Enzyme Catalysis on a Shoestring

Materials needed:

- Plastic pipette with bulb end cut off
- Scissors
- Test tube and one hole stopper to fit
- 10 mL plastic graduated cylinder
- 100 mL plastic graduated cylinder
- Hydrogen peroxide (3 percent from grocery stop diluted by half with distilled water)
- Catalase source (1 package of yeast in 250 mL of warm water will work well)
- Stirring rod and beaker (or spoon and cup) to mix yeast and water
- Plastic container (like a plastic shoebox) filled 2/3 full with water
- Stopwatch or timer
- Goggles to protect eyes
- For investigating your own question: Ice, hot water bag, vinegar, baking soda, pH paper, potato and other plant material.

Assemble equipment

1. Place pipette in stopper with tapered side first. Press for a snug fit. Cut off bulb end.
2. Fill shoebox container with water
3. Fill small graduated cylinder with water. Place thumb over cylinder mouth and invert. Place in water of shoebox container and remove thumb.

Investigate the general procedure

4. Place very small amount of H_2O_2 in test tube.
5. Add desired amount of enzyme to test tube, insert stopper, place in water.
6. Bend and place open end of plastic pipette into mouth of graduated cylinder to collect gas.
7. Bubbles of oxygen gas will collect in the graduated cylinder.

Your Questions

Get approval from your teacher before carrying out your plan. Ask and answer a question about this system using provided materials. Explain and provide factual evidence to support your explanation biologically and mathematically. Present in the format of your choice.