2015

Sickle Cell Anemia

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Learning Objectives
Students will be able to...
- Compare and contrast normal red blood cells with sickle cells.
- Determine that sickle cells transport oxygen molecules at a slower rate than normal red blood cells.
- Compare the oxygen carrying capacity of normal red blood cells and sickle cells.
- List five consequences of sickle cell anemia to the human body.
- Justify how the body responds to sickle cell anemia in an attempt to maintain homeostasis.
- Describe how sickle cell anemia impacts body systems in addition to the circulatory system.

Instructional Resources and Materials to engage students in learning:
- Handouts: Warm-Up Mind Map, Sickle Cell Anemia Student Worksheet
- Resources: Smartboard, Audio speakers, Sickle Cell Anemia Video, 15 Computers, Sickle Cell Anemia Netlogo model

Instructional Strategies and Learning Tasks that support diverse student needs. (Include what you and students will be doing.):

<table>
<thead>
<tr>
<th>Lesson Component:</th>
<th>Activity:</th>
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<tbody>
<tr>
<td>Warm-Up (5 minutes)</td>
<td>Students will complete a mind map to recall their prior knowledge on the circulatory system and how it interacts with other organ systems.</td>
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<tr>
<td>Engage (5 minutes)</td>
<td>Students will watch a video to be introduced to sickle cell anemia. <a href="http://www.dnalc.org/resources/3d/17-sickle-cell.html">http://www.dnalc.org/resources/3d/17-sickle-cell.html</a> + Students will complete a vocabulary alphabet worksheet to record notes.</td>
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<tr>
<td>SickleCellAnemia NetLogo Activity (30 minutes)</td>
<td>Students explore the circulatory system and sickle cell anemia via Netlogo model</td>
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<tr>
<td>Evaluate (5 minutes)</td>
<td>Students will explain their understanding of sickle cell anemia and how it can affect other body systems.</td>
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