Cell Respiration Learning Activity

Go to- <http://www.sumanasinc.com/webcontent/animations/content/cellularrespiration.html>

Big Picture-

1. Overall, what are the reactants (what is needed) for cell respiration?
2. What are the products (what is produced)?
3. Why is photosynthesis and cell respiration considered opposite processes?
4. What is the source of energy in Photosynthesis? What is the energy created in cell respiration?
5. What organelle does photosynthesis occurs? What organelle does cell respiration occurs?

Glycolysis-

1. In the formation of pyruvate, it has to be oxidized. What is the reducing agent?
2. How many ATP’s are formed?
3. Identify the main difference between glucose and pyruvate.

Krebs Cycle-

1. Explain why the Krebs Cycle is a cycle.
2. Link reaction that takes place before the Krebs Cycle description:
   1. What enzyme is required?
   2. What is the end product?
   3. What leaves the pyruvate molecule? In what form?
   4. What is needed for the Krebs Cycle to begin?
3. Relationship to Glycolysis:
   1. How many times does the Krebs Cycle take place per glucose molecule? Explain why?
4. Carbon characterization:
   1. How many carbons are lost?
   2. How many carbons does the molecule in the end of the Krebs Cycle have? In the beginning?
   3. With the loss of carbon, what is formed?
5. Electron carrier identification:
   1. Oxidation occurs throughout the Krebs Cycle. What are the types of electron carriers?
   2. Where do the electron carriers carry the electrons to?
6. ATP production:
   1. How many ATP molecules are produced per cycle of the Krebs Cycle?
   2. How many per glucose?

Review Questions (not in the interactive website)

1. Explain how diffusion helps get oxygen and carbon dioxide in and out of the cell?
2. Oxygen and carbon dioxide pass through a phospholipid bilayer. What organelle is this called?
3. Glucose cannot get into the cell without energy. What type of transport is required?
4. Glucose is a sugar that is converted to ATP energy. What type of biomolecule is glucose?
5. What body system is involved in breaking down glucose from your food? What body system is involved in breathing in oxygen and out carbon dioxide? What body system uses ATP energy the most and state why?