

## 2.5 Enzymes

### Enzyme Action

Define the following terms

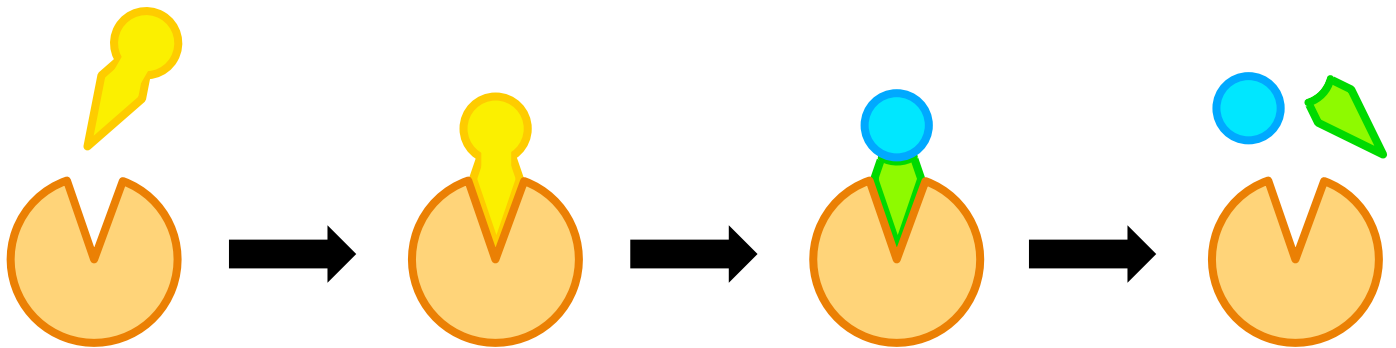
Enzyme: .....

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Substrate: .....

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Outline the steps in enzymatic binding and catalytic activity with the aid of the following diagram



1. ....

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2. ....

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3. ....

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4. ....

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Identify factors that can affect an enzyme's molecular motion and collision with a substrate

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*Distinguish between the 'lock and key' and 'induced fit' models of enzyme specificity*

Lock and Key Model:

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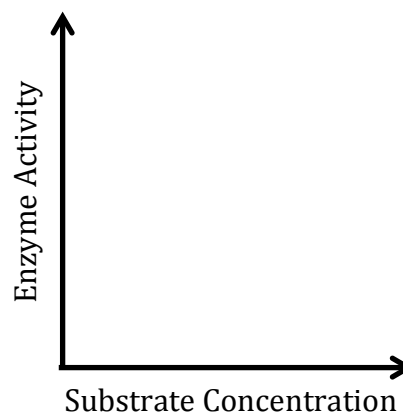
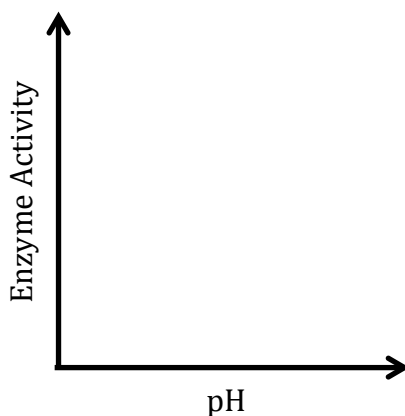
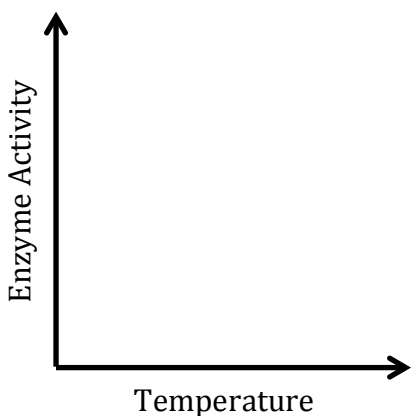
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Induced Fit Model:

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Explain the effect of different factors on enzyme activity



Temperature: .....

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pH: .....

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Substrate Concentration: .....

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## Enzyme Application

*Explain the benefits of immobilized enzymes in industry, with examples*

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*Outline the production of lactose-free milk and its advantages*

Production of Lactose-Free Milk:

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Advantages of Lactose-Free Milk:

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*Suggest ways of measuring the following enzyme-catalysed reactions*

1. The conversion of hydrogen peroxide to oxygen gas (by catalase)

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2. The breakdown of starch into maltose (by diastase)

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3. The digestion of pectin in cell walls (by pectinase)

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