

## Chapter 9.1 – Energy and Life

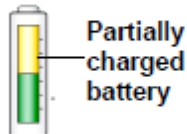
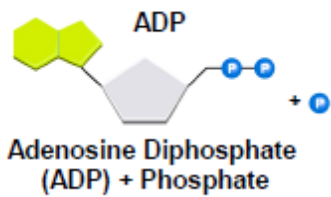
### Essential Question(s):

### Questions:

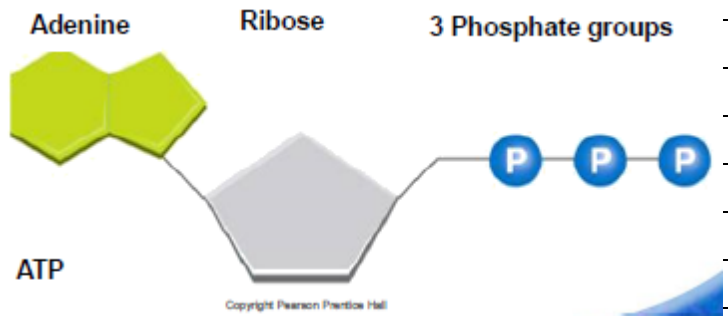
- Living things need \_\_\_\_\_ to survive.
- This energy comes from \_\_\_\_\_. The energy in most food comes from the \_\_\_\_\_.
- \_\_\_\_\_ and some other types of organisms are able to use \_\_\_\_\_ energy from the sun to produce \_\_\_\_\_ and are called **autotrophs**.
- Other organisms, such as \_\_\_\_\_, cannot use the sun's energy \_\_\_\_\_ and obtain energy from the foods they consume. These are called **heterotrophs**.

### Chemical Energy and ATP

- Energy comes in many forms including \_\_\_\_\_, heat and electricity.
- Energy can be store in \_\_\_\_\_ compounds, too.
  - An important chemical compound that \_\_\_\_\_ use to store and Release energy is **adenosine triphosphate**, abbreviated \_\_\_\_\_.
  - ATP is used by \_\_\_\_\_ types of cells as their \_\_\_\_\_ energy source.
  - ATP consists of:
    1. Adenine
    2. Ribose (a \_\_\_\_\_-carbon \_\_\_\_\_)
    3. 3 phosphate \_\_\_\_\_.

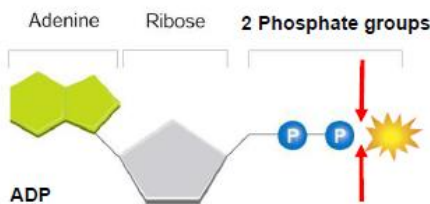


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### Storing Energy

- ADP (adenosine diphosphate) has \_\_\_\_\_ phosphate groups instead of three.
- A cell can \_\_\_\_\_ small amounts of energy by adding a phosphate group to ADP.



### Releasing Energy

- Energy \_\_\_\_\_ in ATP is \_\_\_\_\_ by breaking the chemical \_\_\_\_\_ between the second and third phosphates.

