

**Subject:** Biology

**Topic:** Effects of temperature on enzyme activities

**Level:** S.4

**Learning objectives**

Content:

Students should be able to explain the effects of temperature on enzyme activities.

Language:

Students should be able to write a short paragraph with support given to explain the effects of temperature on enzyme activities using the following sentence pattern:

*When the temperature \_\_\_\_\_, \_\_\_\_\_. Therefore, the reaction rate increases / drops.*

**S.4 Biology**  
**Effects of Temperature on Enzyme Activities**  
**Worksheet 1**

Name: \_\_\_\_\_ Class: \_\_\_\_\_ No.: \_\_\_\_\_ Date: \_\_\_\_\_



**Reading and Writing**

**Activity 1**

1. Read page 44 of your textbook (Certificate Biology, New Mastering Basic Concepts, Book 1)..  
This topic explains how enzyme activities are affected by temperature.
2. Use the information from the text to fill in the table below.
3. Answer the questions the follow.

Temperature range	Cause (enzyme activity)	Effect (reaction rate)
At very low temperature(below 10°C)	Enzyme is _____	Reaction rate is _____
From 10°C to optimum temperature	Enzyme becomes more _____ because it has _____	As temperature increases, _____ _____ _____
At optimum temperature	Enzyme is the _____	Reaction rate is the _____
Above the optimum temperature	Enzyme is _____	As temperature increases, _____ _____

1. Explain **why an enzyme** is more active **as the temperature** increases from 10°C to the optimum temperature.  
When the temperature increases from 10°C to the optimum, the enzyme \_\_\_\_\_.  
\_\_\_\_\_. It moves \_\_\_\_\_ and increase  
the chance of \_\_\_\_\_. Therefore **the reaction** rate increases.
2. Explain why the reaction rate drops when the temperature is above the optimum.  
**When** the temperature is above the optimum, the enzyme is \_\_\_\_\_. The shape  
of \_\_\_\_\_. The substrates \_\_\_\_\_.  
Therefore, \_\_\_\_\_.