

Enzyme action and activity What is an enzyme?	Enzyme action and activity What is the active site?
Enzyme action and activity Why are enzymes specific?	Enzyme action and activity What does denatured mean?
Enzyme action and activity Effect of increasing temperature up to the optimum	Enzyme action and activity Why does the rate fall above the optimum temperature?
Enzyme action and activity Why does the rate level off as substrate concentration rises?	Enzyme action and activity What happens to enzyme activity as pH moves away from the optimum?

The region of an enzyme where the substrate binds, with a shape complementary to the substrate.

A protein that acts as a biological catalyst, speeding up a reaction without being used up.

The enzyme's shape, including the active site, has permanently changed, so the substrate no longer fits.

Only a substrate with a shape complementary to the active site can fit, so each enzyme catalyses one type of reaction.

The enzyme is denatured as the active site changes shape.

The rate increases, because particles have more kinetic energy and collide more often.

The rate decreases, and at extreme pH the enzyme is denatured.

All the active sites are occupied, so adding more substrate makes no difference.

Enzyme action and activity

**pH core practical: how do you know
the starch has gone?**

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pH core practical: variables to control

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Rate of reaction equation

Temperature, volume and concentration of enzyme, and volume and concentration of starch.

The iodine solution stays orange-brown instead of turning blue-black.

rate = amount of product formed $\div$ time taken. For example cm³/s.