7

DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for Science

Quarter 2
Lesson
3

Lesson Exemplar for Science Grade 7
Quarter 2: Lesson 3 (Week 3)
S.Y. 2024-2025

Development Team

Writer:
- Kristine N. Busmion (Siliman University)

Validator:
- Genelita S. Garcia (Philippine Normal University)

Management Team

Philippine Normal University
Research Institute for Teacher Quality
SiMMER National Research Centre

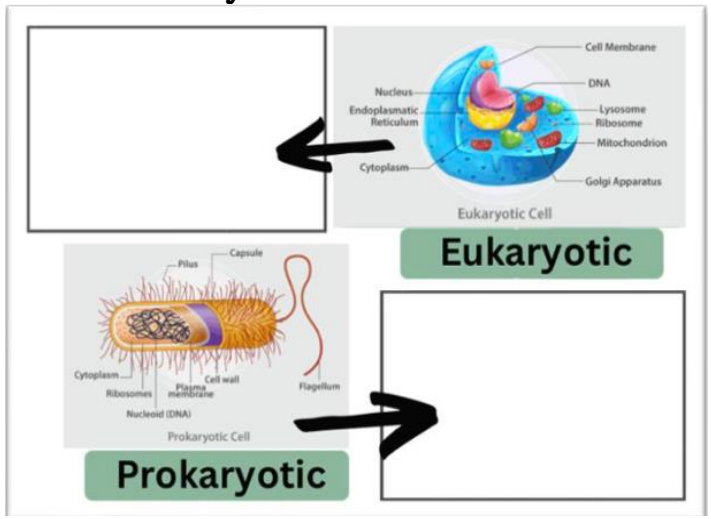
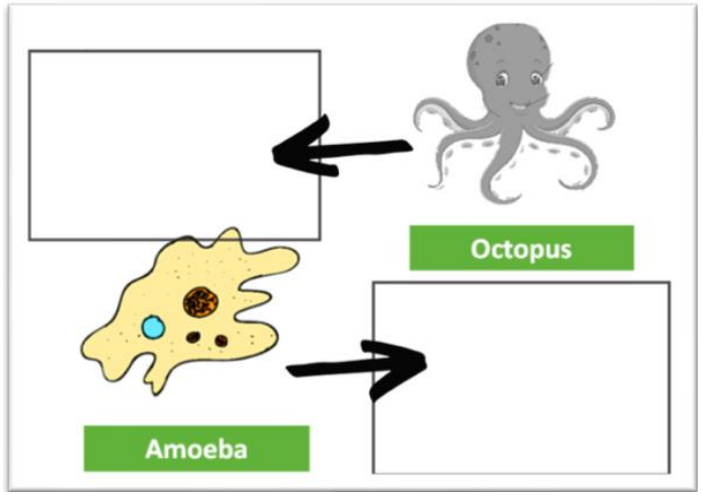
SCIENCE (BIOLOGY) / QUARTER 2 / GRADE 7

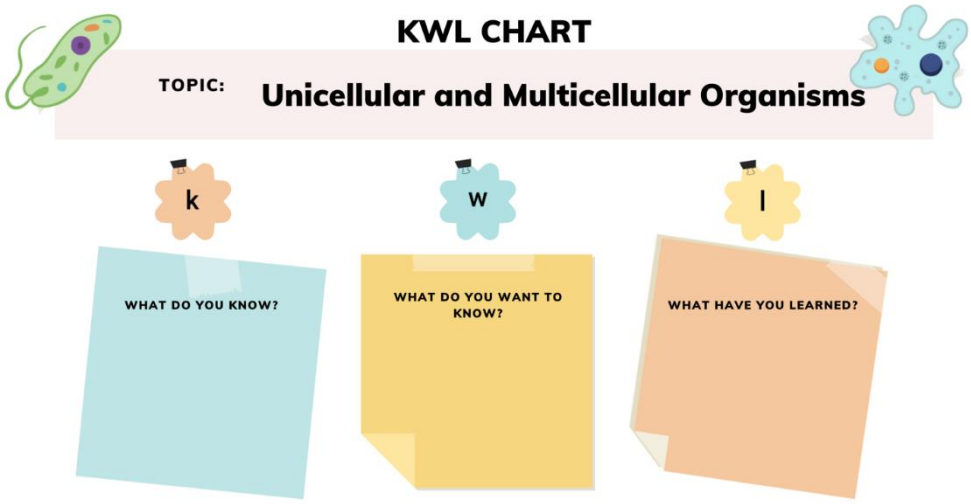
I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
1. Content Standards	1. Familiarity and proper use of a compound microscope are essential to observe cells. 2. The organelles of plant and animal cells can be identified using a compound microscope. 3. Cells are the basic unit of life and mitosis, and meiosis are the basic forms of cell division.
2. Performance Standards	*By the end of the Quarter*, learners will be able to create a visual representation, such as poster, model, or e-poster, explaining the trophic level in a chosen ecosystem.
3. Learning Competencies and Objectives	**1. Identify the parts and functions, and demonstrate proper handling and storing of a compound microscope** *Lesson Objective 1: Identify the parts of a compound microscope and the function of each part.* *Lesson Objective 2: Demonstrate the proper handling and storing of a compound microscope* **2. Use proper techniques in observing and identifying the parts of a cell with a microscope such as the cell membrane, nucleus, cytoplasm, mitochondria, chloroplasts, and ribosomes** *Lesson Objective 1: Use proper techniques when observing the parts of a cell under a microscope.* *Lesson Objective 2: Identify the parts of a cell, such as the cell membrane, nucleus, and cytoplasm, with a microscope* **3. Differentiate plant and animal cells based on their organelles** *Lesson Objective 1: Identify the parts of a plant cell and the function of each.* *Lesson Objective 2: Identify the parts of an animal cell and the function of each.* *Lesson Objective 3: Compare and contrast plant and animal cells based on their organelles.* ***4. Recognize that some organisms consist of a single cell (unicellular) like in bacteria and some consist of many cells (multicellular) like in a human*** *Lesson Objective 1: Describe unicellular and multicellular organisms* *Lesson Objective 2: Identify examples of unicellular and multicellular organisms*
4. Content	1. Science equipment: The Compound Microscope ● Parts and Functions ● Using of Microscope

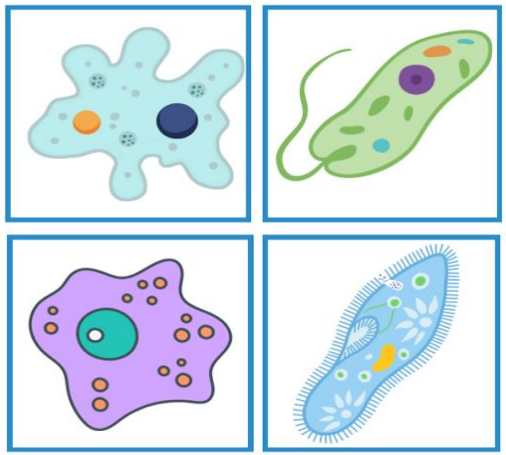
	2. Plant and animal cells ● Parts and Functions ● Similarities and Differences
5. Integration	• Utilization of a microscope in investigating microorganism and their roles in the ecosystem • Distribution of plant and animal cells relating to global diversity patterns • The intricate pattern of plant and animal cells for inspiration for artistic pieces

II. LEARNING RESOURCES

- Amazon (2024). Wonderattheworld.com. https://wonderattheworld.com/wp-content/uploads/2023/12/Amazon-lap-book.jpg
- Ananya Mandal. (2019, June 5). What is Staphylococcus Aureus? News-Medical.net. https://www.news-medical.net/health/What-is Staphylococcus-Aureus.aspx
- Batul, A. (2013, January 17). Rhizopus bread mold under microscope. World under Microscope. https://worldundermicroscope.wordpress.com/2013/01/17/rhizopus-bread-mold-under-microscope/
- FuseSchool - Global Education. (2018). Unicellular vs Multicellular | Cells | Biology | FuseSchool. https://www.youtube.com/watch?v=1hrkwJ_HuR0&ab_channel=FuseSchool-GlobalEducation
- FuseSchool - Global Education. (2018). Unicellular vs Multicellular | Cells | Biology | FuseSchool. In YouTube. https://www.youtube.com/watch?v=1hrkwJ_HuR0
- Lumen Learning. (2019). Prokaryotes and Eukaryotes | Biology for Majors I. Lumenlearning.com. https://courses.lumenlearning.com/suny-wmopen-biology1/chapter/prokaryotes-and-eukaryotes/
- Molnar, C., & Gair, J. (2019). 1.1 Themes and Concepts of Biology – Concepts of Biology-1st Canadian Edition. Opentextbc.ca. https://opentextbc.ca/biology/chapter/1-1-themes-and-concepts-of-biology/
- National Geographic Society. (2022b, May 20). Unicellular vs. Multicellular | National Geographic Society. Education.nationalgeographic.org. https://education.nationalgeographic.org/resource/unicellular-vs-multicellular/
- National Geographic. (2020, March 13). Tardigrade, facts and photos. National Geographic. https://www.nationalgeographic.com/animals/invertebrates/facts/tardigrades-water-bears
- Southern Biological. (n.d.). Introduction to Euglena. Www.southernbiological.com. https://www.southernbiological.com/introduction to-euglena/
- TED-Ed. (2016). What is the biggest single-celled organism? - Murry Gans. In YouTube. https://www.youtube.com/watch?v=FK9xHry877U
- Vedantu. (n.d.). Give examples of unicellular and multicellular organisms. Www.vedantu.com. https://www.vedantu.com/question answer/give-examples-of-unicellular-and-multicellular-class-11-biology-cbse-5f8a7c6e2331d1505cd0f44d

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**Short Review** **Cell Vocabulary:** Students will describe unicellular and multicellular organisms.   	The lesson will start with a review of eukaryotic and prokaryotic cell type. They will also describe examples of multicellular and unicellular organisms. At this point, the students already have an idea of what the lesson is all about.

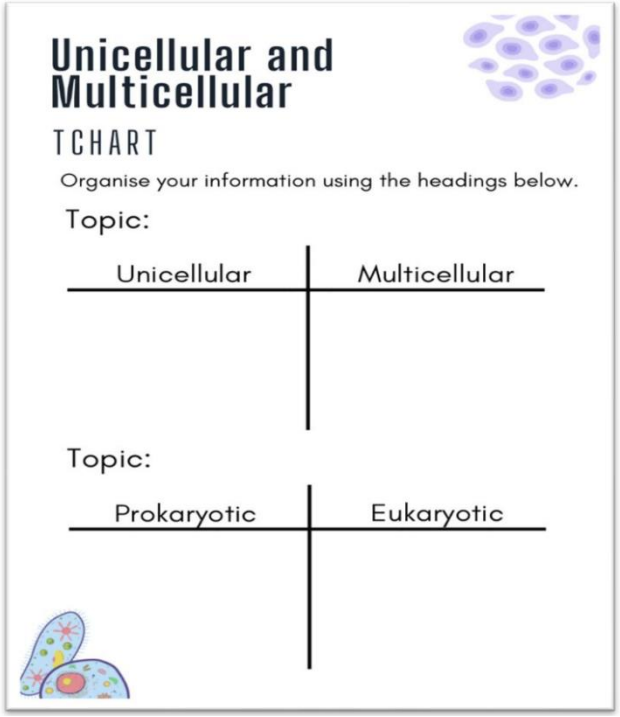
	KWL Chart: Using the graphic organizer, the students will recall their prior knowledge about the given terms. The learners will only answer K and W at this point.  	Using the graphic organizer, the students will write what they know, and what to know about unicellular and multicellular organisms. This KWL Chart will be revisited at the end of the lesson to answer the column on what they have learned about the topic.
B. Establishing Lesson Purpose	**Lesson Purpose** **Think-Pair-Share:** The student will summarize the importance of multicellularity. They will work in pairs to understand the video material and answer the questions (What is the largest unicellular organism? https://www.youtube.com/watch?v=FK9xHry877U)	

	 Throughout the history of life on Earth, organisms have evolved from simple single-celled forms to complex multicellular structures. This evolutionary transition has allowed for a greater diversity of life forms and the development of specialized functions within organisms. Considering this remarkable transformation, it's important to explore the advantages that multicellularity offers. **Process Questions:** 1. What is the largest unicellular organism? 2. What advantages do multicellular organisms have over unicellular organisms? **Unlocking Content Area Vocabulary** **Table Completion:** Complete table by providing the descriptions of the given terms. 1. Multicellular 2. Unicellular 3. Prokaryote 4. Eukaryote	
C. Developing and Deepening Understanding	**1. Explicitation** **Cell Type Foldable:** Create a foldable that highlights the description, definition, and examples of unicellular and multicellular organisms. (Unicellular vs Multicellular https://education.nationalgeographic.org/resource/unicellular-vs-multicellular/)	The lesson will start with a Think-Pair-Share activity that recognizes the existence of unicellular and multicellular organisms. Based on the reading material, they will create a foldable that describes the two cell types.

2. Worked Example

Unicellular and Multicellular T-Chart: The students will create a T-Chart about unicellular vs multicellular organisms and prokaryotic vs eukaryotic cells based on:

- Number of Cells
- Examples
- Size
- Complexity
- How they obtain nutrients
- How they reproduce
- How they respond to environment



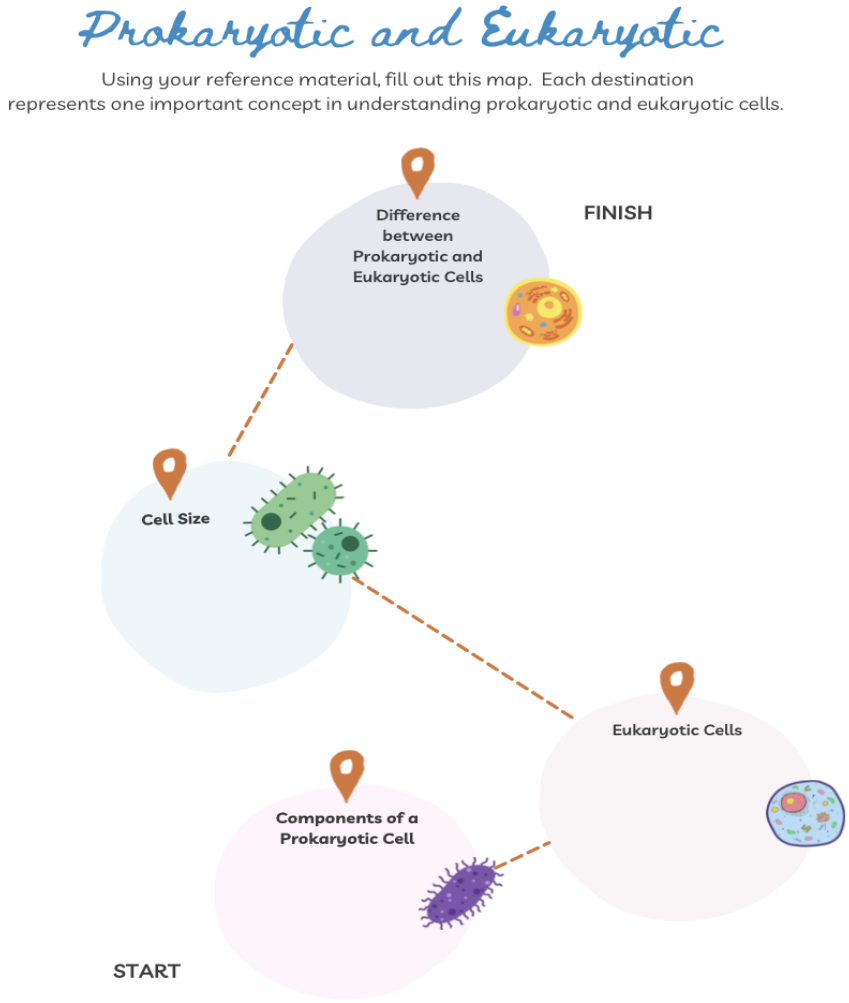
After describing the two cell types, the students will differentiate unicellular and multicellular organisms. Also, they will differentiate prokaryotic and eukaryotic organisms.

Answer Key:

Unicellular Organisms	**Multicellular Organisms**
One Cell	Many Cells
Bacteria, Amoeba, Yeast	Plants, Animals, Fungi
Typically microscopic	May be microscopic or macroscopic
Simple	Complex
Direct absorption from environment	Specialized tissues and organs
Usually asexual reproduction	Asexual or sexual reproduction

3. Lesson Activity

Interactive Site: Students will read the material and complete the graphic organizer. Also, the students will answer the questions in the interactive site that is focused on the prokaryotic and eukaryotic cells.



To practice further, the students will now answer the questions in the interactive website entitled Prokaryotes and

Eukaryotes Reference:

https://courses.lumenlearning.com/suny-wmopen-biology1/chapter/prokaryotic-transcription-and-translation/

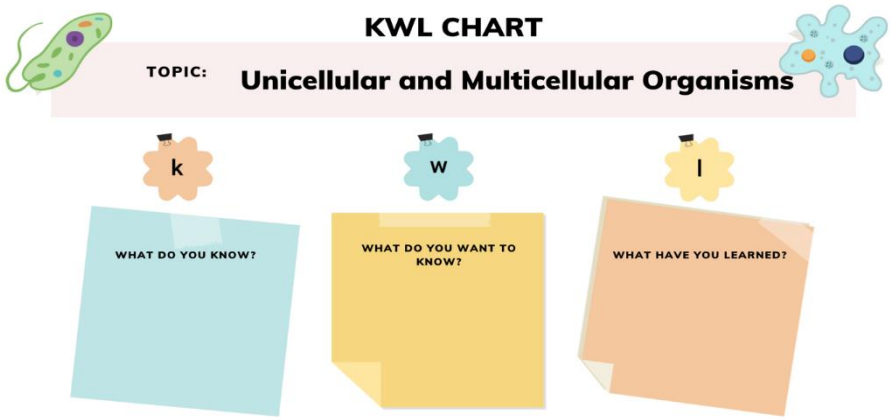
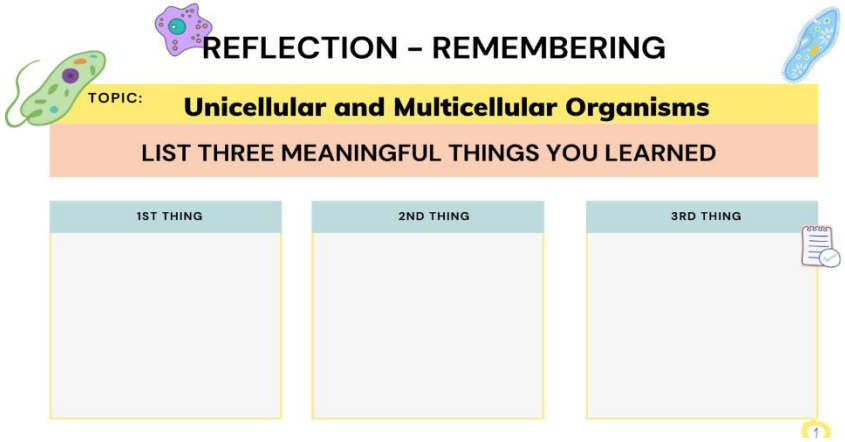
Which characteristic is unique to prokaryotic cells? (contains a nucleoid)

Eukaryotic and prokaryotic cells share what component? (DNA)

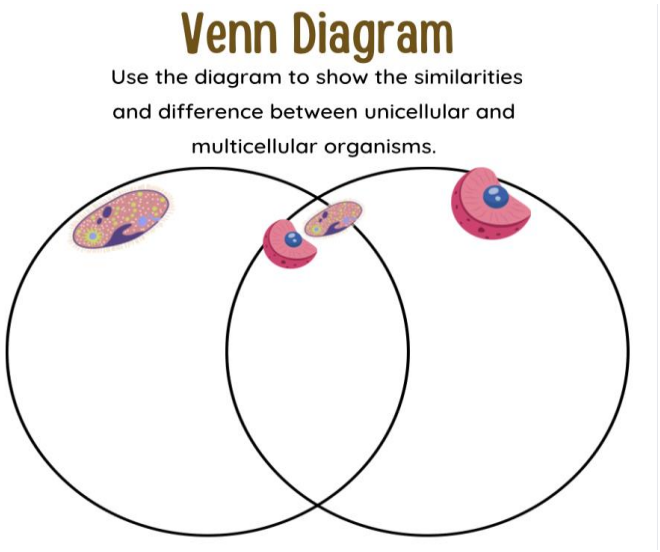
Which of the following is not a uniform feature of cellular life? (nucleus)

Dogs and mushrooms are examples of what type of organism? (eukaryotic organisms)

Overall cell size is restricted by the need to _____. (transport materials inside the cell)

D. Making Generalizations	**Learners' Takeaways** **KWL Chart**: Using the graphic organizer, the students will answer the L column or what they have learned about the given term.  **Reflection on Learning** **Reflection - Remember:** Using the graphic organizer, reflect on your learning by creating Reflection – Remembering by answering the questions.  	Towards the end of the lesson, the students will revisit the KWL Chart to map the conceptual change. It allows the learners to identify their takeaways of the lesson. The students, at this point, will reflect on their learning by answering the Reflection – Remembering Activity Sheet. This will allow them to map what are the meaningful things they have learned, the questions they still have, and anything they did not understand.

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		NOTES TO TEACHERS
A. Evaluating Learning	**1. Formative Assessment** A. Multiple Choice. Write the letter that corresponds to the correct answer. _____ 1. Which of the following is a characteristic of multicellular organisms? a) Composed of a single cell b) Lack specialized cells c) Can only reproduce asexually d) Made up of many specialized cells _____ 2. What is a defining feature of unicellular organisms? a) They have complex structures and systems b) They reproduce sexually c) They consist of a single cell d) They are unable to adapt to different environments _____ 3. What enables multicellular organisms to have longer lifespans than most unicellular organisms? a) Ability to hibernate b) Specialized cells c) Ability to reproduce sexually d) Capacity to replace or repair damaged cells _____ 4. Why do multicellular organisms have increased complexity compared to unicellular organisms? a) They have more DNA b) They lack cell specialization c) They have a larger surface area-to-volume ratio d) They consist of many specialized cells working together _____ 5. What is the primary advantage of unicellular organisms? a) Ability to perform specialized functions b) Adaptability to different environments c) Larger size d) Ability to reproduce asexually	Teachers may encourage learners to have a quiz notebook to monitor learners' academic progress. The quiz notebook may also serve as homework notebook. **Answer Key:** 1. d) Made up of many specialized cells 2. c) They consist of a single cell 3. d) Capacity to replace or repair damaged cells 4. d) They consist of many specialized cells working together 5. d) Ability to reproduce asexually

	B. **Venn Diagram:** Create a Venn Diagram identifying the similarities and differences of unicellular and multicellular organisms.  **Homework (Optional)** Mini-Research Work. Research and write a short report (1-2 pages) on one multicellular organism and one unicellular organism. Include information such as their habitat, structure, functions, and significance in their respective ecosystems. Reminder: Use reliable sources and do proper citation.			
B. Teacher's Remarks	*Note observations on any of the following areas:*	**Effective Practices**	**Problems Encountered**	*Teachers are encouraged to record relevant observations or any critical teaching events that influence on the attainment of the lesson objectives. Use or modify*
	strategies explored			
	materials used			

	learner engagement/ interaction			*the provided template in recording the notable instructional areas or concerns.* *In addition, notes here can also be on tasks that will be continued the next day or additional activities needed.*
	Others			
C. Teacher's Reflection	*Reflection guide or prompt can be on:* ▪ *<u>principles behind the teaching</u>* *What principles and beliefs informed my lesson?* *Why did I teach the lesson the way I did?* ▪ *<u>students</u>* *What roles did my students play in my lesson?* *What did my students learn? How did they learn?* ▪ *<u>ways forward</u>* *What could I have done differently?* *What can I explore in the next lesson?*			*Entries in this section are the teacher's reflections about the implementation of the whole lesson, which will serve as inputs for the LAC sessions. Use or modify the provided guide questions in eliciting teacher's insights.*