

ROKET TEK Integrated Lesson: Cell and Organelles

Subject: Science

Grade: 8 (Junior High)

Number of Days: 1

Teacher: Adelaida M. Lolinco

School: Dishchii Bikoh Community School

Common Core/Next Generation Learning Standards:

MS-LS1 1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

MS-LS1 2. Develop and use a model to describe the function of a cell as a whole and ways parts of cell contribute to the function.

Learning Goals: 1. We will investigate and understand that living things are made of cells.

2. We will identify the parts and functions of cells.

Language Objectives: Students will be able to (SWAT):

1. draw and label the parts of the cell.
2. match the functions of the organelles to the parts of the house.
3. connect the concepts learned to Apache culture.

Vocabulary Words: cell, organelles, cell membrane, cytoplasm, nucleus, cell wall, vacuole, mitochondria, golgi bodies, cell wall, endoplasmic reticulum, chloroplast, ribosome, nucleus

Teacher Input and Activities:

1. Discussion Method (Teacher is motivating)

Motivation : Cell Puzzle

The students will connect the puzzle and will find out that what they connected is a cell which will be the topic for discussion.

2. Information/Sharing (Teacher is presenting)

Presentation: The teacher will show the parts of the cell and the diagram of the house. The students will be asked to match the parts of the cell which corresponds to the parts of the house. (This will help the students to connect the new lesson to background knowledge. Matching the parts of the cell to each corresponding parts of the house will improve their understanding and comprehension).

3. Coaching/Encouraging (Teacher is coaching)

Students will form a small group according to their learning styles.

Visual and verbal learners: Students will draw the cell and organelles. They will use different colors to distinguish one from another. From the presentation given, the students will identify the functions of the cell parts.

Active and reflective learners: Students will act out or make a skit forming a cell. Each part will act out their function.

Sensing and intuitive learners: Students will make model of the cell. They will figure out how each part is connected to each other.

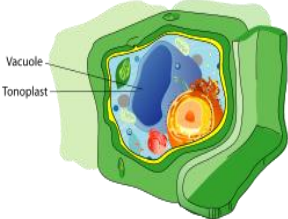
4. Assessment:

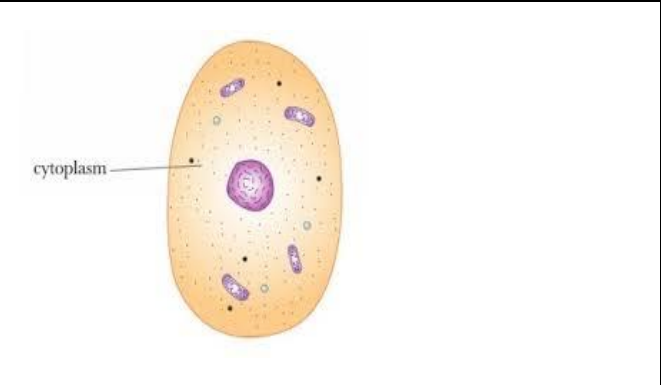
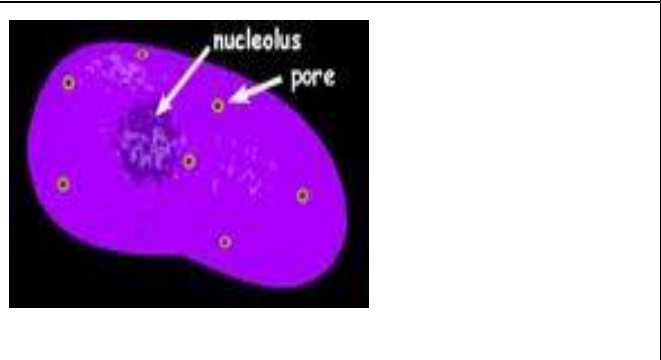
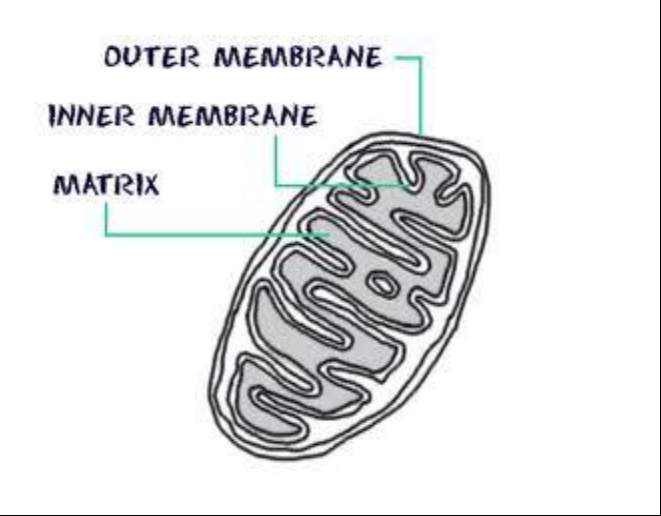
Type of assessment: Performance tasks using rubrics and self-and peer-evaluation)

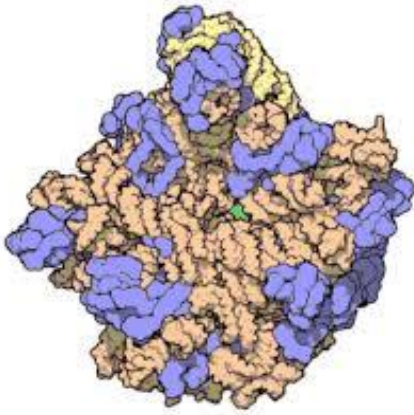
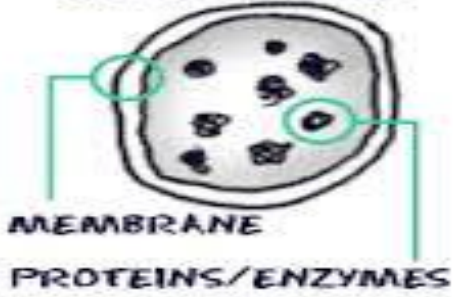
Each group will present their work to the class. They will discuss the importance of each cell parts and connect it to the real life situation and their culture. (TEK infusion: connection, cooperation, respect, creativity)



Type of assessment: Teacher-made-test

Direction: Complete the chart below. Draw the parts or fill out the missing column.

Name	How does it look like?	What does it do?
chloroplast		responsible for photosynthesis
vacuoles	 A 3D cutaway diagram of a plant cell. The cell is roughly rectangular with rounded corners and a thick green outer wall. Inside, there is a large, clear, blue central vacuole. A thin, light blue layer (the tonoplast) surrounds the vacuole. Other organelles like a nucleus and chloroplasts are visible in the cytoplasm. Labels 'Vacuole' and 'Tonoplast' point to their respective parts.	

	 <p>A diagram of an animal cell. The cytoplasm is the gel-like fluid filling the cell, containing various organelles. A label 'cytoplasm' points to the fluid.</p>	gel-like fluid that hold the organelles
nucleus	 <p>A diagram of a nucleus. The nucleolus is a dense region inside the nucleus. Pores are small openings in the nuclear envelope. Labels 'nucleolus' and 'pore' point to these structures.</p>	
cell membrane		protects the cell and allows nutrients to come into the cell
	 <p>A diagram of a mitochondrion. The outer membrane is the smooth outer layer. The inner membrane is the highly folded inner layer. The matrix is the fluid-filled space inside the inner membrane. Labels 'OUTER MEMBRANE', 'INNER MEMBRANE', and 'MATRIX' point to these structures.</p>	produces energy

<p>ribosomes</p>		
	<p>LYSOSOME STRUCTURE</p>  <p>MEMBRANE PROTEINS/ENZYMES</p>	<p>break down proteins</p>
<p>cell wall</p>		<p>provides shape for the plant cells</p>

<p>endoplasmic reticulum</p>		
<p>golgi bodies</p>		

5. Resources/Materials needed:

- a. http://www.google.com.ph/imgres?imgurl=http://upload.wikimedia.org/wikipedia/commons/1/11/Chloroplast-new.jpg&imgrefurl=http://commons.wikimedia.org/wiki/File:Chloroplast-new.jpg&h=501&w=748&sz=54&tbnid=GnXRm_V-cx1MjM:&tbnh=82&tbnw=122&prev=/search%3Fq%3Dchloroplast%26tm%3Disch%26tbo%3Du&zoom=1&q=chloroplast&usg=__H-aK0qbnSBX0CP4xDitGEq18uak=&docid=uQHf8xwrVKcvfM&sa=X&ei=vBDgUZz2KcSSiAfcioCoDg&sqj=2&ved=0CDUQ9QEwAQ&dur=311

b. Wikipedia

c. materials needed

- 1. visual and verbal learners
 - White paper (big)
 - Colored papers and pencils/crayons

- Tape
- Scissors
- 2. Sensing and intuitive learners
 - Styrofoam
 - Colored modeling clay/papers
 - Markers of different colors
 - Small beads
 - String
 - scissors
 - glue

6. Discuss science-related careers tied to the lesson (e.g. biologists, engineers, etc.)

7. Reflection: (learning for the students and teaching for the teacher)

- a. What did you **learn** today? Is there any part of the lesson related to your culture? Can you give examples related to your culture? **(If the students cannot relate the lessons learned to their culture, the teacher can show a video which will guide the students how lessons can be applied to their culture. Another option is to invite an elderly who can elaborate the connection of the lesson to their lives).**
- b. What **learning style** will help you learn the lesson well?
- c. What difficulty did you encounter?
- d. How will you improve your **learning**?

Targeted Bloom's Taxonomy: remembering, understanding, applying, analyzing, evaluating, and creating

Note: If majority of the students **did not master** the expected concepts, **remedial teaching** will follow the next day and **enrichment activities** related to the same topic will be for the rest of the students who **mastered** the concepts.