

# 6 Chemistry in Biology

## 2 Chemical Reactions

TEKS 4(B), 9(C)

### MAIN IDEA

Write the Main Idea for this lesson.

---

---

---

### REVIEW VOCABULARY

process

Recall the definition of the Review Vocabulary term.

*process*

---

### NEW VOCABULARY

chemical reaction

reactant

product

activation energy

catalyst

enzyme

substrate

active site

Use your book to define each term.

*chemical reaction*

---

*reactant*

*product*

*activation energy*

---

*catalyst*

---

*enzyme*

---

*substrate*

*active site*

---

### ACADEMIC VOCABULARY

coefficient

Define *coefficient* to show its scientific meaning.

*coefficient*

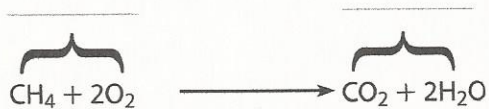
---

## 2 Chemical Reactions (continued)

*Student Edition*, pp. 156–160

*Reading Essentials*  
pp. 59–61

**Label** the sides of the following equation as either products or reactants.



**Calculate** the number of atoms of each element in the chemical equation above. Record the information in the table below.

Element Symbol	Element Name	Number of Atoms (reactant side)	Number of Atoms (product side)

**Analyze** the formula to check to see if it is balanced. Support your reasons.

---

---

**GET IT?** **Explain** why chemical equations must be balanced.

---

---

---

## 2 Chemical Reactions (continued)

**Compare** what happens to energy in exothermic and endothermic reactions by completing the diagram below.

Exothermic Reaction	Endothermic Reaction
During the reaction, energy is _____ _____	During the reaction, energy is _____ _____
As a result, the energy of the product is _____ than the energy of the reactants.	As a result, the energy of the product is _____ than the energy of the reactants.

**Summarize** key characteristics of an enzyme by completing the organizer below.

Composed of:	Purpose:
<b>Compounds</b>	Reusable?
	Activity level affected by:
Participates in how many different types of reactions?	

## 2 Chemical Reactions (continued)

### REVIEW IT!

1. **MAIN IDEA** Identify the parts of this chemical reaction:  $A + B \rightarrow AB$ .

---

2. **Diagram** the energy changes that can take place in a chemical reaction.

---

---

3. **Explain** why the number of atoms of reactants must equal the number of atoms of products formed.

---

---

4. **Identify and investigate** the role of enzymes to living organisms.

---

---

5. For the following chemical reaction, label the reactants and products, and then balance the chemical equation.  $\text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{O}_2$

---

6. Draw a diagram of a roller coaster and write a paragraph relating the ride to activation energy and a chemical reaction.