Lesson Topic: Parts of a Cell - Plants vs. Animals

Objective:
Students will be able to:

1. Compare and contrast plant and animal cells

Time Required: 120 minutes

Materials Needed:

- Materials from classroom to create cell model - examples include poster board, modeling clay, playdough, pipe cleaners, beads, buttons, toothpicks, string/ yarn, shower gel, styrofoam, popsicle sticks
- Teacher computer with internet access
- Projector/Smartboard
- 1 computer/laptop/iPad per student with internet access
- Plants vs. Animals Venn Diagram (attached)
- Cell Model Planning Sheet (attached)

Teacher Preparation:

- Assign a Legends of Learning Instructional Quick Play playlist for the day(s) you will be teaching the lesson.
    - Instructional - Middle School - Parts of a Cell: Plants vs. Animals
- Assign a Legends of Learning Content Review Quick Play playlist for the day(s) you will be teaching the lesson.
    - Content Review - Middle School - Parts of a Cell: Plants vs. Animals
- Make double sided copies of Plants vs. Animals Venn Diagram and Cell Model Planning Sheet (1 per student)

Engage (10 minutes):

1. Show this video on Youtube that overviews the similarities and differences between plant and animal cells.
    a. Plant Cell vs Animal Cell
    b. Before the video, set a purpose for students. Have them make note of organelles and functions that are unique to animal cells.
2. After the video, lead class discussion on similarities and differences.

Explore (20 minutes):

1. Have your students sign in to Legends of Learning. Instruct students to complete the Instructional playlist.
2. As students complete the assigned game, students should fill out the Plants vs. Animals Venn Diagram handout. Students can also fill in any information gained from Youtube video/class discussion.
3. Assist students as needed during game play, pause playlist if you need to address content or questions to the entire class.

Explain (15 minutes):

1. Review answers to Plants vs. Animals Venn Diagram by drawing Venn Diagram on board or using Smartboard. Stimulate discussion on similarities/differences and reason behind differences.
2. Explain that students will use knowledge of both types of cells to create a model of plant and animal cells.

Elaborate (60 minutes):

1. Break students into groups or partners and briefly go over the materials available for their model. Go over directions on planning sheet (back of Plants vs Animals Venn Diagram handout).
2. Explain that the groups will each get a piece of posterboard and create a 3D model of each cell on the poster board. Students must include all parts and label each cell and organelle.
3. Give students time to plan and create cell models.
4. Assist students as needed during project.

Evaluate (15 minutes):

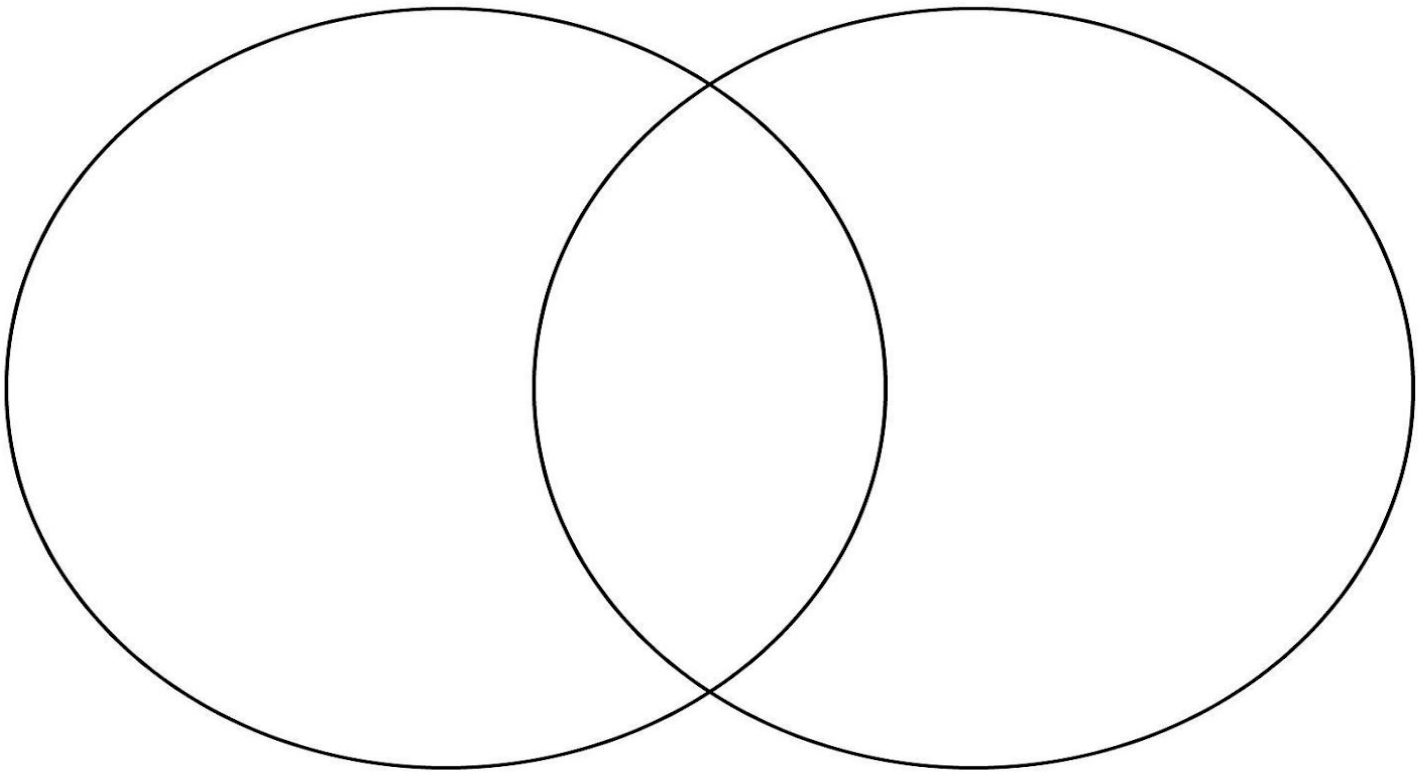
1. When students are finished with the model, have the groups present their models and how they decided to represent each organelle. Students should also be able to explain the main differences between the two types of cells.
2. Collect models to evaluate.

Additional Lesson Strategies:

- To use Legends for additional instruction, create a custom playlist with an instructional game and pre and post assessment.
- To use Legends for a quick formative assessment, create a 5-question assessment in a playlist.
- To use Legends for a student-directed experience, create a targeted freeplay playlist.
- Encourage students to play on their own at home in Legends of Learning: Awakening for a student-driven experience including avatars, battling, and quests all centered around topics they are covering in class.

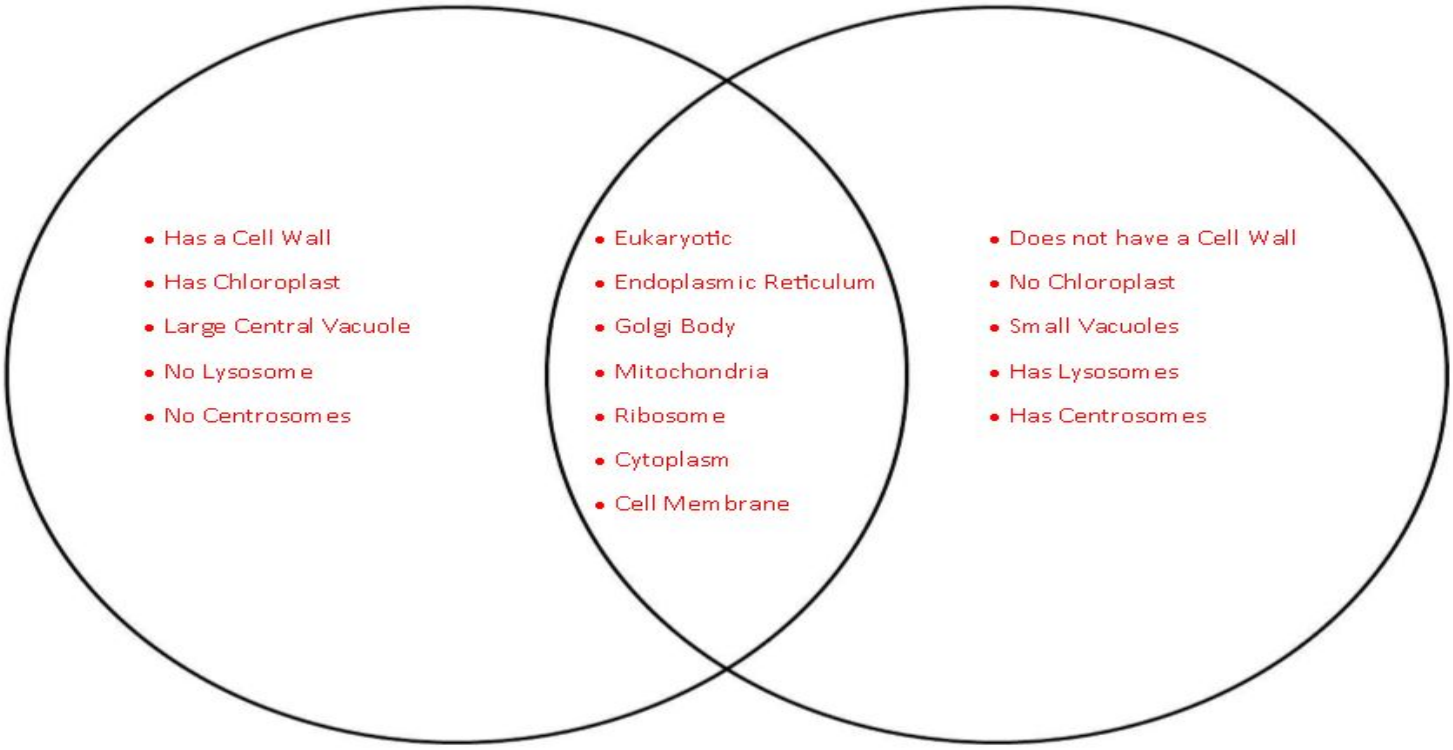
Plants vs. Animals Venn Diagram

Plant Cells Both Animal Cells



Plants vs. Animals Venn Diagram

Sample Key



Cell Model Planning Sheet

Directions: Use the space below to plan out your model of each cell type. Be sure to include all required parts.

Plant Cell Organelles:

1. Cell membrane
2. Cytoplasm
3. Nucleus
4. Golgi Apparatus
5. Mitochondria
6. Endoplasmic Reticulum
7. Ribosomes
8. Central Vacuole
9. Cell wall
10. Chloroplasts

Animal Cell Organelles:

1. Cell membrane
2. Cytoplasm
3. Nucleus
4. Golgi Apparatus
5. Mitochondria
6. Endoplasmic Reticulum
7. Ribosomes
8. Lysosomes
9. Vacuoles