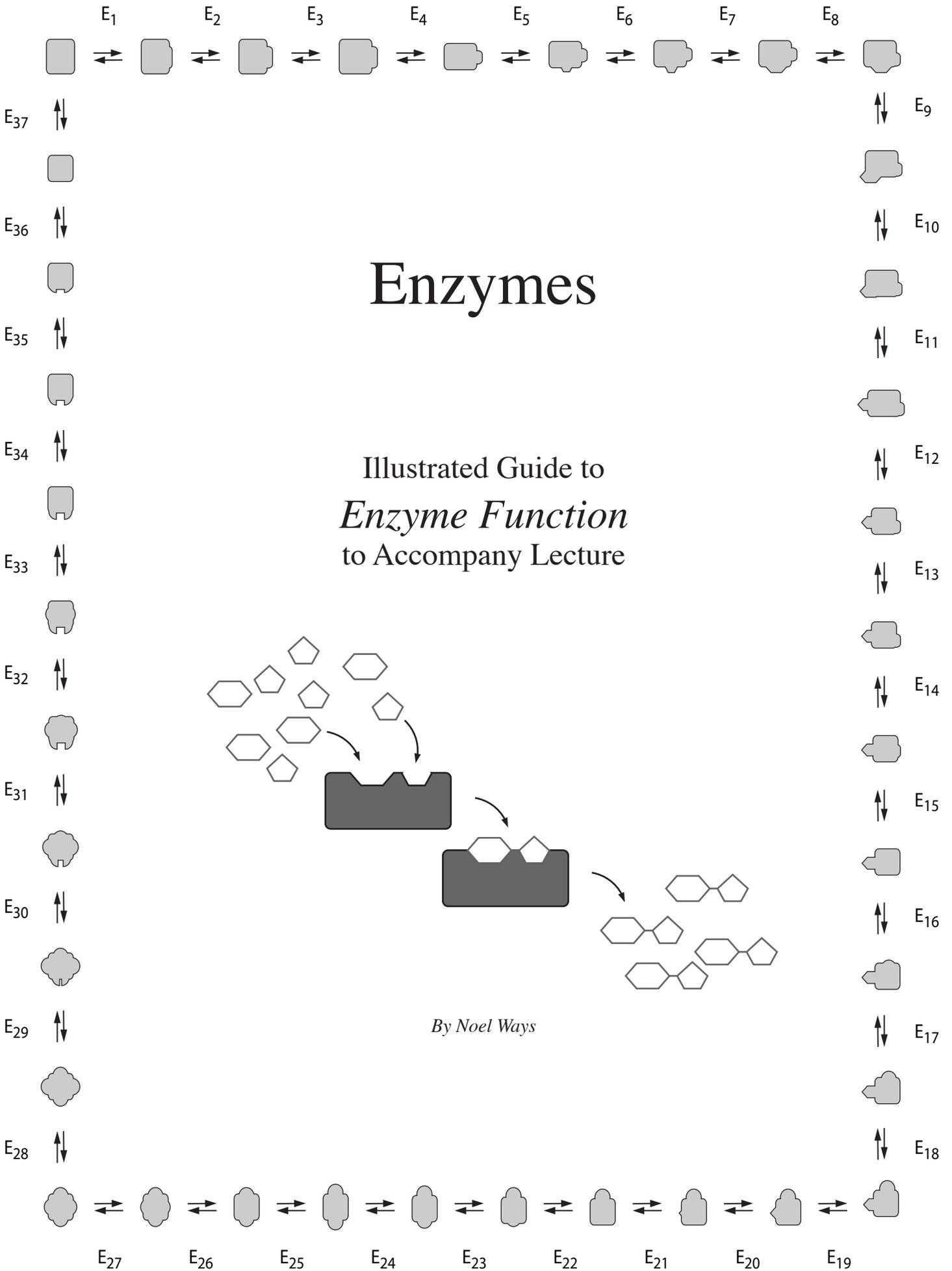


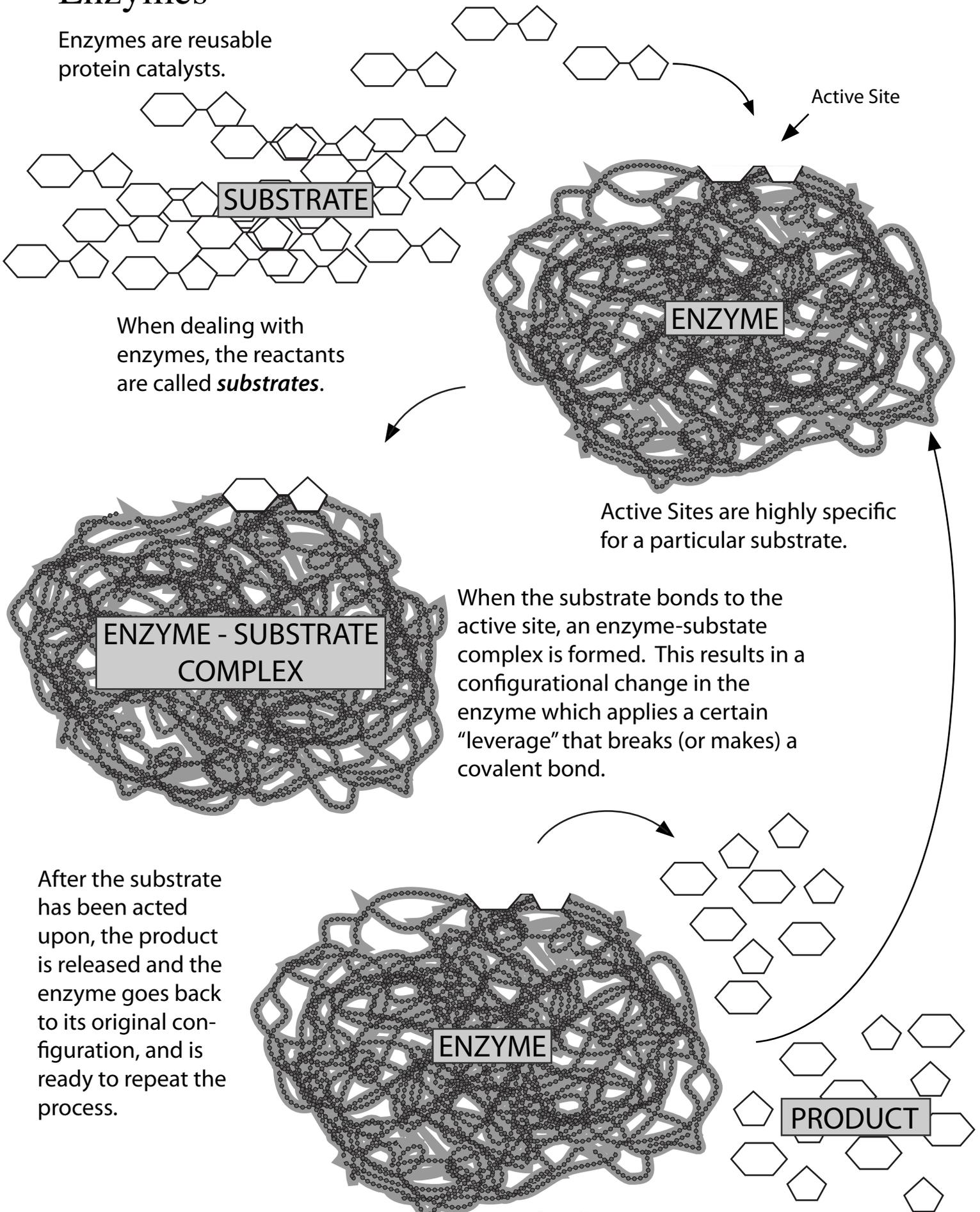
Enzymes

Illustrated Guide to
Enzyme Function
to Accompany Lecture



Enzymes

Enzymes are reusable protein catalysts.



When dealing with enzymes, the reactants are called *substrates*.

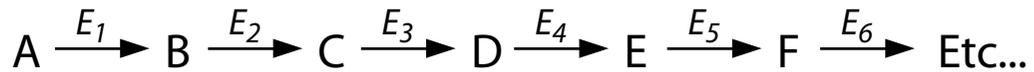
Active Sites are highly specific for a particular substrate.

When the substrate bonds to the active site, an enzyme-substrate complex is formed. This results in a configurational change in the enzyme which applies a certain "leverage" that breaks (or makes) a covalent bond.

After the substrate has been acted upon, the product is released and the enzyme goes back to its original configuration, and is ready to repeat the process.

We define Metabolism as the sum total of all biochemical reactions that occur in the body. These reactions occur in many sequential and interconnected pathways.

No step in any one of these metabolic pathways occurs without the presence of a specific enzyme.



If a particular enzyme is absent or damaged, the entire metabolic pathway comes to a stop.



An enzyme can always be recognized by the suffix -ase.

For example:

- **Lactase** will digest or synthesize Lactose
- **Maltase** will digest or synthesize Maltose
- **Sucrase** will digest or synthesize Sucrose
- **Lipase** will digest or synthesize Lipids
- **Protease** will digest or synthesize Proteins

As steps in metabolic reactions are reversible, it is not surprising that the same enzyme may catalyze a reaction in either direction.

