

Plastics independent investigations



Age 11+
(adult supervision)



planning
15 minutes
investigation
20 minutes

Details

What you need per group

For insulation test:

- 3 beakers (250ml)
- 2 or more different materials (paper and plastic)
- Scissors
- Sticky tape
- Thermometer
- Kettle
- Timer
- Student Sheet 2a: Plastic independent investigation

For strength test:

- Two different materials
- Sticky tape
- Scissors
- Scales / balance
- 10g weights

Safety and Guidance



Precautions

Remind students by demonstrating how to conduct the investigations safely. For those conducting the insulation investigation, do not give students water hotter than 43 degrees Celsius. This can be achieved by boiling water in advance and allowing it to cool to the appropriate temperature, or by asking technicians to bring the correct temperature water to the class when needed.

Overview

In this activity students will discover how to design and carry out their own investigation into the properties of plastics. Specifically, they will investigate the insulation properties and strength of plastic.

Running the Activity

- Ask technicians to set up individual trays with equipment.
- Giving students the trays whilst they are planning their investigation ensures that they only plan a practical with the equipment available.
- For a class of 30 you may have ten groups. Therefore, request five trays with the insulation test and five trays with strength test.

Expected results

Students will recognise that plastic is both a good insulator of heat and a strong material.