

Project 4: Cell Rap

Animal and Plant Cells • Relationships/ Parts of a Whole/Comparison



















Project Essential Questions

- What are the functions of the various animal and plant cell organelles?
- How can music be used to create connections between the two types of cells?

PROJECT DESCRIPTION

This project integrates music and visual arts into students' study of both plant and animal cells. In this project students will compare and contrast the organelles in both an animal cell and plant cell. Students will create a rap that shows their understanding of how the individual organelles function in both types of cell.

LEARNING TARGETS

"I Can..."

- Identify the various organelles in an animal cell and plant cell
- Compare and contrast animal and plant cells
- **Explain the function of the various** organelles
- Label the various organelles in cells
- Create a musical rap that demonstrates my understanding of the science concept

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Units provide differentiated ideas and activities aligned to a sampling of standards. The units do not necessarily imply mastery of standards, but are intended to inspire and equip educators.

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DURATION: 3-4 days

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ESSENTIAL QUESTIONS

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STANDARDS

Curriculum Standards	Arts Standards		
S5P1. Students will verify that an object is the sum of its parts S5L3. Students will diagram and label parts of various cells (plant, animal, single-celled, multi-celled)	M5GM.1. Singing, alone and with others, a varied repertoire of music M5GM.4. Improvising melodies, variations, and accompaniments M5GM.5. Composing and arranging music within specified guidelines		
			M5GM.8. Understanding relationships between music, the other arts, and disciplines outside the arts

KEY VOCABULARY

Content Vocabulary	Arts Vocabulary
 Animal cell Cell membrane Chloroplasts Cytoplasm Nucleus Plant cell Structure 	 Articulation Beat Crescendo Decrescendo Form Legato Melody



TECHNOLOGY INTEGRATION

The various apps can be used when developing student raps:

- "Metronome" App can be used to help students find a steady beat for the rap
- "Rapchat" App can record and share freestyle raps over beats
- "Music Maker Jam" App can be used to create, sing and record songs

ASSESSMENTS

Formative		Summative	
Ob	II Rap Writing/Group Work: Teacher observation of students working in laborative groups on rap that compares		Cell Rap Rubric: Completion and performance of musical rap
and contrasts animal and plant cells	ti	Nord Art: Students create word art that takes he science vocabulary and, through design, llustrates the word meaning	
		• V	Written Reflection (see Downloads)

MATERIALS

Construction paper/poster board, coloring/art materials, computer (if needed for differentiation)

Activating Strategy (5-10 minutes)

- Teacher will lead students in a 4 corner review game to review the organelles of a cell.
- Teacher will label 3 corners of the room with:

*NUCLEUS *CYTOPLASM *CELL MEMBRANE *CELL WALL

• Teacher will then call out the function of the various organelles and the students must move to the appropriate corner of the room to match the function and organelle.

Main Activity

Process:

Part 1:

- Place students in small groups.
- Assign half of the groups to create a 10-line rap about the function of each organelle (cytoplasm, nucleus, and cell membrane) in an animal cell.
- Assign the other half of the groups to create a rap for a plant cell.
- Option: Allow students time to work with the various apps listed above and try recording a version of their rap with background beats incorporated.
- Small groups share their Cell Raps.



Part 2:

- The teacher will ask the students to compare and contrast the two cells based on what we learned from our raps. (Why does the plant cell have organelles that the animal cell does not include?)
- Together as a class, begin a 5-line rap together that compares and contrasts the 2 types of cells.
- Students get back in groups and independently finish the last 5 lines of the compare/contrast rap.
- Groups share their different endings.

Part 3:

- Students work collaboratively in groups to create Word Art for all of the organelles in the cell they were exploring.
- The students must use the properties of each organelle and the function to best illustrate the
 vocabulary word. (Example: Cytoplasm might be "oozing" and use thick shaped letters and have
 pieces inside—representative of it's function and physical properties).

REFLECTION

Reflective Strategies

Written Reflection Questions (see Downloads)

Reflection Questions:

- 1. How would I rate myself on the understanding of the differences between plant and animal cells and their organelles?
- 2. How does music and writing a song help me understand the concept of the differences between plant and animal cells?

DIFFERENTIATION

Below Grade Level:

• These groups of students can work with the entire class to create the 10-line rap song, and focus more on their performance and mastery of the content. Consider splitting the class into 2 groups and having a Rap Battle.

Above Grade Level:

 These groups of students can create the entire rap by themselves, instead of working with the entire class.

EL Students:

 Instead of working in homogeneous groups to create the last 5 lines of the rap, the teacher would pair an EL student with a higher fluency/language student to work together in a one-on-one collaborative pair.



APPENDIX

- Written Reflection Sheet Project 4
- Cell Rap Rubric

CREDITS

U.S. Department of Education

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