

What are Enzymes Made Of?

Explanation Activity

The post-lab activity is the explanation phase of the module.

Go over the questions that were posed in the exploration activity (*Should You Put Fresh or Canned Pineapple in Gelatin?*). This is a good time to distinguish between inferences and observations. The concept of qualitative testing should be identified – if a change occurs, it is a positive test result. If not, it is a negative result. Students frequently hear about this type of testing (he tested positive for strep throat, for example) but do not have a practical understanding of what it means.

Question 1

Does pineapple contain an enzyme that digests protein? **Yes [Note: Some students may state that the enzyme is only in fresh pineapple.]**

Support your answer with observations made during the laboratory investigation. **The plain gelatin that had fresh pineapple in it did not solidify. The plain gelatin (without pineapple) did solidify. [This is a good time to identify the control & variable treatments in a lab activity.]**

Question 2

How do your observations of gelatin + fresh pineapple differ from your observations of gelatin + cooked pineapple? **The gelatin + fresh pineapple did not solidify while the gelatin + cooked pineapple did solidify.**

Explain why they differ. **The heat *denatured* the enzyme in the pineapple. [This is a good time to discuss the effects of heat on proteins if it has not been covered before.]**

Question 3

What can you *infer* about the ingredients in meat tenderizer? **Meat tenderizer contains a *protease*. [The *ase* suffix denotes an enzyme; students can be asked to defend their answers based on information obtained in class from the previous answers.]**

Closure

Return to the list of items that were developed by the students during the brainstorming activity. Confirm or reject items that were dealt with by the lab. The explanation activity can be closed with a summary of the structural properties of an enzyme.