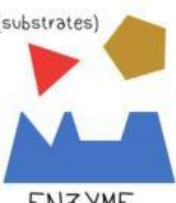


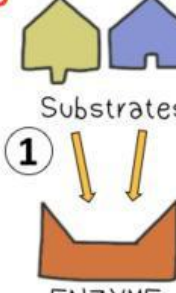

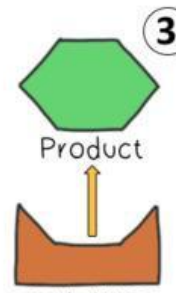
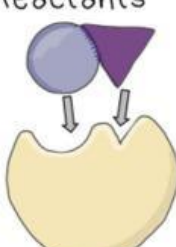

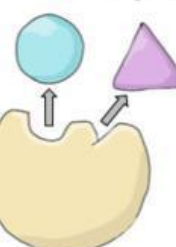
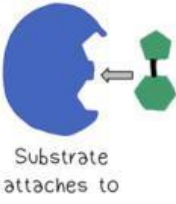
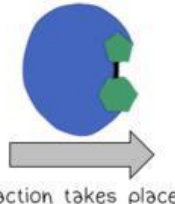

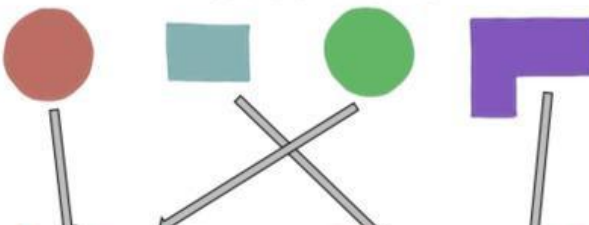


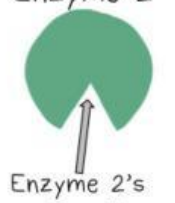




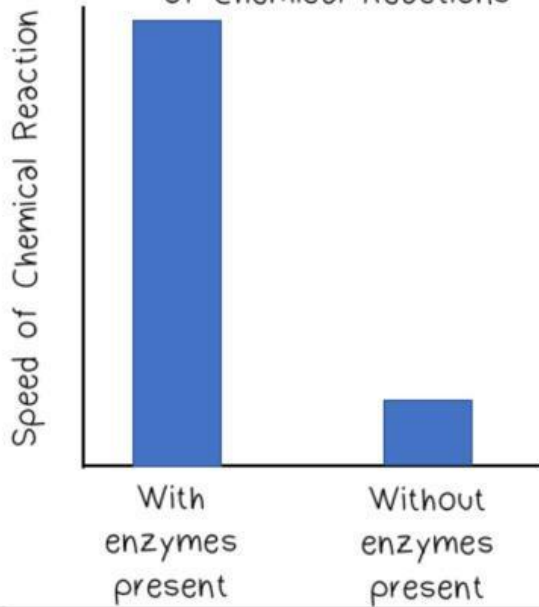


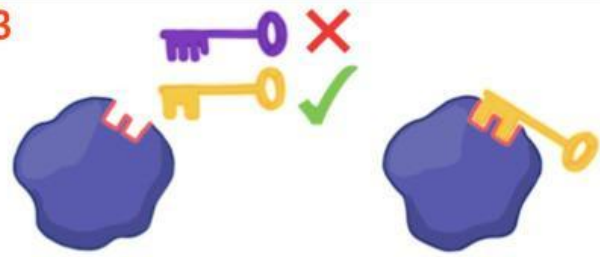
<p>1</p> <p style="text-align: center;">CHEMICAL REACTION</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> reactants \longrightarrow products </div>	<p>2</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">Reactants</div> <div style="border: 1px solid black; padding: 2px;">Product</div> </div> <p style="text-align: center;">(left side of the arrow) (right side of the arrow)</p> <p style="text-align: center;">$\text{NH}_3 + \text{HCl} \longrightarrow \text{NH}_4\text{Cl}$</p>
<p>3</p> <p style="text-align: center;">Reactants- the starting molecules Products- the final molecules</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">$6\text{CO}_2 + 6\text{H}_2\text{O}$</div> <div style="margin-right: 10px;">\longrightarrow</div> <div style="border: 1px solid black; padding: 5px; margin-left: 10px;">$\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$</div> </div> <p style="text-align: center; margin-left: 100px;">\uparrow chemical change</p>	<p>4</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;"> $2\text{H}_2 + \text{O}_2$ Reactants (Substrates) </div> <div style="margin-right: 20px;">\longrightarrow</div> <div style="margin-left: 20px;"> $2\text{H}_2\text{O}$ Products </div> </div>
<p>5</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Reactants (substrates)</p>  <p>ENZYME</p> </div> <div style="text-align: center;"> <p>\longrightarrow</p>  <p>ENZYME</p> </div> <div style="text-align: center;"> <p>Product</p>  <p>ENZYME</p> </div> </div>	<p>6</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Substrates</p>  <p>1 ENZYME</p> </div> <div style="text-align: center;"> <p>2</p>  <p>ENZYME + Substrates</p> </div> <div style="text-align: center;"> <p>3</p>  <p>Product ENZYME</p> </div> </div>
<p>7</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Reactants</p>  </div> <div style="text-align: center;"> <p>Enzyme-Substrate Complex</p>  </div> <div style="text-align: center;"> <p>Products</p>  </div> </div>	<p>8</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Substrate attaches to enzyme</p> </div> <div style="text-align: center;"> <p>\longrightarrow</p>  <p>Reaction takes place</p> </div> <div style="text-align: center;">  <p>Products leave enzyme</p> </div> </div>
<p>9</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Reactant Molecules</p>  </div> <div style="text-align: center;">  <p>ENZYME ENZYME</p> </div> </div>	<p>10</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Enzyme 1</p>  <p>Enzyme 1's active site</p> </div> <div style="text-align: center;"> <p>Enzyme 2</p>  <p>Enzyme 2's active site</p> </div> <div style="text-align: center;"> <p>Enzyme 3</p>  <p>Enzyme 3's active site</p> </div> </div> <p>11</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Enzyme 1</p>  </div> <div style="text-align: center;"> <p>Enzyme 2</p>  </div> <div style="text-align: center;"> <p>Enzyme 3</p>  </div> </div>

12

Enzyme Effect on the Speed of Chemical Reactions



13



The active site matches the yellow key

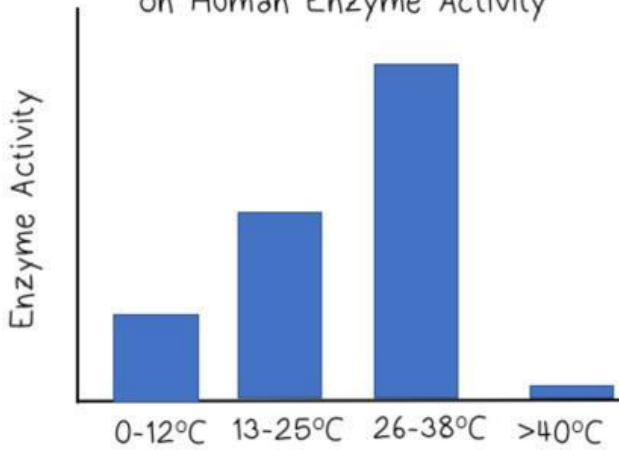
14

Enzymes work like a lock & key



15

The Effect of Temperature on Human Enzyme Activity



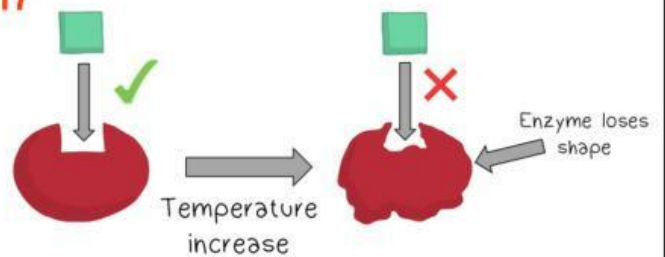
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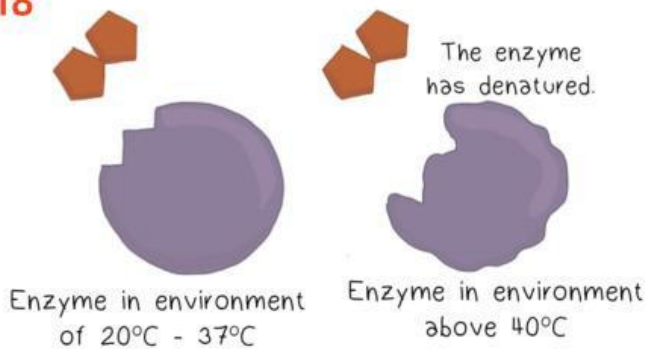
Enzyme in environment of 15°C - 30°C

Enzyme in environment above 32°C

17



18



19

