




## 2.4 Chemical Reactions and Enzymes

### Lesson Objectives

-  Explain how chemical reactions affect chemical bonds.
-  Describe how energy changes affect how easily a chemical reaction will occur.
-  Explain why enzymes are important to living things.



### BUILD Vocabulary

A. The chart below shows key terms from the lesson with their definitions. Complete the chart by writing a strategy to help you remember the meaning of each term. One has been done for you.

Term	Definition	How I'm Going to Remember the Meaning
Activation energy	Energy needed to get a reaction started	
Catalyst	Substance that speeds up the rate of a chemical reaction	
Chemical reaction	A process that changes or transforms one set of chemicals into another	
Enzyme	A protein that acts as a biological catalyst to speed up a chemical reaction	
Product	An element or compound produced by a chemical reaction	
Reactant	An element or compound that enters into a chemical reaction	<i>The word <b>act</b> is found in the word <b>reactant</b>, and during a reaction, the reactants <b>act</b> together to form the products.</i>

B. As you work through this lesson, you may find these terms in the activities. When you need to write a key term or a definition, **highlight** the term or the definition.

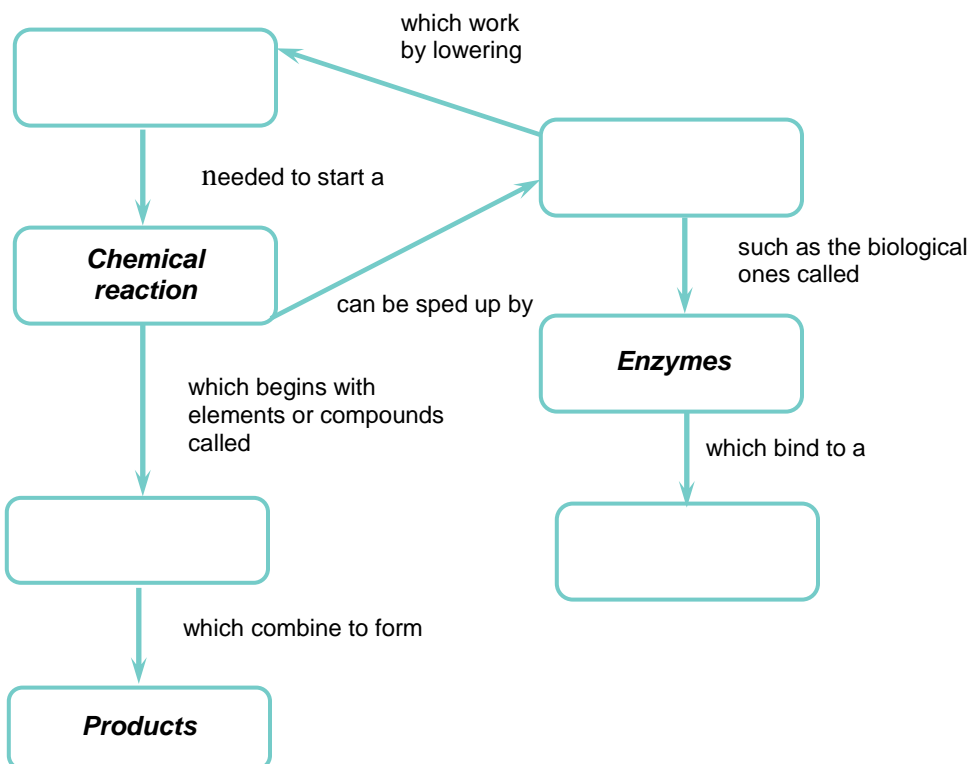
## BUILD Understanding

**Concept Map** A concept map can help you organize information and show how ideas are connected.

The concept map below shows the relationship between vocabulary terms in this lesson. The terms and phrases that go in the concept map are listed in the box below.

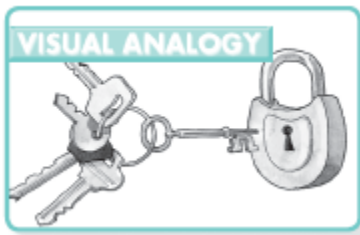
As you read the lesson, complete the concept map. Some terms have been placed in the concept map for you.

**activation energy**
**chemical reaction**
**products**
**substrate**  
**catalysts**
**enzymes**
**reactants**



## BUILD Connections

**Lock and Key** An analogy takes two things that seem to be different and shows how they can be similar.



1. How does the analogy of a lock and key to an enzyme and its substrate help you to understand how enzymes function in the body?

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2. Find a partner. Using the analogy, explain to your partner what the expression “enzymes are specific” means.

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