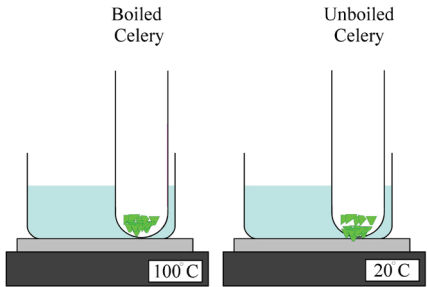


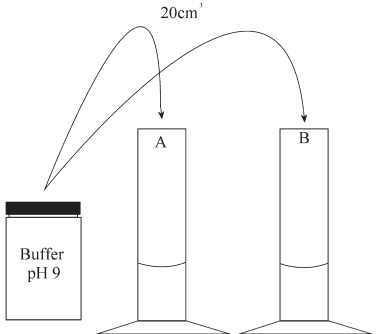
## 4.5 (b) To investigate the effect of heat denaturation on catalase activity

**1**



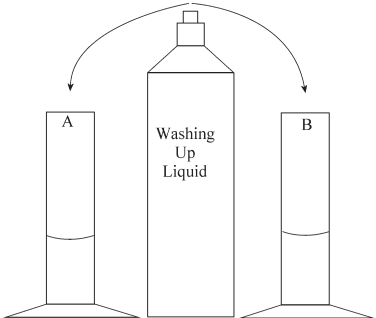
Put 5 g of chopped celery into two boiling tubes in water baths at 100°C and 20°C for 10 minutes. Remove and cool.

**2**



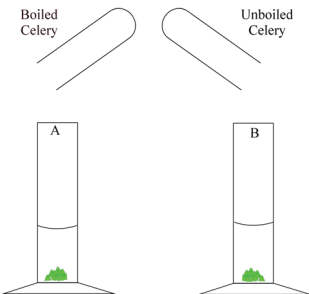
Add 20 ml of buffer pH 9 to two graduated cylinders.

**3**



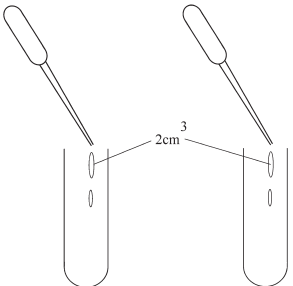
Add one drop of washing up liquid to each graduated cylinder.

**4**



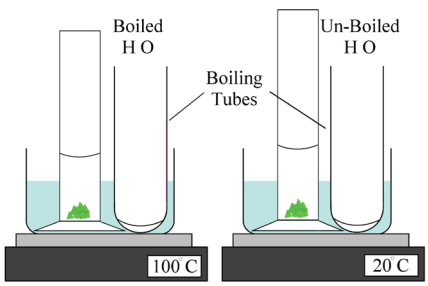
Add the 5 g of boiled celery to one cylinder and label 'A'. Add the 5 g of un-boiled celery to the other cylinder and label 'B'.

**5**



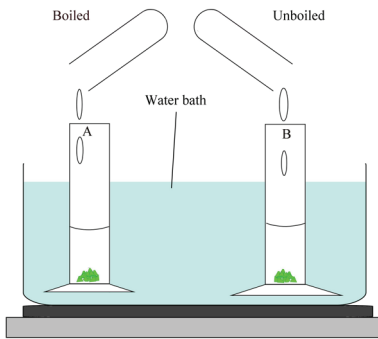
Add 2 ml of hydrogen peroxide to two new boiling tubes. Place one tube in the 100°C water bath and the other in the 20°C bath

**6**



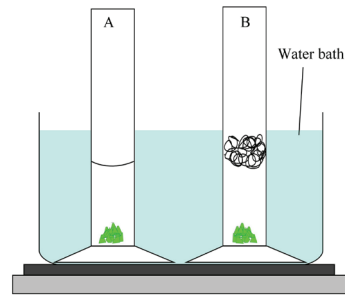
Stand cylinders and boiling tubes into the water bath until the desired temperature is reached in both boiling tubes.

7



Add the hydrogen peroxide from each boiling tube to the corresponding graduated cylinder.

8



Expected result: Note the presence or absence of foam in each graduated cylinder.

### Table of results

	Unheated enzyme	Heated enzyme
Time taken for blue/black colour to disappear		

**Always remember – Leave time to tidy up**

*This page can be printed in colour from the accompanying DVD*