

<b>Unit: Science for Success</b>	<b>Lesson 1: Life Science Organization of Life: Cell Theory</b>
<p><b>Objectives</b></p> <p>The student will be able to:</p> <ul style="list-style-type: none"> <li>• Explain that all living things are made up of cells.</li> <li>• Explain that cells come from other cells.</li> <li>• Explain that there are many different types of specialized cells.</li> <li>• Describe the parts of a cell.</li> </ul> <p><b>This lesson took two class periods to complete.</b></p>	<p><b>Materials:</b></p> <ul style="list-style-type: none"> <li>• New Readers press Science for the GED Test pages 5-7.</li> <li>• Computers</li> <li>• <b>Micro organisms</b>  <a href="http://www.bbc.co.uk/schools/scienceclips/ages/10_11/micro_organisms_fs.shtml">http://www.bbc.co.uk/schools/scienceclips/ages/10_11/micro_organisms_fs.shtml</a>            (May have to copy and paste this in Goggle Chrome to get it to work.)</li> <li>• <b>Biology cell structure</b> <a href="https://youtu.be/URUJD5NEXC8llkkk">https://youtu.be/URUJD5NEXC8llkkk</a> (Show this last)</li> <li>• <b>Explains photosynthesis</b>  <a href="https://www.youtube.com/watch?feature=player_detailpage&amp;v=gXyd0lC5uU">https://www.youtube.com/watch?feature=player_detailpage&amp;v=gXyd0lC5uU</a></li> <li>• <b>Fermentation ending with making ginger ale</b>  <a href="https://www.youtube.com/watch?v=4SosPuWAg7g">https://www.youtube.com/watch?v=4SosPuWAg7g</a></li> <li>• 2 liter bottles for each student</li> <li>• Sugar</li> <li>• Ginger</li> <li>• 1 lemon per student or a bottle of lemon juice</li> <li>• Yeast</li> <li>• Water</li> <li>• ½ cup measuring cup</li> <li>• ½ teaspoon measuring spoon</li> <li>• grater</li> </ul>
	<p><b>WDOK: Level 1, 2, 3, 4</b></p> <p><b>CCSS:</b></p> <p><b>SDSS: MS-LS1-1</b></p>
<p><b>Key Words</b></p> <ul style="list-style-type: none"> <li>• Research- A study or an investigation</li> <li>• Theory- a hunch or idea</li> <li>• Scientific theory- a widely tested and accepted explanation of a set of observations</li> <li>• Cell- the basic unit, or building block, of life</li> <li>• Unicellular- one-celled organisms</li> <li>• Microorganisms- one-celled organisms</li> <li>• Multicellular- many-celled organisms</li> <li>• Cell membrane- controls the substances that flow in and out of the cell.</li> <li>• Chloroplasts- cell components where photosynthesis takes place</li> <li>• Chemical Reaction- a change of one or more substances into new substances</li> <li>• Metabolism- chemical changes in an organism</li> </ul>	
<p><b>Introduction:</b> The GED Science Test will be 90 minutes long and include approximately 34 questions with a total score value of 40. The questions will have focus on three content areas: life science (~40%), physical science (~40%), and Earth and space science (~20%). Students may be asked to</p>	

read, analyze, understand, and extract information from a scientific reading, a news brief, a diagram, graph, table, or other material with scientific data and concepts or ideas.

The online test may consist of multiple choice, drop down menu, and fill-in-the-blank questions. There will also be a short answer portion (suggested 10 minutes) where students may have to summarize, find evidence (supporting details), and reason or make a conclusion from the information (data) presented. (from the Minnesota Literacy Council)

Today we will begin our study of life science by learning or reviewing cell theory.

**Instructional Activities:** 1. Read and discuss pages 5 and 6 from the *Science for the GED Test* book and write the definitions of the cell components in your notebook.

2. Go to the BBC site I've listed on the board. Click on the icon labeled "Micro Organisms. Find the six microorganisms in the photo. Read all of the material that appears with each microorganism you choose. Then take the quiz.

3. Read pages 7 and the top of page 8 and take notes on photosynthesis.

4. On the you tube link and watch the video called " Photosynthesis Simple Explanation" by [www.smilinggardner.com](http://www.smilinggardner.com) for 4 minutes and 11 seconds to begin clarifying the photosynthesis process and why it is important.

5. Watch another you tube video to help students understand fermentation. As they are watching the demonstration, have them each make a bottle of ginger ale. (After 48 hours the ginger ale is done and can be consumed.)

#### **Student Product**

- Write a summary of what you learned in class today and turn it in to the instructor.