Some materials change when they are heated, some changes are reversible and some are not

(a) Put small quantities of different substances eg chocolate, wax, butter, margarine, ice cube, cheese, pasta, plasticene into small, plastic 'mousse' pots or tin-foil pastry cases, and stand them or float them on hot water. The children can observe the substance melting. Do they all melt, if not, why not? Now put them in cold water and watch them solidify.

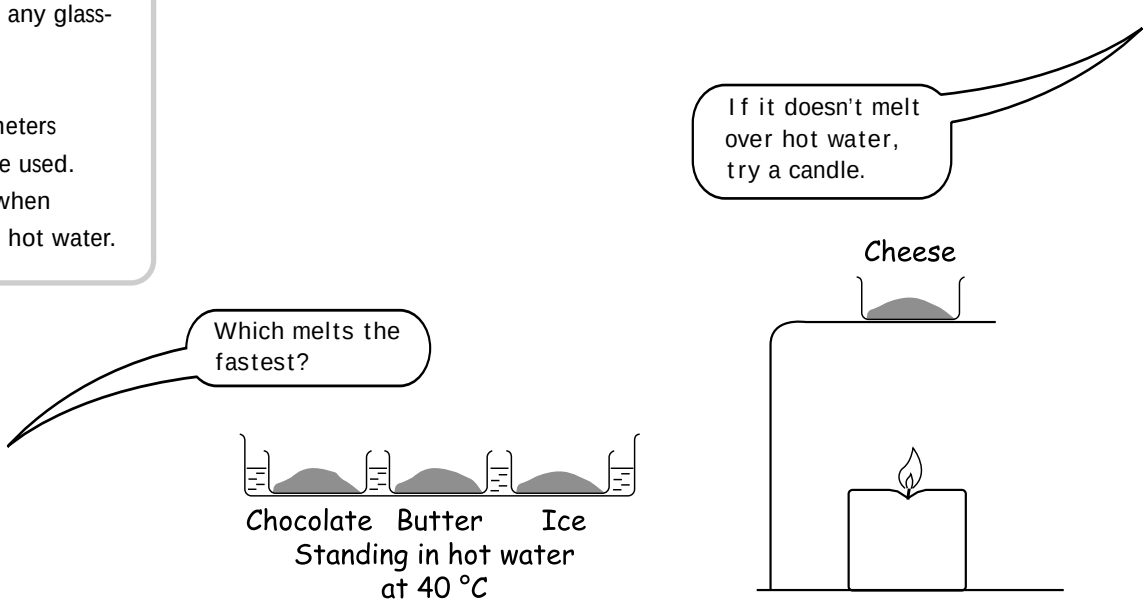
(b) Children could **investigate** 'which melts the fastest?' To keep the test fair, compare the same quantities, eg equal cubes of margarine, butter and chocolate.

Word processing

(c) **Different materials melt at different temperatures** Older, more able children can **investigate** the fact that materials melt at different temperatures. This may be apparent to them from the outcome of activity (a). At primary level with simple equipment, this activity is limited to a few materials the children can melt. However, in a practical way it introduces the concept of materials melting at different temperatures. It may also lead to a discussion about the temperatures needed for other materials such as metals to melt and whether or not all materials will melt.

Safety!

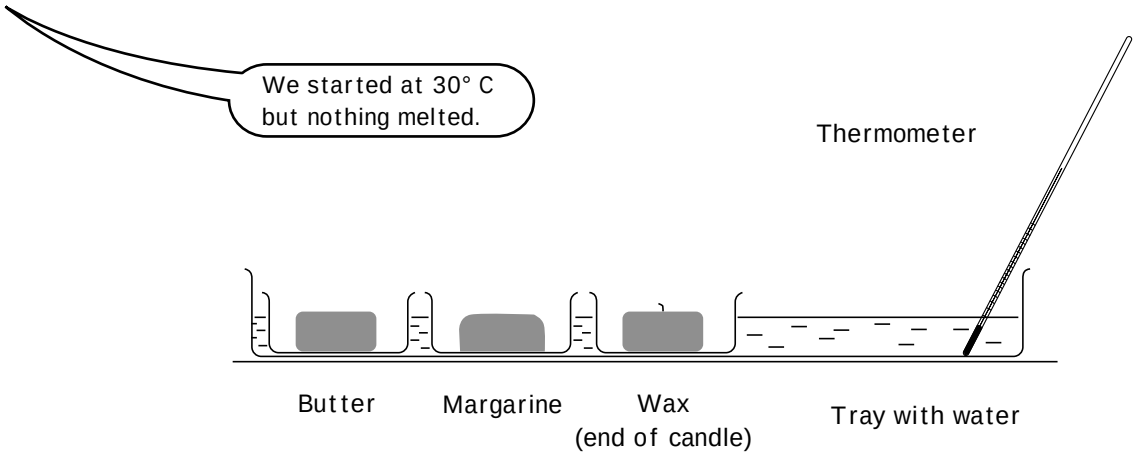
- Care when handling any glass-ware.
- Spirit thermometers should be used.
- Care when handling hot water.



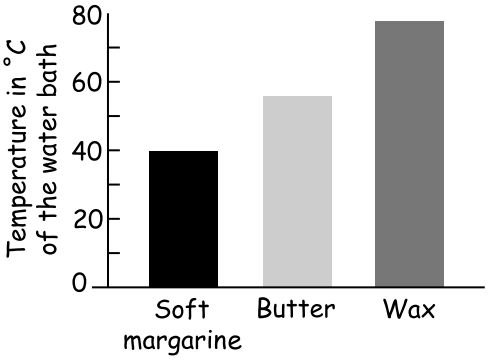
Limit the children to a few materials that will melt at the temperature of very hot water (80 °C) or below, such as soft and hard fats, chocolate and wax. Use small, equal cubes of each substance and place each one into a dish. Place these into a large container of water with a thermometer. Begin the activity with warm water (30 °C) and see if any substance begins to melt. Remove the dishes, add hot water to the water bath, stir and take the water temperature. Replace the dishes to see which substance melts at the higher temperature. Record the water temperatures as different materials melt. A bar graph can be made of the results.

Safety!

- Discuss the hazards and risks associated with this activity. The children doing this activity, should be well supervised.

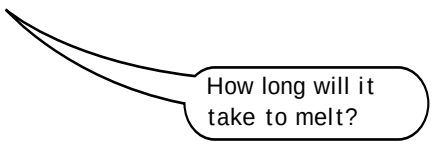


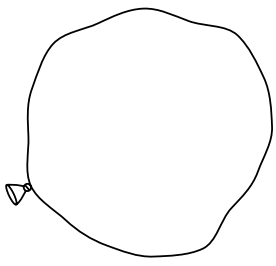
Graphing package



A graph to show the temperature at which materials begin to melt

(d) More melting ice Great fun for younger children. Fill different containers with water eg balloons, rubber gloves, ice trays, yoghurt pots etc, freeze them and present them to the children to watch them melt during the day. You can peel the balloon away from the ice to leave the smooth, ice ball. Ask them how the process might be speeded up or slowed down (thermal insulation), and which they think will melt first. Float the balloons on warm water.





Ice Balloon