

Lets see some of the similarities between cell respiration and photosynthesis here on this page:

Similarities between Cell Respiration and Photosynthesis

1. ATP is a key molecule in each.
2. G-3-P is formed in both processes-In Glycolysis (cell respiration) and in Calvin cycle (photosynthesis).
3. Both have 2 processes feeding into one main one: Cell Respiration utilizes Glycolysis and Citric Acid Cycle to funnel energized electrons to Oxidative Phosphorylation process, PSII and PSI provide ATP and reducing power to Calvin Cycle.
4. Both utilize cycles where starting material is regenerated after molecules leave the cycles (Citric acid cycle Cell Respiration, Calvin cycle Photosynthesis).
5. Both rely on movement of electrons for operation.
6. Both use electron transport chains in production of ATP.
7. Both use chemiosmosis to generate ATP.
8. Mitochondria of cell respiration and chloroplasts of photosynthesis have distinct similarities, for example, as above, proton pumps pump H^+ across a membrane from low to high concentration. An endergonic process requiring energy protons diffuse back across membrane through ATP synthase, driving synthesis of ATP.
9. Can observe emergent properties via multiple steps in both processes.