

Cells and Energy

- ★ Living cells use energy for many things
 - Movement
 - To change shape
 - Metabolism
 - Transport of nutrients into the cell
 - Expulsion of wastes from the cell

WHERE DO OUR CELLS GET THIS ENERGY?



FOOD!

- ★ Cells release energy in a series of ENZYME- CATALYZED chemical reactions

We call this CELLULAR RESPIRATION

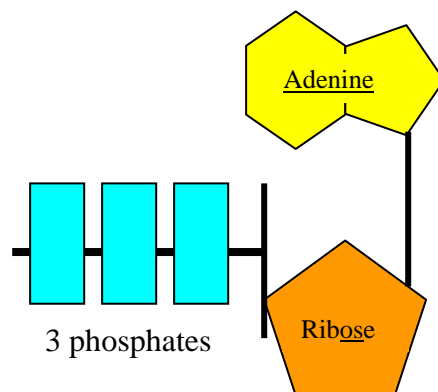
Cellular Respiration – the breakdown of food molecules into a useable form of energy for our cells

WHAT IS THAT USEABLE FORM OF ENERGY CALLED?

☞ **ATP**

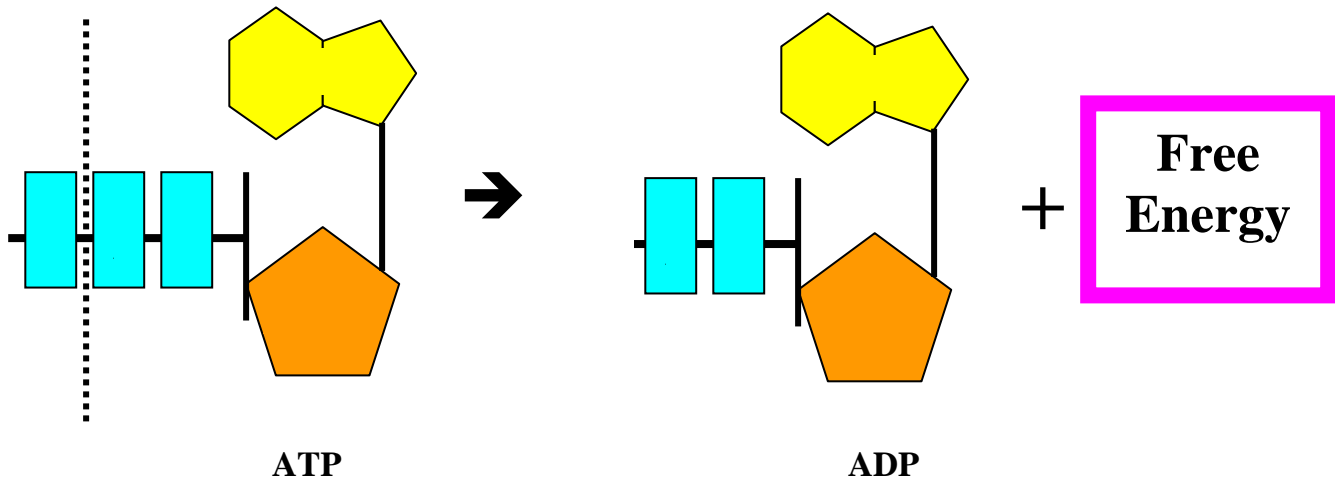
Adenosine triphosphate

- ★ Cells transfer energy from food to a molecule called ATP
 - Portable form of “energy currency” inside the cell – the energy storing molecules in our cells



SO HOW DOES THE ENERGY GET OUT OF THE ATP MOLECULE?

- ☞ When the bond between two phosphate groups of ATP is broken, free energy is released



- ☞ This series of chemical events is sometimes called the ATP-ADP cycle