Enzyme Inquiry Lab

Goal: Determine what factor(s) affect enzyme activity

Supplies:

Raw Potatoes

Boiled potatoes

Cold potatoes

Salt

Lemon juice

Paper plates

Hydrogen peroxide

Directions: Design a lab to test the effects of pH, salt, and temperature on enzyme activity in potatoes.

Background: read & watch videos [potatoes and catalase](http://practicalbio.blogspot.com/2012/03/easy-enzyme-experiment-potato-catalase.html) , [enzymes are proteins](http://science.howstuffworks.com/life/cellular-microscopic/cell2.htm) and [proteins and denaturation](http://highered.mheducation.com/sites/9834092339/student_view0/chapter3/protein_denaturation.html)

Data: Must have data in at least two of the following forms: bar graphs, line graphs, stem and leaf plots, circle graphs, histograms, box and whisker plots, scatter plots, cumulative frequency (ogive) graphs

Data Analysis:

Student Opinion:

Probing Questions:

1. Predict what would happen if a five ounce bird tried to carry a one pound coconut.
2. Draw and label the chemical structure of the monomer of proteins.
3. Predict at least two other organisms that could contain catalase, besides potatoes, with a rationale.
4. Predict what happened to the catalase at a molecular level under the conditions of the lab.
5. How does temperature and pH affect the reaction rate of catalase? Propose a way to **refine** your experiment to find the **exact**, or OPTIMAL pH and temperature of catalase.