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Types of Reactions

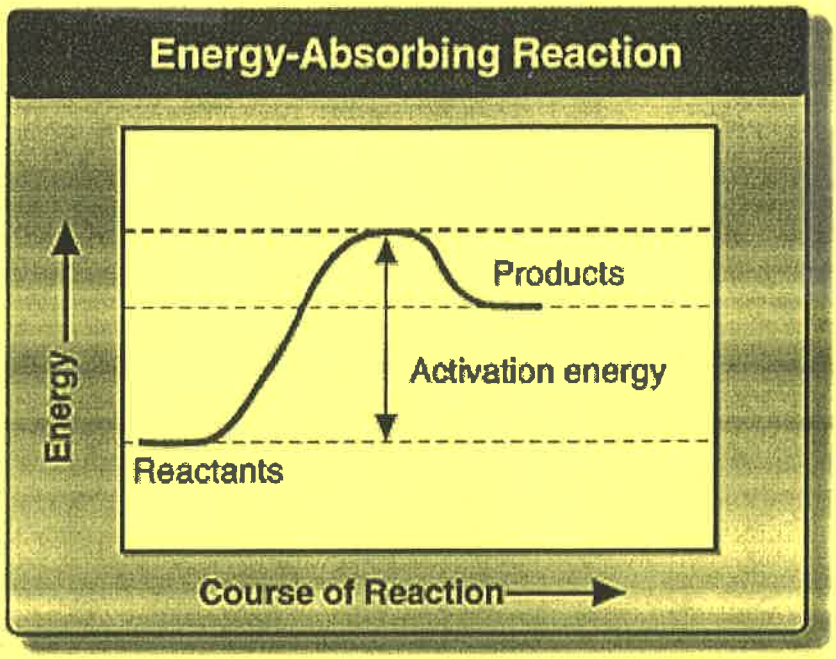
Energy Releasing & Energy Absorbing

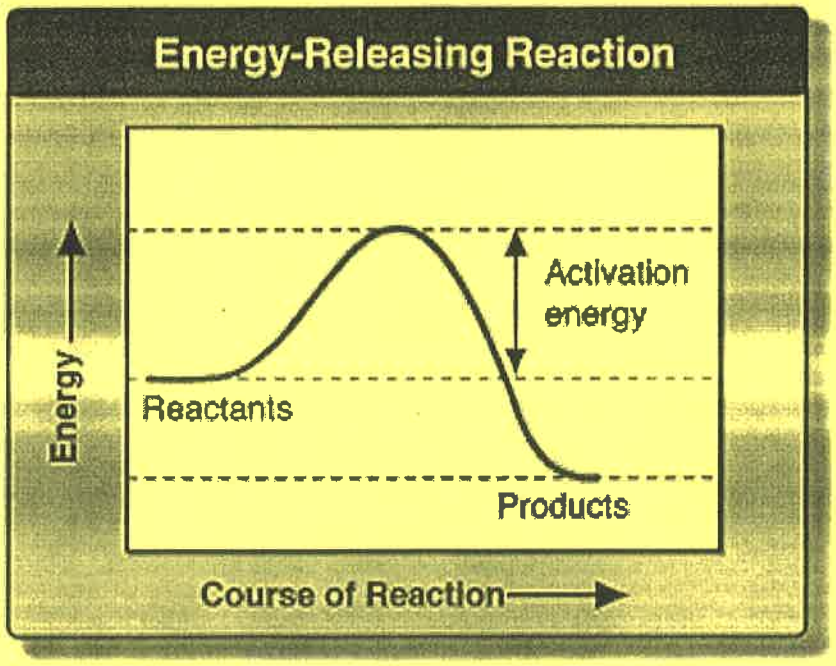
Endothermic Reaction →

Products have more energy than reactants

Exothermic Reaction →

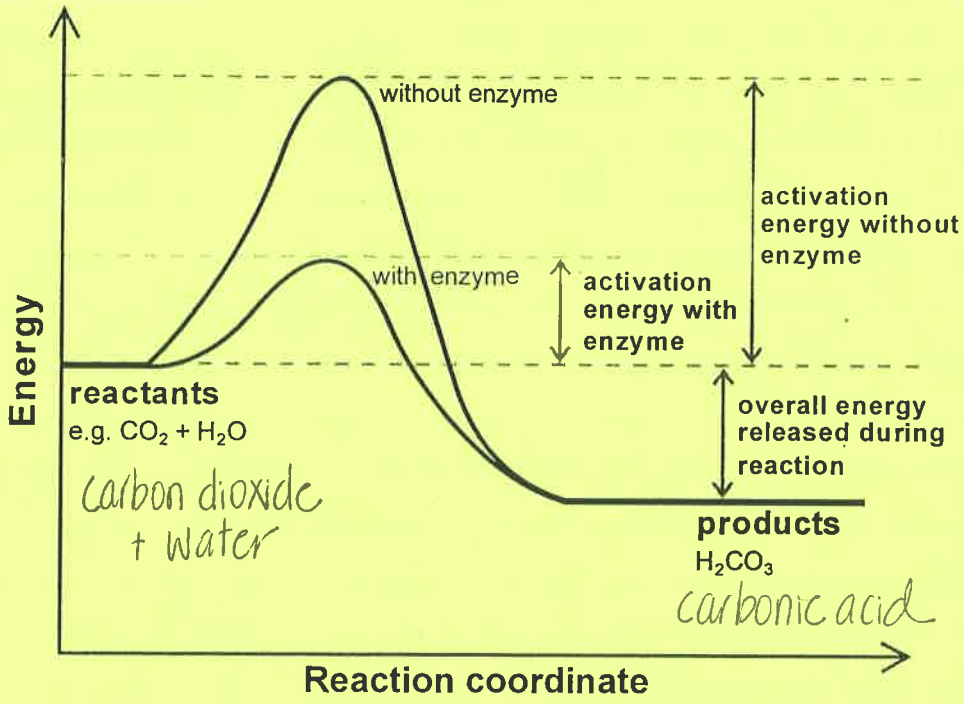
Products have less energy than reactants





Bonds Absorb Energy when breaking & Release Energy when Forming.

Enzymes lower the energy needed to begin the reaction.



Enzymes are catalysts - substances that speed up the rate of a chemical reaction but are not consumed or changed by the reaction.

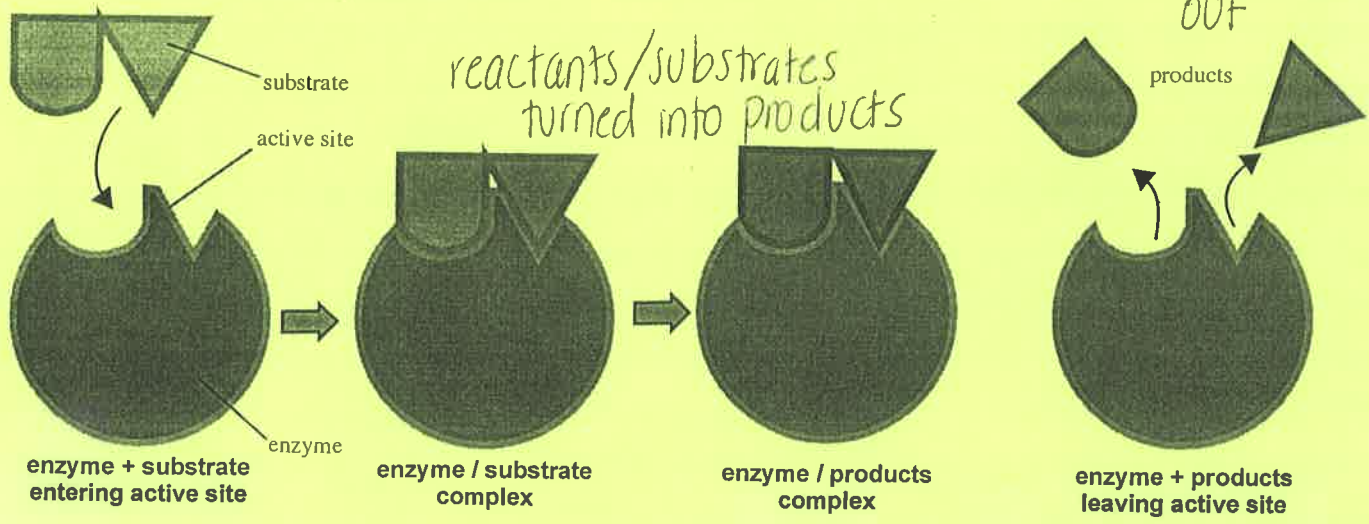
Enzymes are very specific + generally only catalyze one reaction.

what goes in

reactants = substrates

what comes out

reactants/substrates turned into products



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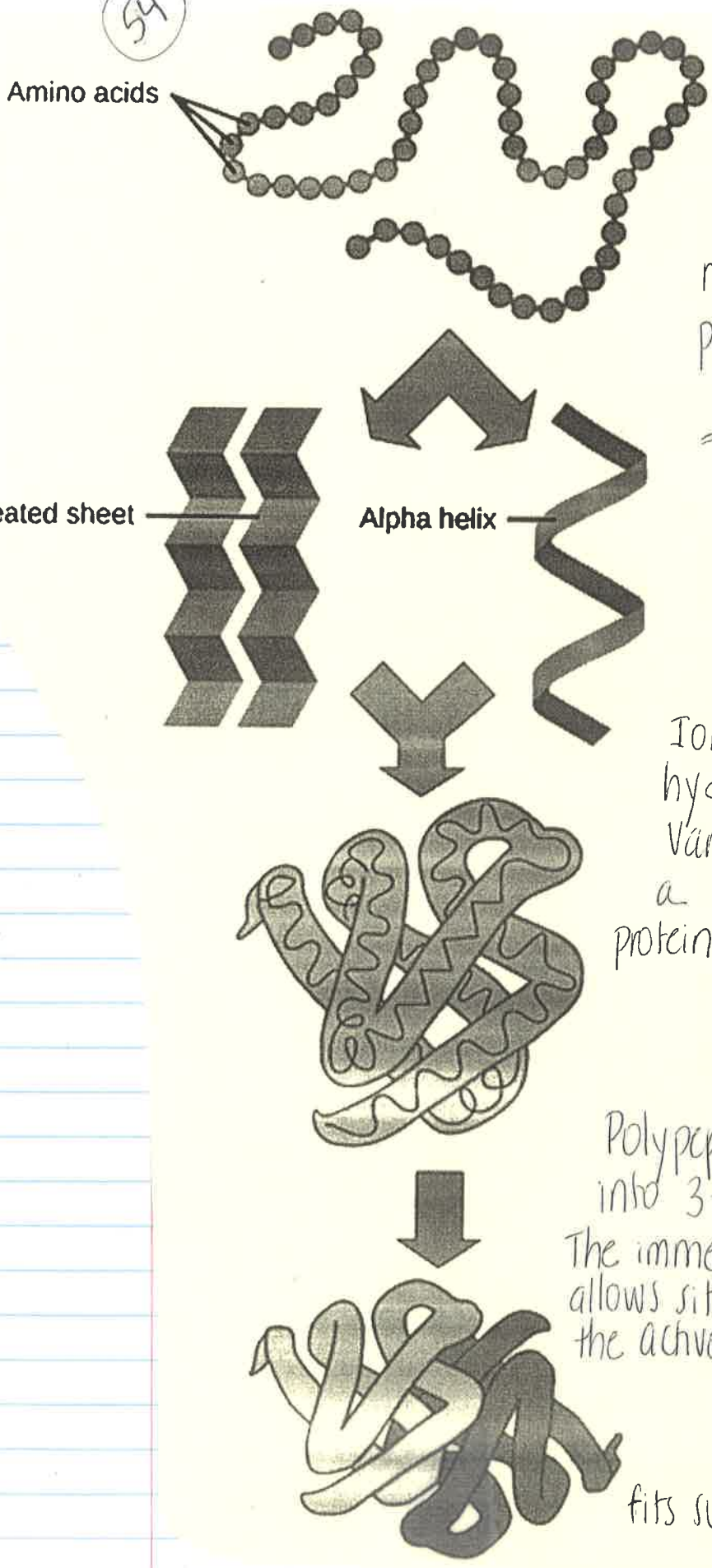

Primary protein structure
sequence of a chain of animo acids

monomer = amino acid
polymer = many amino acids or polypeptide
= protein

Secondary protein structure
hydrogen bonding of the peptide backbone causes the amino acids to fold into a repeating pattern

Ionic + covalent bonds, hydrogen bonds, and Van der Waals Forces shape a protein.

Tertiary protein structure
three-dimensional folding pattern of a protein due to side chain interactions

Polypeptides bend + twist into 3-D shapes - not linear. The immense diversity of shape allows site specificity such that the active site of an enzyme fits substrates precisely.

Quaternary protein structure
protein consisting of more than one amino acid chain