

DIGESTION ENZYME ACTION WORKSHEET

GOAL: To explain how digestive enzymes break down food molecules.


1 DIGESTIVE ORGANS & ENZYMES

Match each organ with the main enzyme(s) it produces or where it acts.

ORGAN		ENZYME(S)	
1	Mouth	A	Amylase
2	Stomach	B	Pepsin
3	Pancreas	C	Amylase, Lipase, Proteases
4	Small intestine	D	Maltase, Sucrase, Lactase, Peptidases
5	Large intestine	E	No enzymes (absorbs water)

2 FOOD → NUTRIENTS

Complete the table to show how enzymes break down food molecules.

FOOD MOLECULE	ENZYME	BREAKS DOWN INTO	WHERE IT ACTS
 Starch	_____	_____	_____
 Protein	_____	_____	_____
 Fat	_____	_____	_____
 Sugar (sucrose)	_____	_____	_____

3 ENZYME ACTION CONDITIONS

Use the graphs to answer the questions.

A. At what temperature is enzyme activity highest?

_____ °C

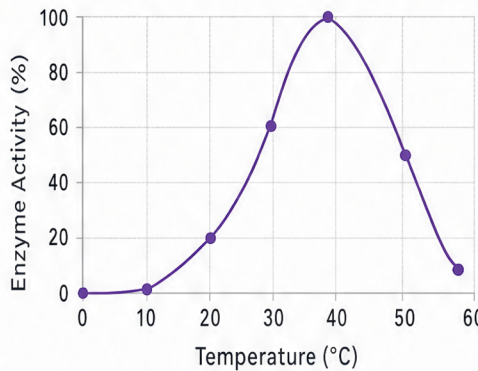
B. At what pH is enzyme activity highest?

C. What happens to enzyme activity when:

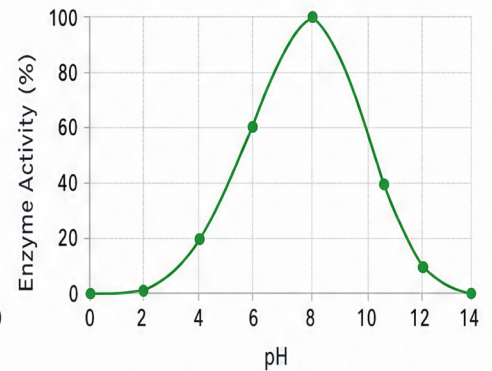
- Temperature is too high?

- pH is too low or too high?

Effect of Temperature on Enzyme Activity



Effect of pH on Enzyme Activity



4 INVESTIGATION PLANNING

You are investigating how temperature affects amylase activity. Complete the plan.

AIM	_____
INDEPENDENT VARIABLE	_____
DEPENDENT VARIABLE	_____
CONTROLLED VARIABLES (2 examples)	1. _____ 2. _____
METHOD (brief steps)	1. _____ 2. _____ 3. _____
PREDICTED RESULT	_____
SAFETY CONSIDERATIONS	_____

USEFUL VOCABULARY



Enzyme

A biological catalyst that speeds up chemical reactions.



Active site

The part of an enzyme where the substrate fits.



Substrate

The food molecule an enzyme acts on.



Product

The new molecules formed after the reaction.



Denaturation

When an enzyme changes shape and stops working.