

# The P's of Biological Pathways

- The processes or pathways in biology can be broken down into several steps.
- Many of these steps have similar components, and many of these components can start with the letter “P”.
- Ones that come to mind are the “Parts” or “Pieces” that start the pathway, the “Process” these parts undergo, and the “Products” that are the result.
- There are many other “P”s that you can come up with, depending on the system or topic (Ploidy, for example) and coming up with new “P”s is often almost as informative as filling them out.
- The next page is an example of how this sheet could be used with the process of oxidative phosphorylation.

Lecture:		Topic:		Sub Topic:		
<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>	<u>P</u>

Place	Parts	Process	Products	Purpose	IP	IP
Inner membrane between mitochondrial matrix and intermembrane space	Membrane proteins, I, II, III, IV, H+, O <sub>2</sub> , NADH and FADH <sub>2</sub>	Proteins I and II hydrolyze e- carriers, I, III, and IV pump H+ into intermembrane space, IV passes e- to waiting O <sub>2</sub> , reducing O <sub>2</sub> to H <sub>2</sub> O	Bunch of electron acceptors (NAD+ and FAD), H <sub>2</sub> O, TONS of H+ ions in the intermembrane space	Develop an electron gradient to drive ATP synthesis		