

Processing foods

Investigation 1:

Making and testing red cabbage indicator

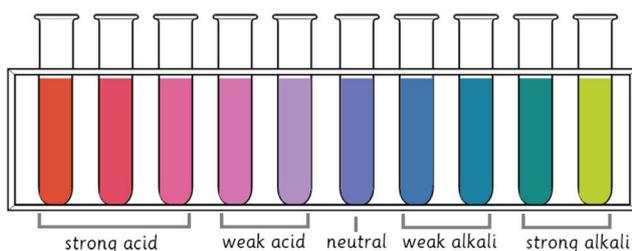


Making your red cabbage indicator solution:

- Take a small handful of shredded red cabbage and put it in a beaker;
- Pour on boiling water and leave for ten minutes; and
- Filter the warm solution and collect the red liquid in a second beaker. This is your red cabbage indicator solution.

Testing your red cabbage indicator solution:

- Put the solution you are testing in a test tube (3-4 cm deep);
- Add enough red cabbage indicator solution to see the new colour; and
- Match the colour of the solution to the indicator colour chart below:
- Record your results in a table.



The science explained:

Red cabbage contains a pigment called anthocyanin. The pigment changes colour according to the concentration of acid particles – the higher the concentration, the redder the solution. The lower the concentration, the yellower the solution.



Investigation 2: Making dried fruit snacks

Getting the fruit ready:

Apples

- Gently wash in cold water
- Peel and core
- Cut into slices about 7 mm thick
- Dip in fruit acid for 10 mins

Strawberries

- Gently wash in cold water
- Remove stem and leaves
- Cut in half
- Dry skin-side down

Cherries

- Remove stalks
- Gently wash in cold water
- Cut in half and remove stone
- Dry skin-side down

Bananas

- Peel
- Cut into slices about 7 mm thick
- Dip in fruit acid for 5 mins

Drying the fruit:

- Put a sheet of greaseproof paper on an oven tray;
- Spread the fruit over the paper in a single layer;
- Put the oven tray in an oven at 55 to 65°C with the door slightly ajar; and
- The fruit should be dried after 6-15 hours.

The science explained:

Fresh food goes off because microbes in the food cause decay. Microbes need warmth, moisture and nutrients to grow and multiply. A good way to stop microbes from growing and multiplying is by removing the moisture by drying the food. Naturally dry foods such as sugar, flour, raw rice and raw pasta do not go off quickly because there is no moisture for microbes. Drying fruit and vegetables allow us to keep them for a long time without them spoiling.



Investigation 3: Drying herbs



How to dry herbs:

- Harvest your herbs as stems with lots of leaves;
- Remove any leaves that look dry or shrivelled;
- Rinse off any dust, dirt or insects and gently shake dry;
- Tie the herbs in bundles of 4-6 stems using a small elastic band or a piece of string;
- Punch several holes in a paper bag and label the bag with the name of the herb;
- Put the bunch of herbs in the bag leaves first;
- Gather the ends of the bag around the bundle of stems and tie closed;
- Hang the bag in a warm airy room: and
- Check the herbs every week until they are dry.

The science explained:

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Investigation 4: Making ice cream in a bag



Wear gloves to shake the ice bag – it gets really cold!

Recipe:

- Measure out 200ml of milk in a jug;
- Add a tablespoon of sugar and $\frac{1}{4}$ teaspoon of vanilla essence;
- Stir the sugar to dissolve it;
- Pour the mixture in the small zip bag and seal it;
- Half fill the large zip bag with ice cubes;
- Add 200g (4 tablespoons) of cooking salt;
- Put the small bag in with the ice and salt, and seal the large bag;
- Shake the large bag gently for about five minutes;
- Test the ice cream by squeezing the small bag to see if it is ready. If it is still liquid, shake again until it is set;
- When it is set take out the small bag and rinse off the salty water under a cold tap: and
- Eat immediately!

The science explained:

To turn the mixture into ice cream, you need to make the mixture really cold. Ice melts at 0°C which is not cold enough to make ice cream.

