

Lesson Plan

Description
 Students will learn cell parts of plant and animal cells through a coding game. They will be able to pair organelles with a description of their function within a cell. Students will also practice coding skills by writing a code to indicate when the game has been won.

<p>Big Ideas Plants and animals, including humans, are made of specialized cells, tissues, and organs that are organized into systems.</p>	<p>Specific Expectation B2.3 examine different plant and animal cells (e.g., cheek cells, onion cells) under a microscope or similar instrument, and draw labelled biological diagrams to show how the cells' organelles differ [PR, C]</p>
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Introduction

- Play this video to review cells and their parts:
<https://www.youtube.com/watch?v=8IlzKri08kk>
- French: <https://youtu.be/ecASd4kBReA>
- *You may choose to use the provided PowerPoint to guide the lesson from here.*
- After viewing the video, inform students that they will need to choose 9 cell parts to create a game in Scratch that pairs their chosen cell parts with their functions
- Review cell parts and have students choose which ones they would like to practice
- Review the functions in Scratch

Action

- Have students open the game template code by clicking <https://scratch.mit.edu/projects/881884745/>. They will need to log in to their account and remix the template code.
- Provide the following instructions to students:
 - Click on each sprite (in the box in the bottom right) and edit their costume to fill in the cell parts and definitions that you want to include in your game
 - Create a new sprite to appear when all cards have been matched
 - Write a code for the game winning sprite. Ask students to think about what should happen when the game is won and how the code will know when the game is won
 - Encourage students to edit the game to be their own

- Encourage students who finish early to explore the code. They should try and discover what each block does. They can do this by altering the content of the code and determining what changes.

Consolidation/Extension

- Have students play a peer's game and provide constructive feedback for one another.
- While students are playing each other's games walk around and make note of interesting thinking.
- Highlight unique thinking such as interesting end game codes.
- Encourage students who need a challenge to interpret the block code provided. Ask questions like what does each block of code do?

Accommodations/Modifications

Students may be given the opportunity to work collaboratively and/or use assistive technology such as speech-to-text. An answer key and completed game have been provided to guide students as needed.

Assessment

Assessment of learning: quiz on cell organelles (not provided)
Assessment for learning: playing their matching game allows students to test their ability to pair organelles with their function

Additional Resources

Completed matching game: <https://scratch.mit.edu/projects/881885493/>
 Matching game template: <https://scratch.mit.edu/projects/881884745/>
 Matching game guide: <https://brightchamps.com/blog/create-a-scratch-card-matching-game/>
 How to use scratch video: <https://www.youtube.com/watch?v=NqMd44Oi2I4>
 Cell organelles and functions: <https://www.khanacademy.org/test-prep/mcat/cells/eukaryotic-cells/a/organelles-article>