

ПЛАН УРОКА




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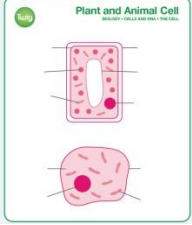
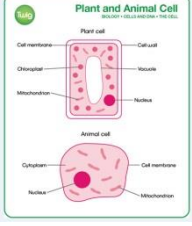
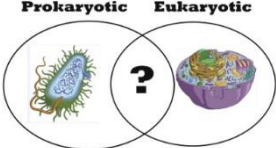

Предмет	Биология
Учитель	Кособоков А.В.
Школа, класс	СКО, г. Сергеевка, КГУ «СШ им. Героя Социалистического Труда Е. Шайкина», 8 класс
Тема урока	Prokaryotic and eukaryotic cell structure

Lesson objectives:	<p>By the end of the lesson All students will be able to: describe the structure of prokaryotic cells and eukaryotes. Most students will be able to: compare the structure of prokaryotic cells and eukaryotes. Some students will be able to: determine the value of organoids in the life of the cell.</p>																																																		
Assessment criteria:	<ol style="list-style-type: none"> Students compare the structure of prokaryotic and eukaryotic cells on the basis of illustrations. Name evidence of similarities and differences of prokaryotic and eukaryotic cells. Apply scientific terminology during the lesson. Create and describe a model of the cell. 																																																		
Language objectives:	<p>Students: On the basis of the obtained knowledge, similar and distinctive features of eukaryotic and prokaryotic cells are determined and named.</p> <p>Vocabulary and terminology:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">English</th> <th style="text-align: left;">Transcription</th> <th style="text-align: left;">Kazakh</th> <th style="text-align: left;">Russian</th> </tr> </thead> <tbody> <tr> <td>prokaryote</td> <td> prəʊ'kariəʊt </td> <td>прокариот; ядросыз</td> <td>прокариот</td> </tr> <tr> <td>eukaryote</td> <td> ju:'kariəʊt </td> <td>эукариоттар; ядролылар</td> <td>эукариот</td> </tr> <tr> <td>nucleus</td> <td> 'nju:klɪəs </td> <td>ядро</td> <td>ядро</td> </tr> <tr> <td>cell wall</td> <td> sel wɔ:l </td> <td>жасуша қабырғасы</td> <td>клеточная стенка</td> </tr> <tr> <td>cell membrane</td> <td> sel 'membreɪn </td> <td>жасуша жарғақшасы</td> <td>клеточная мембрана</td> </tr> <tr> <td>plastid</td> <td> 'plastɪd </td> <td>пластида</td> <td>пластида</td> </tr> <tr> <td>mitochondrion</td> <td> ,mɪtə(ʊ)'kɒndrɪən </td> <td>митохондрия</td> <td>митохондрия</td> </tr> <tr> <td>cell vacuole</td> <td> sel 'vakjuəʊl </td> <td>жасуша вакуоль</td> <td>клеточная вакуоль</td> </tr> <tr> <td>ribosome</td> <td> 'rɪbə(ʊ)səʊm </td> <td>рибосома</td> <td>рибосома</td> </tr> <tr> <td>cytoplasm</td> <td> 'saɪtə(ʊ)plaz(ə)m </td> <td>цитоплазма</td> <td>цитоплазма</td> </tr> <tr> <td>endoplasmic</td> <td> ɛndəʊ'plazmɪk </td> <td>эндоплазмал</td> <td>эндоплазматичес</td> </tr> </tbody> </table>			English	Transcription	Kazakh	Russian	prokaryote	prəʊ'kariəʊt	прокариот; ядросыз	прокариот	eukaryote	ju:'kariəʊt	эукариоттар; ядролылар	эукариот	nucleus	'nju:klɪəs	ядро	ядро	cell wall	sel wɔ:l	жасуша қабырғасы	клеточная стенка	cell membrane	sel 'membreɪn	жасуша жарғақшасы	клеточная мембрана	plastid	'plastɪd	пластида	пластида	mitochondrion	,mɪtə(ʊ)'kɒndrɪən	митохондрия	митохондрия	cell vacuole	sel 'vakjuəʊl	жасуша вакуоль	клеточная вакуоль	ribosome	'rɪbə(ʊ)səʊm	рибосома	рибосома	cytoplasm	'saɪtə(ʊ)plaz(ə)m	цитоплазма	цитоплазма	endoplasmic	ɛndəʊ'plazmɪk	эндоплазмал	эндоплазматичес
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	с reticulum (ER)	riˈtɪkjʊləm	ық ретикулум	кий ретикулум
	nucleoid	ˈnjuːklɔɪd	нуклеоид	нуклеоид
	Useful expressions for dialogue and writing: If there is/is no nucleus in a cell, it is a cell..... In prokaryotic/eukaryotic cells present/absent The similarity in the structure of prokaryotic and eukaryotic cells is			
Value links:	Respect for yourself and others. Transparency and academic integrity. Cooperation. Patriotism and civic responsibility on the basis of the National idea «Mangilik El».			
Interdisciplinary connections:	Natural science, chemistry.			
The use of ICT:	Use of Internet resources, app applications, videos.			
Prior knowledge:	«Structure of plant and animal cells», grade 7.			

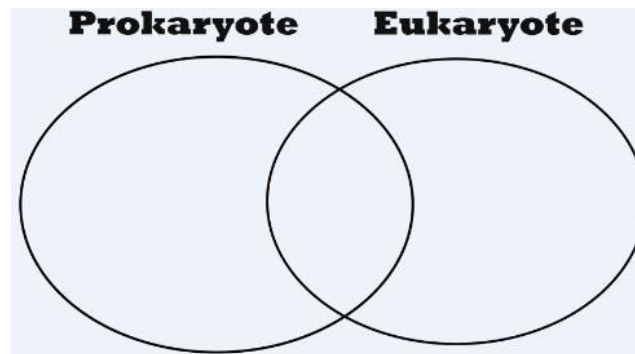
The lesson plan

Planned stages of the lesson	Planned activities in the classroom	Resources
The beginning of the lesson 0–1	1). Mental attitude. «Smile» Aim: Creating a favorable psychological atmosphere. Organization: The teacher offers to look at each other and smile.	
1–4	2). Repetition and updating of knowledge. The teacher shows a short video clip of the video – «What is cell?» and further asks questions: - What are the signs that you will determine that this is an animal cell? What are the signs that you will determine that this is an animal cell?	 https://twig-bilim.kz/en/film/what-is-a-cell (ENG) (00:49 сек)
4–7	- How does an animal cell differ from a plant cell (a comparative image of plant and animal cells)? How does an animal cell differ from a plant cell? Task: the Teacher asks to remember and record on the form part of plant and animal cells. Formative assessment: peer assessment. On the Board displays a form with the correct answers. Students exchange forms and assess each other.	Training material https://twig-bilim.kz/uploads/material-group/6/en/twig-thecell.zip (ENG) cells01_PlaAniCell_BLANK

<p>7–8</p>	<table border="1"> <thead> <tr> <th data-bbox="523 120 836 170">Criterion</th> <th data-bbox="836 120 1139 170">Descriptor</th> </tr> </thead> <tbody> <tr> <td data-bbox="523 170 836 443">Defines the main parts of plant and animal cells</td> <td data-bbox="836 170 1139 443">Correctly defines the main parts of plant and animal cells. For each correctly defined part of the cell – 1 point.</td> </tr> </tbody> </table>	Criterion	Descriptor	Defines the main parts of plant and animal cells	Correctly defines the main parts of plant and animal cells. For each correctly defined part of the cell – 1 point.	 <p>cells01_PlaAniCell</p>  <p>Annex 1</p> 
Criterion	Descriptor					
Defines the main parts of plant and animal cells	Correctly defines the main parts of plant and animal cells. For each correctly defined part of the cell – 1 point.					
<p>The middle of the lesson</p> <p>10–25</p>	<p>3) Division into groups. Reception «Puzzle»</p> <p>Aim: the class divide into 2 groups.</p> <p>Organization: students collect the image from the cut leaves (puzzles).</p> <p>Procedure: the Teacher offers students to take one piece of paper. Each leaf is a puzzle of the whole image. After collecting two different images, students are divided into two groups.</p> <p>4). Call stage:</p> <p>Aim: describe the structure of prokaryotic cells and eukaryotes.</p> <p>Organization: demonstration of the image.</p> <p>Procedure : Students are invited to look closely at the resulting collection of the puzzle images (duplicated on an interactive whiteboard) and try to formulate the aim of the lesson:</p> <ul style="list-style-type: none"> - compare the structure of eukaryotic and prokaryotic cells <p>Formative assessment: teacher's praise</p> <p>5). Differentiated tasks <i>(multi-level tasks tailored to individual needs, result-oriented according to learning objectives)</i></p> <p>Task №1.</p> <p>Reception: "Biological battle". <i>(The method of active learning), (Differentiation of objectives and criteria of success).</i></p> <p>Form of work: group work of students.</p> <p>Level of thinking skills: Analysis.</p> <p>Aim: compare the structure of prokaryotic cells and eukaryotes.</p> <p>Procedure: Students study materials of a web resource bilimland.kz (a, b). Students are given 10 min. Then they come in turns to the interactive whiteboard to fill in the table. The team that makes the least mistakes</p>	<p>a) №4956. Cells in Bacteria</p>  <p>https://bilimland.kz/en/courses/biology-en/evolution/biology-the-science-about-life/lesson/cells-in-bacteria</p> <p>b) №4872. The cellular structure</p>				

wins.

«Similarities and differences in the structure of prokaryotic and eukaryotic cells»



critierion	descriptor
Identify similar and distinctive features of prokaryotic and eukaryotic cells	Correctly identify similar and distinctive features of prokaryotic and eukaryotic cells.

Formative assessment: Peer assessment.

Receive: «Revive the cell.»
(Active learning method. Differentiation based on the individual needs of students)

Form of work: individual.

Level of thinking skills: Knowledge. Application. Analysis.

Aim: compare the structure of prokaryotic cells and eukaryotes.

Procedure: Students paint images of eukaryotic cells and then project them through the application «Quiver - 3D Coloring App» in 3D format.



Then, students compare the structure of eukaryotic cells with prokaryotic using the application «Bacteria interactive educational VR 3D». Visually identify the similarities and differences.

<https://bilimland.kz/en/courses/biology-en/the-cell-is-a-unit-a-living/cell-structure-and-function/lesson/the-cellular-structure>

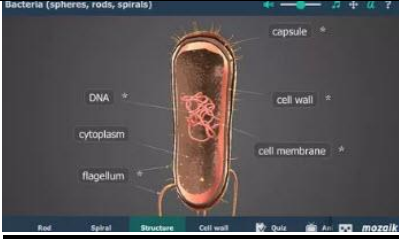
<http://www.quivervision.com/education-coloring-packs/#education-starter-pack>

«Quiver - 3D Coloring App»
<https://play.google.com/store/apps/details?id=com.puteko.c>



«Bacteria interactive educational VR 3D»
<https://play.google.com/store/apps/details?id=com.rendernet.bacteria&hl=en>



<p>25–35</p>	 <p>Formative assessment: self-assessment</p> <p>Task №2 Reception: «Modeling». <i>(Active learning method)</i> Form of work: group work of students. Level of thinking skills: Synthesis. Purpose: determine the value of organoids in the life of the cell. How it works: from improvised materials students model prokaryotic and eukaryotic cells. Formative assessment. Teacher's praise.</p> <p>Task №3 Consolidation of knowledge Form of work: individual Formative assessment: teacher assessment</p>	<p>paper, plastic, fabric, wire, glue, etc.</p> <p>https://create.kahoot.it/share/cell/50b3f97d-4b2e-4bec-acc7-8c70b3302ab8</p>
<p>The end of the lesson 38–40</p>	<p>Feedback. Active learning <i>(Differentiation, result, conclusions on achievement of goals)</i></p> <p>Reflection Aim: Structured reflection of learning</p> <ul style="list-style-type: none"> - What did you learn in lesson today? - What didn't you understand? - What do you need to work on? 	

<p>Differentiation-how do you plan to provide more support? What tasks do you plan to set for more capable students?</p>	<p>Assessment-how do you plan to check the level of learners ' learning?</p>	<p>Health and safety</p>
<p>Differentiation aims to meet the needs of each student and to achieve the goal of all. The lesson used several methods of</p>	<p>At each stage of the lesson, a formative assessment is carried out:</p> <ul style="list-style-type: none"> - peer assessment according to the developed criteria and descriptors; - teacher's praise and comments; - self-assessment. 	<p>Reminder of compliance with the rules of technology. Visminda seen in active learning methods.</p>

<p>differentiation.</p> <p>1.Differentiation by level of training (low, medium).</p> <p>2.differentiation by interpersonal intelligence (linguistic, visual-spatial).</p> <p>3.Differentiation in the degree of independence</p>		
<p>Lesson reflection</p> <p>Was the purpose of the lesson or learning objectives real and accessible? Have all students reached the learning goal? If the students have not yet reached the goal, why do you think?</p> <p>Correctly carried out differentiation in the classroom? Effectively if you used the time during the stages of the lesson? Were there any deviations from the lesson plan, and why?</p>		
<p style="text-align: center;">Overall assessment</p> <p>Two things are best passed on the lesson (concerning teaching and learning)?</p> <p style="padding-left: 40px;">One:</p> <p style="padding-left: 40px;">Two:</p> <p>What could help to make the lesson even better? (concerning teaching and learning)?</p> <p style="padding-left: 40px;">One:</p> <p style="padding-left: 40px;">Two:</p> <p style="text-align: center;">What did I learn in this lesson about the class or about the achievements/difficulties of individual students?what should I look for in the next lesson?</p>		