Food for thought

Today there is great emphasis on peeling or scrubbing vegetables to remove unwanted chemicals such as pesticides, but during the Second World War the Ministry of food produced propaganda posters and numeric rhymes to try to persuade people to eat every part of their vegetables including the skins.

Lord Woolton's poem

Those who have the will to win
Eat potatoes in their skin
Knowing that the sight of peelings
Really hurts Lord Woolton's feelings

Activity

The aim of this experiment is to find out whether home grown food is better for you.
http://www-saps.plantsci.cam.ac.uk/osmoweb/vitc.htm

- Form a hypotheses eg "Potatoes will have more vitamin C in them straight after harvesting"
- Buy a small bag of potatoes and dig some potatoes out of your allotment or patio pot. You will need equal amounts of each.
- Use a pestle and mortar or blender to grind up the potatoes. Try a ratio of perhaps 1g potato to 5cm^3 of distilled water (remember to keep the new and bought potatoes separate)
- Filter the pulp to get a clear solution then transfer 2cm^3 of the home grown solution into one test tube and the same amount of shop brought into a second test tube
- Using a pipette carefully add drops of DCPIP to the potato until it is unable to remain clear. Remember to count the number of drops.
- Repeat with the other test tube and then decide which contained the home grown and which the new potatoes

The principle of this method is a titration with dichlorophenolindophenol (or phenol-indo-2:6-dichlorophenol, also known as DCPIP). Ascorbic acid (vitamin C) reacts with DCPIP, changing the colour from blue to colourless.

The vitamin C content of new potatoes is about 30mg per 100mg, quite high. This level drops with storage so would be about 8mg per 100mg after 9 months. You may not get any measurement form older potatoes at all! A formula can be found on the web site above explaining how to calculate the amount of vitamin C present.