**RAD guide—Section 9.1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| **Section 1** | **Cellular Respiration: An Overview** |
| Learning Goal | Understand the process of cellular respiration and its importance to living things. |
| **Key Terms** | |  |  |  | | --- | --- | --- | | **Pre-Reading**  **(√-, √, √+)** | **Key Terms** | **Post-**  **Reading**  **(√-, √, √+)** | |  | **Calorie** |  | |  | **Cellular respiration** |  | |  | **Aerobic** |  | |  | **Anaerobic** |  | |
| **Chemical Energy and Food**  What do chemical bonds have to do with food?  What is the difference between a Calorie and a calorie?  What is different about how your cells use food energy from a campfire?  **Analyzing Data Questions**   1. Interpret Data:   Per serving, which….   1. Calculate: Approximately how… 2. Calculate: Walking… | Chemical bonds (their electrons) store the energy of food  ing things...  1 Calorie = 1000 calories (energy unit for food)  1cal = amount of heat to raise 1 g water’s temperature by 1 °C  Cell respiration is many steps to allow most energy to be stored as ATP; combustion is burning food in oxygen to release all energy in one step as heat and light (both have same chemical equation)  skip |
| **Overview of Cellular Respiration**  Define cellular respiration.  What would happen if cellular respiration released all the chemical energy in food in just one step?  (Fig. 9.1)  List the three major stages of cellular respiration. Label them as aerobric or anaerobic. Where does each process take place? (you might need to come back to this question after reading the whole page).  Why does cellular respiration require the organism to “breathe?”  **Comparing Photosynthesis and Cellular Respiration**  Try to recreate Figure 9.3 from memory. Refer back to the picture for parts you can’t remember. DON’T SIMPLY COPY.  Describe how photosynthesis and cellular respiration are opposites.  Describe what makes them different. | Equation for Cell Respiration (words and then chemical formulas):  6C6H12O6 + 6O2 🡪 6CO2 + 6H2O  Process of releasing energy from chemical bonds of food then placing it into bonds of ATP  All enzymes and proteins would be denatured, so cells would die   1. Glycolysis in cytoplasm, anaerobic 2. Kreb’s cycle, in mitochondria, aerobic 3. \_electron transport chain, in mitochondrian, aerobic\_   Oxygen (O2) is a reactant breathed in, CO2 and H2O are products breathed outhttp://www.tritec-inc.org/science-units/energy2013-KeyToLife/images/pelosi/Photo-Resp.png  Opposite chemical equation, photosynthesis creates glucose, cell respiration breaks it down, photosynthesis absorbs energy, cell resp releases it  Use different organelles and chemical processes |