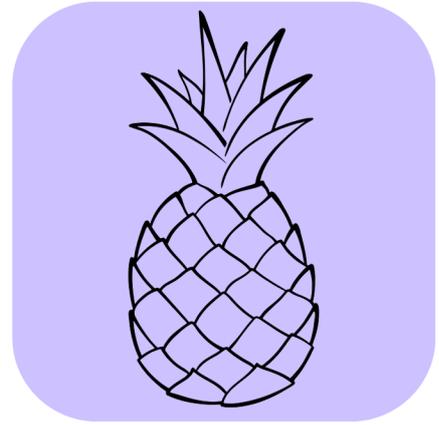


COOL EXPERIMENTS



How do enzymes work?

Enzymes are chemicals that are found inside living things like humans and plants. They play an important role in our bodies, breaking down substances into smaller, more usable units. For example, enzymes in the digestive system break up chemicals in the food we eat so can absorb the nutrients. We also have an enzyme in our saliva that helps us break down carbohydrates into sugars so we can use the sugar for energy. There are lots of different enzymes that are responsible for breaking down different things in our bodies.

Preparation time: 10 minutes + overnight

Experiment set up time: 15 minutes

Experiment run time: 30 minutes - 3 hours

You should be able to see some results after 20 minutes but for best results leave the jelly as long as you can!

You will need:

- fridge
- 1 x packet of jelly
- water (hot and cold)
- 3 x clear cups or beakers
- 3 x spoons
- chopped fresh pineapple
- chopped fresh strawberries

Note: The fruit must be fresh for the experiment to work!

Before you start

In this experiment you will be investigating how a group of enzymes in pineapple called bromelain, can break down other substances by testing how jelly sets with and without pineapple!



Hypothesis

The jelly with fresh pineapple will dissolve into a liquid more easily than the plain jelly.

Step 1

Prepare your jelly in a jug according to the packet instructions

Step 2

When cool, pour the jelly into three clear cups

Step 3

Leave in the fridge to set overnight

Note: Steps 1-3 can be completed the night before so your jelly is ready to go in your lesson!

Step 4

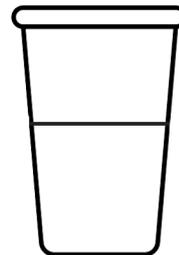
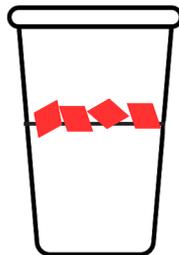
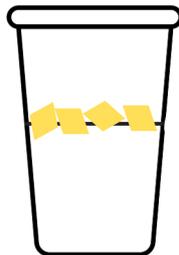
Chop up your fruit into small pieces and set aside ready to add to your jelly cups.

Step 5

On 1 jelly place enough chopped pineapple to cover the top,

Step 6

Do the same with the strawberries on the next jelly cup and leave 1 jelly plain.



Step 7

Write down your observations of each cup. Check the cups every 20 minutes for as long as you can and note your observations each time.

What's happening?

Over time you should see that the jelly containing the pineapple pieces dissolves into a liquid. Jelly contains gelatine which is made out of a protein called collagen. The enzymes in pineapple can break down the collagen protein in the jelly and either stop the jelly from setting or turn it back into liquid!

