Proteins

Some proteins function as Enzymes

Enzymes speed up chemical reactions

How do enzymes work?

Activation energy = the amount of energy needed to start a chemical reaction

Enzymes LOWER the activation energy.

Chemical reactions put things together or break them apart

Example

A synthesis reaction

Molecule “A” + molecule “B” = molecule “C”

Or

A decomposition reaction

“C” = “A” + “B”

Glucose + Fructose 🡪Sucrose

Sucrose 🡪 Glucose + Fructose

Reactants are what you start with (circle)

Products are what you end with (underline)

The ***shape*** of an enzyme gives it its specific function

Examples:Sucrase breaks down sucrose. 

CHANGE the SHAPE of an enzyme IT STOPS WORKING

Denature – to destroy the shape of an enzyme

What can denature a protein?

HEAT or COLD

pH change

Chemicals

What gives an enzyme its shape?

The 4 structures of Proteins

Primary structure – the chain of amino acids

Secondary structure – hydrogen bonds between amino acids

Tertiary structure – permanent bonds between amino acids

Quartenary structure – 2 or more chains coming together

Vocab – HYDROGEN BOND – a weak bond between molecules

Examples – water, amino acid, DNA