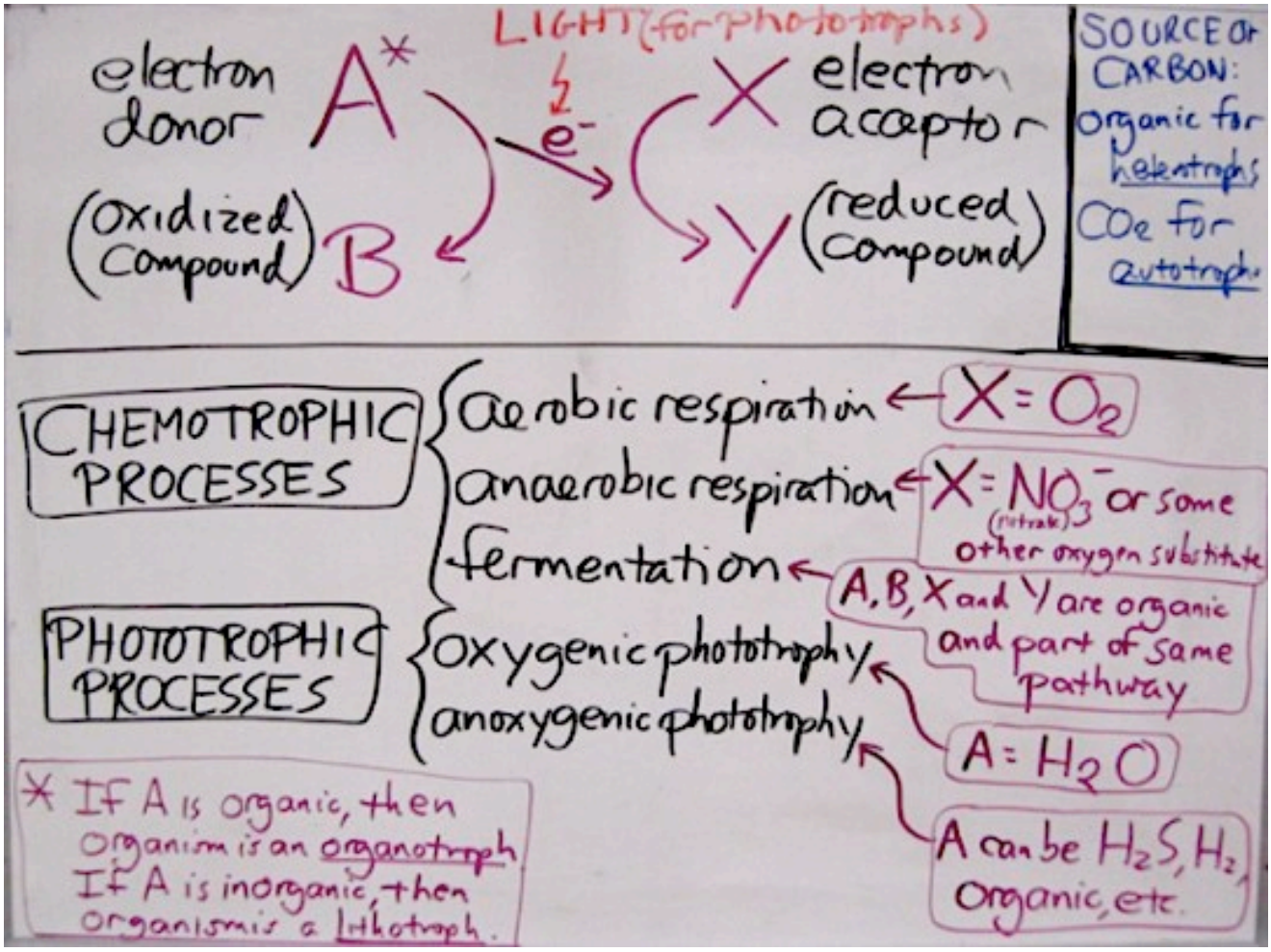
CATABOLISM

General Diagram

In a "catabolic pathway" (of which you may see detailed examples in a lecture course or text-book), a certain compound may be shown to be sequentially broken down such as Compound **A** –> Compound **B** –> Compound **C** –> Compound **D**, etc. **At one or more of the steps**, an electron may be given off and transferred to an "electron acceptor" and – in this process – energy may also be released that is ultimately trapped in the formation of **ATP**. Certainly you will be learning more about "oxidative phosphorylation," "substrate-level phosphorylation" and "photophosphorylation" in your lecture course.

The following diagram is ultra-simplified in that only the basic processes are shown – giving the conversion of Compound **A** to Compound **B** as a generalized example. Not shown are intermediate reactions and compounds such as the electron transport chain that is involved in respiration.

In this diagram and in the two pages that deal with chemotrophs and phototrophs separately, one sees the terminology associated with certain types of organisms, such as "**organotrophs**" and "**lithotrophs**."



For the **phototrophic** processes, attention shifts to the nature of the electron donor for the description of the two types – **oxygenic** (which means oxygen-evolving) and **anoxygenic**. To be consistent in this diagram with chemotrophy, what about the electron acceptor? X would be $NADP^+$ and Y would be NADPH, and further details can be found in your textbook and lecture course.

As for the **type of carbon source** (organic vs. inorganic) that an organism prefers, it would be designated **heterotroph** or **autotroph**. However, this set of terms relates to **biosynthesis** (anabolism) rather than catabolism.

(updated 4/11/11)