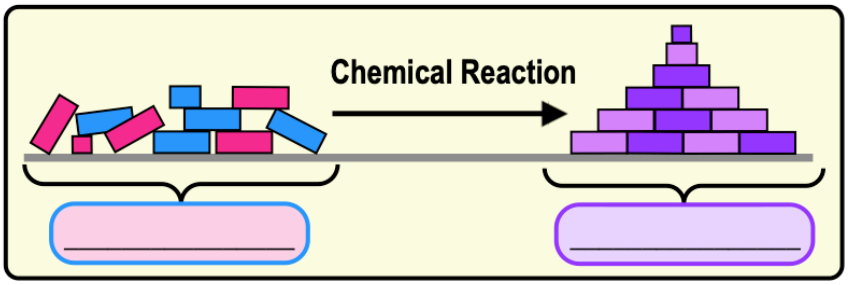
CONCEPT: CHEMICAL REACTIONS

- **Chemical reactions** consist of the *making* and/or *breaking* of _____ *bonds* leading to changes in matter.
  - □ **Reactants**: the _____ material in a *chemical reaction.*
  - □ **Products**: the _____ material in a *chemical reaction.*

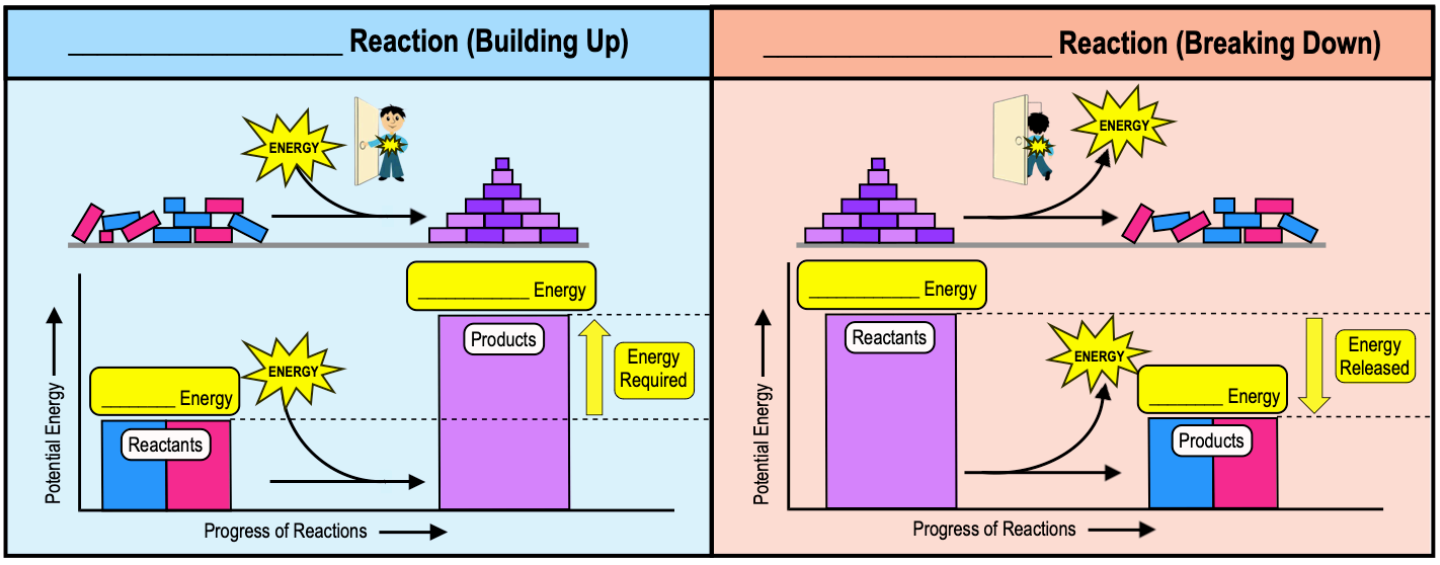
EXAMPLE: Chemical Reaction.



Types of Chemical Reactions

- *Chemical Reactions* are categorized into 2 groups based on _____ requirement:
  1. _____**dergonic Reactions**: requires an *input* of energy (energy **EN**ters the reaction).
  2. _____**ergonic Reactions**: releases energy (energy **EX**its the reaction).

EXAMPLE: Endergonic vs Exergonic Reactions.



PRACTICE: Which of the following statements is true for all exergonic reactions?

a) The products have more total energy than the reactants.

b) The reaction proceeds with a net loss of free energy.

c) The reaction goes only in a forward direction: all reactants will be converted to products.

d) A net input of energy from the surroundings is required for the reactions to proceed.