Science Lesson - Enzymatic Browning of Vegetables.

General capabilities

- Science

Resources

- Fresh vegetables, ones that brown quickly will work best (i.e. eggplant, potato, artichoke).
- Lemon juice, milk and water.
- 4 Plastic bowls

Preparation

- Prior to the lesson ask parents to donate a vegetable for the activity or you might like to buy 1 class vegetable.
- Print associated worksheet

ACTIVITIES

1. Cut up ½ of the vegetables you bought and leave them on the desk for 10 minutes. Get students to observe what has changed from the time you first cut them.
2. Ask students what you could to do to prevent the vegetables from going brown after they are cut?
3. Get students to investigate the effects of dipping the vegetables into a bowl of the above liquids for 1 minute each. Discuss with students what method will work best.

You will find Lemon Juice works best. This is due to the Vitamin C in the lemons which is acidic. When plant cells are cut an enzyme called polyphenol oxidase is released and reacts with the oxygen in the air. Vitamin C prevents the enzyme from reacting with oxygen and therefore prevents browning.

Science Lesson – Enzymatic Browning Work sheet

Record your observations of the science activity in the below table

	Untreated Vegetable	Lemon Juice	Milk	Water
Before				
10 minutes later				
2 hours later				