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| **GUIDED NOTES: Cell Energy** | |
|  | * Energy for living things comes from \_\_\_\_\_\_\_\_\_\_. Originally, the energy in food comes from the \_\_\_\_\_\_\_\_\_\_.   **\*BIOTIC:**  **Ex.**  **\*ABIOTIC:**  **Ex.** |
| **AUTOTROPHS:**  **“auto”:**  **EX.** | **HETEROTROPHS:**  **Ex:** |
| **Cell Energy**  **\*Label the molecule of ATP above using the following:** ribose, 3 phosphate groups, & adenine | * **The usable source of energy in cells is…** * **ATP stands for…** * **ADP stands for…** |
| * All energy is stored in the bonds of compounds(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the bond \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the energy) * When the cell has energy available, it can store this energy by… | http://www.millerandlevine.com/florida/atp-battery.jpg |
| **Question:** How is ATP converted into ADP? | **Answer:** |
| **photosynthesis.jpgPHOTOSYNTHESIS** | * What is it? * Where does it occur? |
| **wavelength reflection.gifPIGMENTS** | * Light absorbing compounds * Absorb some wavelengths of light and… * The color our eyes see is the color the pigment… * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the pigment inside the chloroplast which absorbs light for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. |
| **General Formula for Photosynthesis** | |
| **Label the Diagram Below** | |
| **Summary** | * Water is **broken down** and light energy is stored temporarily in inorganic energy carriers (**ATP and NADPH**) * Energy is **transferred** from ATP and NADPH to the organic compound **GLUCOSE** |
| **CELLULAR RESPIRATION**  **2 kinds…** | * Process by which the energy of **GLUCOSE** is **RELEASED** in the cell to be used for life processes, such as… |
| * Cells require a **constant source of energy** for life processes but… * Cells can regenerate ATP as needed by… * The energy stored in glucose by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is released by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and repackaged into the energy of ATP. | http://staff.tuhsd.k12.az.us/gfoster/standard/BCycles_files/cow_oxygencycle.jpg |
| **Draw a picture to show the connection between photosynthesis and cellular respiration.** | * Respiration occurs in all **EUKARYOTIC** cells and may take place either **with or without OXYGEN** present. * **AEROBIC:** * **ANAEROBIC:** * In which organelle does respiration take place? |
| **Aerobic Respiration:** | * Occurs in the mitochondria of the cell * # of ATP molecules produced = \_\_\_\_\_\_\_\_\_\_ |
| **General Formula for AEROBIC RESPIRATION** | |
| **Label the Diagram Below** | |
| **Summary: Aerobic Respiration occurs in three steps…**       \*Indicate the # of ATP molecules produced in each step. | |
| **ANAEROBIC RESPIRATION**  **2 Kinds:** | * Occurs when **NO OXYGEN** is available to the cell * Also called… * Produces… |
| **http://homepage.ntlworld.com/jim.dunleavy/images/brewing_24hr_yeast_head.jpghttp://blogs.nashuatelegraph.com/livefreeordine/files/fresh_baked_bread.jpgALCOHOLIC FERMENTATION** | * Occurs in… * Process used in the baking and brewing industry because yeast produces… * GLUCOSE |
| **http://nutritionresearchcenter.org/healthnews/wp-content/uploads/2008/02/general_muscle_cramps_intro01.jpgLACTIC ACID FERMENTATION** | * Occurs in muscle cells * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is produced in the muscles during rapid exercise when the body cannot supply enough \_\_\_\_\_\_\_\_\_\_\_\_\_ to the tissues which causes a burning sensation in the muscles * GLUCOSE |
| **Overview of Aerobic and Anaerobic Respiration**  **C6H12O6**  **glucose** | |