

Coloured Fountain

Action

This experiment will show how the characteristics of hot and cold water differ.

Grade Level

Grade 3 - Heating and Cooling

Materials

- A piece of string (approximately 30 cm long)
- A small bottle
- A large jar (or a large beaker)
- Food colouring
- Water
- A device for heating water

Instructions

- Fill the jar with cold water.
- Tie the string around the neck of the small bottle. Heat enough water to fill the bottle and stir in some food colouring. Fill the small bottle with coloured water.
- Using the string, gently lower the small bottle into the jar of cold water. As the bottle drops, it will release a coloured fountain of hot water. Even after the small bottle is settled on the bottom, coloured water will continue to rise out of it until all the coloured water is floating on the surface.

Safety

Be careful when heating the water to avoid burns.

Hints

- Be careful not to let the small bottle tip over.
- Tap water is not hot enough to have an effective result. Heat the water using a Bunsen burner, hot plate or appropriate heating device.

Science Principle

Water expands and rises when it is heated. The hot coloured water is less dense than the cold water. The hot water rises to the surface. This explains why in the morning, the surface of an outdoor swimming pool is warmer than the deep end.