**4: Vegetable juice indicators**

The chemicals which give flowers and vegetables their colour are often affected by acidity (which is measured by pH). This can be seen by the colour change that occurs when acids or alkalis are added to an extract of the coloured vegetable.

**Instructions:**

1. Choose which coloured vegetable (or juice) you want to investigate.
2. Grate some of the vegetable , and put the shreds into the mortar (a couple of dessertspoons will be enough).
3. Add two mLs of water to the shreds, and grind thoroughly using the pestle so the liquid becomes coloured by the natural chemicals.
4. Use a squeeze dropper to suck up the coloured liquid, and make three small puddles of liquid on the white cutting board (about half a mL is enough)
5. Add a couple of drops of hydrochloric acid to the first puddle
6. Add a couple of drops of sodium carbonate (which makes an alkaline solution) to the third puddle.
7. How does the colour change with pH?
8. Empty the mortar into the bin, and wipe it and the board with the paper towel