# C1.1 Enzymes and metabolism

What the Cell · DP Biology · note-taking sheet · SL statements C1.1.1–10

**Name** _____ **Date** _____

**How to use this sheet:** go through the slides and videos with it, then close them and write from memory. Use your own words and add page numbers from the book (pp. 380–395) where you want more detail.

**Guiding questions.** How do enzymes act on, and respond to, other molecules? Which parts of metabolism depend on one another?

## C1.1.1–3 Catalysts and metabolism

Why do cells need enzymes? What is metabolism, and how do enzymes control it?

| | **Anabolic** | **Catabolic** |
|---|---|---|
| What happens | | |
| Examples | | |

## C1.1.4–7 How enzymes work

Draw an enzyme and substrate, before and during binding. Show induced fit, and label the active site.

Why is molecular motion needed? Give an example of an immobilized enzyme or substrate.

Link these three ideas: **active site, specificity, denaturation**.

## C1.1.8 Factors affecting activity

Sketch each graph. Then explain its shape using collisions and denaturation.

| Temperature | pH | Substrate concentration |
|---|---|---|
| | | |

## C1.1.9 Measurements

How do you find an initial rate from a graph? Which units are used?

## C1.1.10 Activation energy

Sketch an energy graph, with and without an enzyme. Label the activation energy in each.

## Before you finish

Tick the ones you can explain without notes. Circle anything to ask about.

- ☐ Enzymes as catalysts
- ☐ Metabolism
- ☐ Anabolic and catabolic
- ☐ Active site
- ☐ Induced fit
- ☐ Collisions
- ☐ Denaturation
- ☐ Three factors
- ☐ Initial rate
- ☐ Activation energy