cell wall outside the cell membrane.





PRAIRIE
STEM

PLANT CELL STRUCTURE

REPLICATE YOUR MODEL AND LABEL THE PARTS

