

Enzyme Lab

Investigate enzyme reactions in both a qualitative and quantitative manner.

Product Features

Control on All the Parameters: Enzyme Concentration, Substrate Concentration, Temperature, and pH	Extensive Teacher Resources
9 Student Starter Experiments	4 Substrates and 11 Products to Investigate
Experiments include pH – Trypsin and Pepsin Activity	8 Enzymes to Choose from Including Catalase and Proteases

Grade Level

High School • College • University

Detailed Product Information:

This simulation is designed to enable students to investigate enzyme reactions in both a qualitative and quantitative manner. This program provides the opportunity to simulate a wide variety of enzyme reactions quickly. Enzyme Lab encourages the use of scientific method, experimental design, and discovery learning. This extensive package fits well into both the biology and chemistry study areas.

Students can work under Research Lab conditions for free experimentation or in a Controlled Experiment Lab environment. Fifteen detailed lab activities cover: Human Amylase and Temperature Variation; Temperature Variation and Enzymes; pH and Enzyme Activity; Effects of Enzyme Concentration; and Effects of Substrate Concentration.

Research Lab

Encourages the use of scientific method and experimental design and discovery learning. This area of the software enables you to change: The Enzymes, Substrate, Product Examined, Temperature, pH, Enzyme Concentration, and Substrate Concentration.

Research Lab features include:

- Control over all the parameters.
- The choice of 8 enzymes including a catalase, amylases, proteases and lipase.
- Select from 4 substrates.
- Examine 9 products.
- Show from 1 to 6 data types on your graphs, including reaction rate.
- During the experiment change: Substrate Concentration, Enzyme Concentration, pH, Temperature, Product being examined, and Graph types.
- Print graphs and data.
- Save experiments or data in the form of a text file to disk.

Controlled Lab:

Enables your students to observe and analyze enzyme behavior while only one condition is being changed. The effects of pH, Temperature, Enzyme concentration, and Substrate concentration variation are easily demonstrated.

Controlled Experiment Lab features include:

- Preselected experiments where the computer holds all parameters
- Constant and changes only one parameter
- Human Amylase & Temperature Variation
- Temperature Variation and Enzymes
- pH and Enzyme Activity

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- Effects of Enzyme Concentration
- Effects of Substrate Concentration

Enzymes studied include: Pepsin; Trypsin; Catalase; amylases; hydrolases; lipases

Computer simulation experiments:

- Enzymes and their Products
- Optimal Temperature of Enzymes
- Optimal pH of Different Enzymes
- Activity of Catalase
- Human Amylase and Temperature Variation
- Temperature Variation and Enzymes
- pH and Enzymes Activity
- Enzyme Concentration
- Substrate Concentration

Classroom studies:

- Enzymes as Catalysts
- Enzyme Structure
- Enzyme Action
- Factors Affecting Enzyme Action
- Practical Uses for Enzymes
- Enzyme Nomenclature

The extensive manual includes 9 ready to use experiments detailed in the blackline masters as well as 6 important background information activities, saving you time and effort in lesson preparation.

System Requirements:

Windows

Windows 3.1 or later
486/33 MHz processor or better
16 MB RAM
256 color 640 x 480 SVGA monitor
4X CD-ROM driver
16 bit sound card recommended

List Price:

Enzyme Lab, WIN CD, Single User
Item: 99423701 Price: \$79.00

Enzyme Lab, WIN CD, 5 User
Item: 99423705 Price: \$159.00

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About Tangent

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