**Unit 4: Cells pt.2**

**Unit 4 References: Textbook Ch. 8.3 and 9 and Unit 2 and 3 at** [http://www.hippocampus.org/Biology?user=ahawley](http://www.hippocampus.org/Biology?user=mhandest)

**Quiz Dates: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Test Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**A: Cell Cycle**

1. Using a concept map relate the following terms: DNA, chromatin, chromatid, chromosome, and centromere

Make sure your concept map uses “connectors”, pictures and/or descriptions to explain the relationships.

1. Complete the Cancer Problem Solving Lab 8.3 on page 212 in the textbook.

**B: Cell Specialization**

1. Each of the following terms describes a specialized organelle or function that only applies to certain cells**. Define** each term. **Draw** a picture to represent each.
2. Phototaxis
3. Eyespot
4. Contractile Vacuole
5. Flagella
6. Cilia
7. Chloroplast

**C. Respiration**

**1.**  Write the equation for respiration. Circle the reactants (what organisms NEED).

1. What is the main goal of respiration? (what product do cells need to produce?)
2. RESPIRATION has two common meanings in Biology:
3. Changing food into energy for cells.
4. Exchanging oxygen for carbon dioxide – “breathing”.

These descriptions are not as different as you might think. Look at the respiration equation you wrote for #1. Explain how breathing is related to making energy from sugar.

1. Compare and Contrast aerobic and anaerobic respiration.

**D. Photosynthesis**

1. Write the equation for photosynthesis and explain how plants obtain each reactant needed for photosynthesis?

1. Visit the website: <http://www.passmyexams.co.uk/GCSE/biology/factors-affecting-rate-of-photosynthesis.html>
2. What is a limiting factor?
3. List three environmental factors that affect the rate of photosynthesis?
4. Draw the graph that shows how light intensity affects the rate of photosynthesis. Label the axes.
5. View the animated experiment on the site. How did the scientist measure the rate of photosynthesis in the water plant? What were they looking for?
6. Watch the animation describing temperature and photosynthesis. Draw the graph shown. Make sure to label the axes. Put a star on the graph where the photosynthetic enzymes in leaves are working the BEST!
7. What happens to enzymes in plant leaves at temperatures that are too high?
8. True/False: Increased carbon dioxide increases photosynthesis but at a certain CO2 concentration the rate of photosynthesis stays constant.