Building 3D Organelle Model

Overview: Working in groups, students construct three-dimensional models of specific cell organelles and structures. Models are shared in a gallery walk, during which students communicate functional elements of the model to classmates.

Adapted from CSCOPE lesson plan by Dr. Melody Hopkins-Tucker, Citronelle High School, Citronelle, AL
http://www.bsisd.esc18.net/documents/Lesson%20Ideas/LESSONS%20&%20RESOURCES/SCIENCE/7th%20Gr/Science_Grade_07_Unit_07_Exemplar_Lesson_01__Cell_Structure_and_Function.pdf

1. Review organelles with students, including structure and function.
2. Instruct students to work with a partner to research and investigate the structure and function of each organelle that makes up a cell and write down their findings in a chart. Students need to include the organic compounds that comprise the various organelles.
3. Explain to students that each group is to create a 3D model of the cell part, along with information on the structure and function of the cell part to share with the class in a gallery walk.
4. Additionally, explain to students that during the gallery walk, they will need to describe the structure and function of the cell part.
5. Allow students time to plan and gather materials needed for their model. You may wish to allow students to gather materials from home as well.
6. Allow students time either at home or school to assemble the model.
7. Conduct a gallery walk in which groups move from model to model, discussing, communicating, and summarizing the function and structure of each organelle in their science notebooks.
8. Repeat this process until students are back at their original model.
9. Assist and monitor student groups as necessary.
10. Facilitate a class discussion in which students reflect on the structure and function of each organelle and the differences between plant and animal cells.
11. Score student developed models and explanations using the rubric below.
# 3D Cell Model Project Rubric

Student Name ____________________________

Group Members ________________________________________

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scientific Knowledge</strong></td>
<td>Explanations indicate a clear and accurate understanding of scientific principles underlying the construction and modifications.</td>
<td>Explanations indicate a relatively accurate understanding of scientific principles underlying the construction and modifications.</td>
<td>Explanations indicate a relatively accurate understanding of scientific principles underlying the construction and modifications.</td>
<td>Explanations of the group do not illustrate much understanding of scientific principles underlying the construction and modifications.</td>
</tr>
<tr>
<td><strong>Information Gathering</strong></td>
<td>Accurate information taken from several sources in a systematic manner.</td>
<td>Accurate information taken from a couple of sources in a systematic manner.</td>
<td>Accurate information taken from a couple of sources but not systematically.</td>
<td>Information taken from only one source and/or information not accurate.</td>
</tr>
<tr>
<td><strong>Construction - Materials</strong></td>
<td>Appropriate materials were selected and creatively modified in ways that made them even better.</td>
<td>Appropriate materials were selected and there was an attempt at creative modification to make them even better.</td>
<td>Appropriate materials were selected.</td>
<td>Inappropriate materials were selected and contributed to a product that performed poorly.</td>
</tr>
<tr>
<td><strong>Journal/Log - Appearance</strong></td>
<td>Several entries made and all are dated and neatly.</td>
<td>Several entries are made and most of the entries are dated and neatly entered.</td>
<td>Several entries are made and most of the entries are dated and legible.</td>
<td>Few entries are made AND/OR many entries are not dated or very difficult to read.</td>
</tr>
<tr>
<td><strong>Collaboration with Peers</strong></td>
<td>Almost always listens to, Usually listens to, shares with, Often listens to, shares with, Rarely listens to, shares with,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shares with, supports others in the group. Tries to keep people working well together.</td>
<td>and supports the efforts of others in the group. Does not cause &quot;waves&quot; in the group.</td>
<td>and supports the efforts of others in the group but sometimes is not a good team member.</td>
<td>and supports the efforts of others in the group. Often is not a good team member.</td>
<td></td>
</tr>
</tbody>
</table>

Total Points ______/20

Comments:__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

Created using Rubistar - http://rubistar.4teachers.org