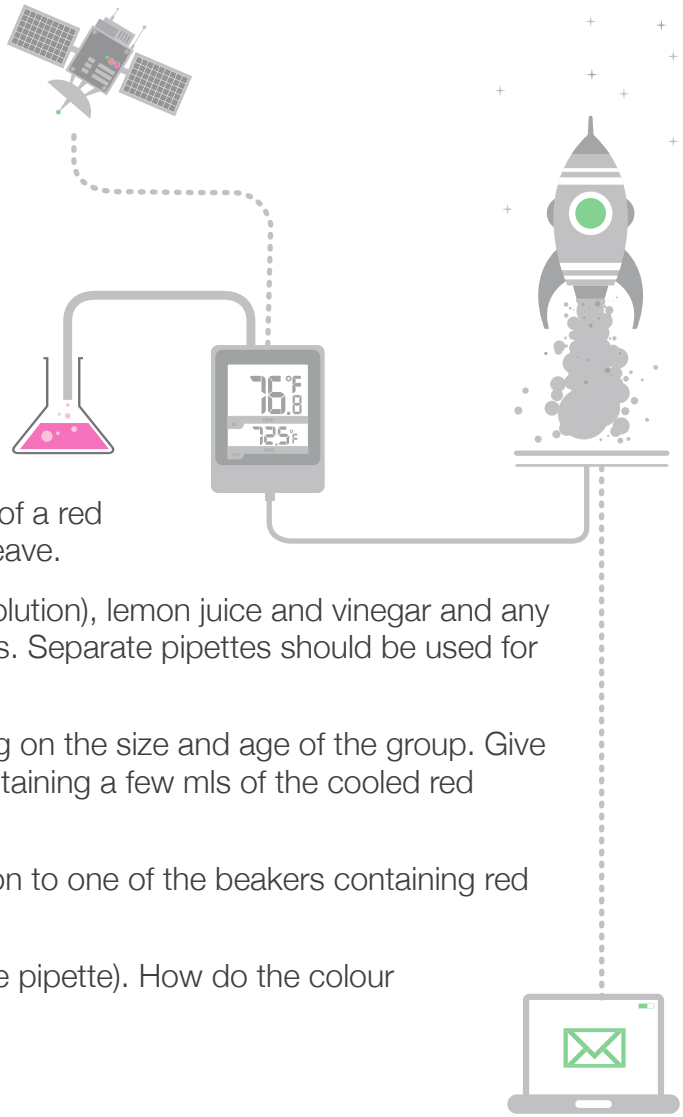
STEM AMBASSADOR HUB
STEM Ambassador Hub North East

RED CABBAGE INDICATOR

Equipment

- Jug containing hot water
- Pipettes
- Red Cabbage
- Knife
- Chopping Board
- A range of liquids to test (Lemon juice, vinegar, milk, bicarbonate of soda solution, soap)
- Plastic disposable cups



Method

Approximately 30 mins before the start of the club, take ½ of a red cabbage and roughly chop it. Cover it with hot water and leave.

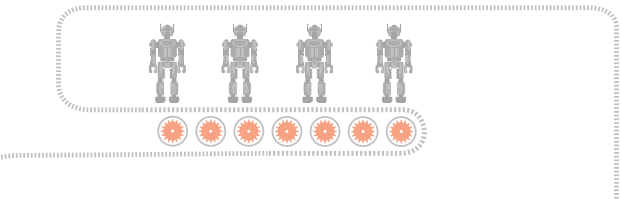
1. Pour a small amount of each of bicarbonate of soda (solution), lemon juice and vinegar and any other solutions you would like to test into separate cups. Separate pipettes should be used for each.
2. The children can work individually or in pairs, depending on the size and age of the group. Give each child (or pair) three small plastic pots/beakers containing a few mls of the cooled red cabbage water
3. Using a pipette, add a few drops of your chosen solution to one of the beakers containing red cabbage liquid. Look at the colour change
4. Do the same using the other solutions (using a separate pipette). How do the colour changes compare?

The Science

The liquid from the red cabbage is an indicator solution. Red cabbage contains pigments a lot like those in litmus paper (which is sometimes used in science). The cabbage is actually purple, but it turns red when cooked. The colour of the liquid indicates pH, which is related to whether something is an acid or alkali (these are opposites). Bicarbonate of soda is alkaline (has a high pH), and if we add enough it turns the cabbage liquid blue. Vinegar and lemon juice (which taste sour) are acids (have a low pH), although these particular acids are safe enough to eat. If we add enough vinegar or lemon juice to the cabbage liquid, it turns pink indicating a low pH.

Health and Safety

Boiling/hot water



RTC inspiring growth

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