

## Jelly and Fruit Experiment

On SCOPE's Becoming a Scientist episode, Maddie experimented with making jelly with fruit. Here's how you can try it at home!



### What you need:

- Jelly Crystals
- Pineapple
- Other fruit like kiwi fruit, paw paw, apples and oranges
- Kitchen scales
- Clear cups or containers
- Measuring jug
- Hot water
- Spoon
- Tinned pineapple



### What to do:

1. Weigh out about 50 grams of pineapple into a clear container.
2. Do the same for all of your other fruit.
3. Make your jelly by following the instructions on the packet. This usually means adding hot water to the jelly crystals and mixing thoroughly.
4. Pour the jelly mix on top of the pineapple until the container is about two thirds full.
5. Add the same amount of jelly to the other fruit cups. Also fill an empty cup with jelly, to act as your control.
6. Put the cups in the fridge and wait for about three hours.
7. Once the jelly has had time to set, take a look at your results.
8. Try the same experiment with tinned pineapple. What was the difference?



## What's happening:

There is a protein in jelly called gelatine. The gelatine acts like a net, trapping the water, sugar and flavourings and keeping the jelly solid. In pineapple, there is an enzyme called bromelain. This enzyme breaks up this gelatine net into tiny pieces – so the jelly stays runny! We have similar enzymes in our saliva and in our gut that help us break down and digest our food. Other fruit, like kiwi and paw paw, also have similar enzymes (although not quite as much as pineapple) so you might find that if you make jelly with these fruits, they stay runny or take longer to set as well.

When you try the same experiment with tinned pineapple, the jelly sets like normal. This is because when the pineapple is tinned, it is heated up to make sure it lasts a long time and is free of bacteria. But this process also destroys the bromelain that break down the proteins in the gelatine.

