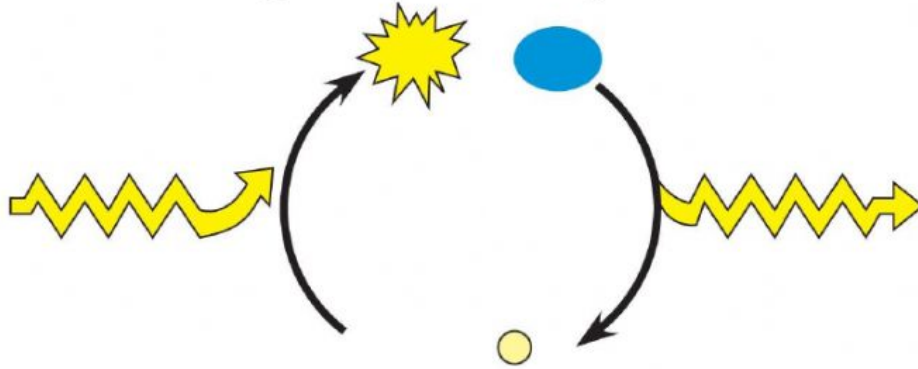


## ATP Structure and Function

Explain why and how ATP is used as an energy molecule by cells and how the energy released from ATP hydrolysis enables cellular work through energy coupling.

Label the diagram of the ATP/ADP cycle with the following:  
ATP, ADP,  $P_i$ ,  $H_2O$ , Energy from Catabolism, Energy for Cellular Work



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Define phosphorylation.

What class of protein can covalently attach phosphate groups?

What class of proteins remove phosphate groups?

Chemically explain how the addition of a phosphate group can change the function of a protein.

What three specific types of cellular work can be driven by energy coupling and the ATP/ADP cycle?