

Teaching and Learning with ICT

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Biology Lesson Plan by Seda ZÜHAL

Subject: Cell Structure and Function

Lesson Summary

Overview

In this lesson, students explore the relationship between structure and function in a cell. They start by viewing a variety of specialized cells. They learn three main parts of a cell--the nucleus, cytoplasm, and cell membrane--and discuss generally what each part does. Then, through an interactive activity, they explore the gatekeeper role of the cell membrane. They follow up by examining in more detail the organelles located in the cytoplasm. Next, students compare animal and plant cells. Finally, they explore the similarities and differences among specialized cells.

Objectives

- Recognize the relationship between structure and function in a cell
- Explore the role of the cell membrane
- Explore the role of organelles
- Compare animal and plant cells
- Compare the structure and function of specialized cells

Suggested Time

- One class period : 40min

Multimedia Resources

- <http://www.EBA.gov.tr/> (National Educational ICT Network) resources
- Nucleus, Cytoplasm, Membrane Educational Videos
- Cell: Flash Interactive Matching Game
- Organelles in the Cytoplasm Educational Video
- <https://www.thatquiz.org/tr/> Internet Quiz

Materials

- Student Books, slideshows and videos

After the Lesson

Have students explore a variety of plant and animal cells under a microscope and identify the cell structures described in this lesson in the School Biology Laboratory.

Have students measure cells to compare sizes in the laboratory.

Step	Activity	Objective	Classroom organisation	Equipment	Time
1.	<p>After the greetings, teacher discusses plant and animal similarities and differences with students. It doesn't seem like they have much in common with a tree, but scientists would say that they do. What do plants and animals have in common?</p> <p>Guide students to an explanation that all living things are made up of cells. Teacher tells students that inside cells, there are parts that work together to make the cell do its job. All of the jobs that living things do are actually being done by cells; this is why we say that cells are the building blocks of life. Teacher shows some JPEG pictures over interactive board.</p> <p>Teacher asks questions to warm-up the class: Q1: Which animal has a bigger cell do you think? An elephant or a mouse? Q2 : Does the ostrich egg consist of a single cell or many cells?</p>	Warm-up	Frontal work	Interactive board EBA.gov.tr	5'
2.	<p>To understand what prior knowledge do the students have for this lesson, she opens up the quiz she prepared over https://www.thatquiz.org/tr/</p>	Prior Knowledge	Frontal work	Interactive board	7'

3.	After the quiz, teacher begins to teach the students the cell and its functions and structures with the slideshow she prepared on the interactive board and the students follow the subject from thier course books.	Teaching Phase	Frontal work	Interactive board	10'
4.	<p>Meanwhile the teacher opens up a video clip that is high quality, shows the structures of cells, explains how they function and reviews the differences between plant and animal cells. Stops the video after each of the organelles being presented to ask students to restate the function of the organelle, which type of cell it has, and why its shape might help it do its job.</p> <p>After students have viewed the video, teacher directs their attention back to the interactive board for a "matching game exercise" about the subject from the National Educational ICT Network,EBA: http://f.eba.gov.tr/FenUygulamalari/Hucre/CellWeb.html</p>	<p>Guided Practice</p> <p>Independent Practice</p>	Frontal work	Interactive board EBA.gov.tr	10'
5.	After the matching game, the students are asked to solve the same quiz once again to see how much they have learnt https://www.thatquiz.org/tr/	Feedback, Summative Assessment	Individual Work	Interactive board, Eba.gov.tr	8'