



**Oakland Schools Science Scope**

In my OWN words this means . . .	TEXT <b>Cell Energy</b>	Write or draw what you visualize while reading the text.
	<p><b>How Does a Plant Make Food?</b></p> <p>The sun is the major source of energy for life on Earth. Plants use carbon dioxide, water, and the sun's energy to make food in a process called <b>photosynthesis</b>. The food that plants make gives them energy. When animals eat plants, the plants become sources of energy for the animals.</p> <p>Plant cells have molecules called <i>pigments</i> that absorb light energy. Chlorophyll is the main pigment used in photosynthesis. Chlorophyll is found in chloroplasts. The food plants make is a simple sugar called <i>glucose</i>. Photosynthesis also produces oxygen.</p>	
	<p>Write formula for Photosynthesis:</p> 	
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	<p><b>How Do Organisms Get Energy from Food?</b></p> <p>Both plant and animal cells must break down food molecules to get energy from them. There are two ways cells get energy: cellular respiration and fermentation.</p> <p>During <b>cellular respiration</b>, cells use oxygen to break down food. During <b>fermentation</b>, food is broken down without oxygen. Cellular respiration releases more energy from food than fermentation. Most eukaryotes, such as plants and animals, use cellular respiration.</p>	

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	<p align="center"><b>What Happens During Cellular Respiration?</b></p> <p>When you hear the word <i>respiration</i>, you might think of breathing. However, cellular respiration is different from breathing. Cellular respiration is a chemical process that happens in cells. In eukaryotic cells, such as plant and animal cells, cellular respiration takes place in structures called <i>mitochondria</i>.</p> <p>Recall that to get energy, cells must break down glucose. During cellular respiration, glucose is broken down into carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O), and energy is released. This energy is stored in a molecule called <i>ATP</i> (adenosine triphosphate). The figure below shows how energy is released when a cow eats grass.</p>	
	<p>Write formula for cellular respiration:</p>    	
<p>In my OWN words this means . . . GIST then summary</p>	<p align="center">TEXT</p>	<p>Write or draw what you visualize while reading the text..</p>
		<p>Draw the picture of the connection between Photosynthesis and Respiration:</p>

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In my OWN words this means . . . GIST then summary	TEXT	Write or draw what you visualize while reading the text.
	<p>How Is Fermentation Different from Cellular Respiration?</p> <p>During fermentation, cells break down glucose without oxygen. Some bacteria and fungi rely only on fermentation to release energy from food. However, cells in other organisms may use fermentation when there is not enough oxygen for cellular respiration.</p> <p>When you exercise, your muscles use up oxygen very quickly. When cells don't have enough oxygen, they must use fermentation to get energy. Fermentation creates a byproduct called <i>lactic acid</i>. This is what makes your muscles ache if you exercise too hard or too long.</p>	

