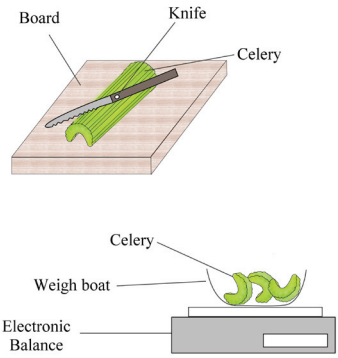


4.3 (b) To investigate the effect of pH on the rate of catalase activity

1



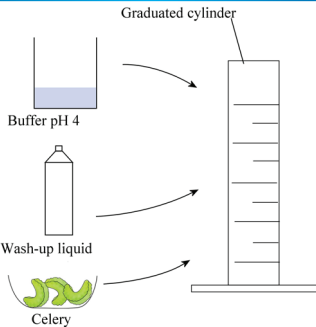
Board
Knife
Celery

Celery
Weigh boat
Electronic Balance

Finely chop the celery.
Weigh 5 g of the chopped celery.

Detailed description: The diagram shows a person using a knife to chop a piece of celery on a wooden board. Below, a small amount of chopped celery is placed in a white weigh boat, which is sitting on a grey electronic balance.

2

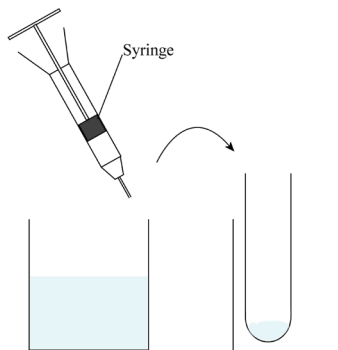


Graduated cylinder
Buffer pH 4
Wash-up liquid
Celery

Add 20 ml of buffer pH 4, one drop of washing-up liquid and 5 g of celery into a graduated cylinder.

Detailed description: A graduated cylinder is shown with three arrows pointing to it from a beaker of blue liquid labeled 'Buffer pH 4', a bottle of 'Wash-up liquid', and a small pile of green 'Celery'.

3

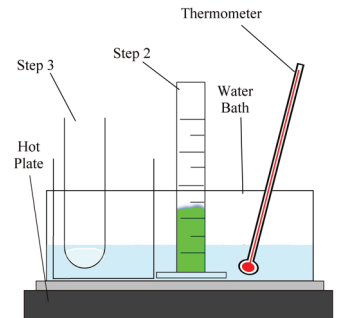


Syringe

Add 2 ml of hydrogen peroxide to a boiling tube.

Detailed description: A syringe is shown injecting a dark liquid into a boiling tube. The boiling tube is held in a rack and contains a small amount of blue liquid.

4

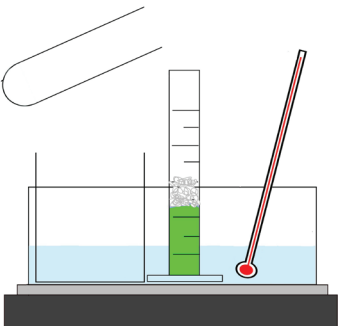


Thermometer
Step 3
Step 2
Water Bath
Hot Plate

Place the graduated cylinder and the boiling tube in a water bath at 25°C.

Detailed description: A boiling tube and a graduated cylinder are placed in a water bath. A thermometer is in the water bath. The setup is on a hot plate. Labels 'Step 2' and 'Step 3' point to the boiling tube and graduated cylinder respectively.

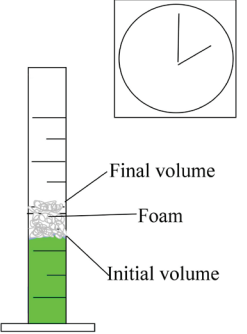
5



Add the hydrogen peroxide into the graduated cylinder and record the volume immediately.

Detailed description: A boiling tube is tilted to pour its contents into the graduated cylinder. The graduated cylinder is in the water bath.

6



Final volume
Foam
Initial volume

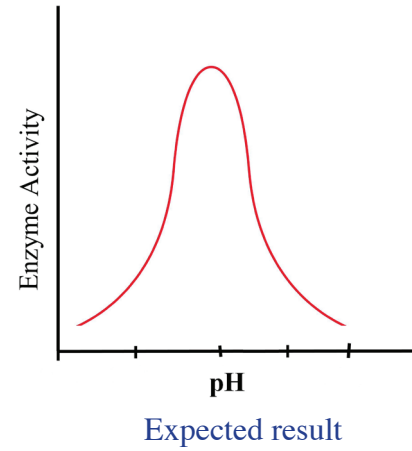
Time for 2 minutes and record the final volume.

Detailed description: The graduated cylinder is shown with a layer of white foam on top of the green liquid. A clock icon is shown in the top right corner. Labels 'Final volume', 'Foam', and 'Initial volume' point to the top of the foam, the foam itself, and the green liquid respectively.

7

Repeat the steps for
different pH buffer solutions
e.g. 6, 7, 9, 10.

8



Results

| pH of buffer | Initial volume (ml) | Final volume (ml) | Volume of foam produced (ml) |
|--------------|---------------------|-------------------|------------------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Always remember – Leave time to tidy up

This page can be printed in colour from the accompanying DVD