

Plastics independent investigations



Choose one of the following models for your investigation

- A) Which material is the best insulator?
- B) Which material is the strongest?

Method A

1. Collect 3 250ml beakers
2. Wrap one in plastic, one in paper, and leave one uncovered
3. Add 100ml of hot water to each beaker
4. Measure the starting temperature
5. Measure the temperature every 2 minutes for 10 minutes
6. Calculate the change in temperature between the first and last reading

Method B

1. Collect paper and plastic materials
2. Weigh the materials so you have the same mass of both (in grams)
3. Build two identical bridges between two tables
4. Fix the hook of the weight to the bridge
5. Add 10g at a time until the bridge collapses
6. Record the weight which causes the bridge to collapse

Summary Questions

1. What is the **independent variable** (the thing that you are changing)?

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2. What is the **dependent variable** (the thing that you are measuring)?

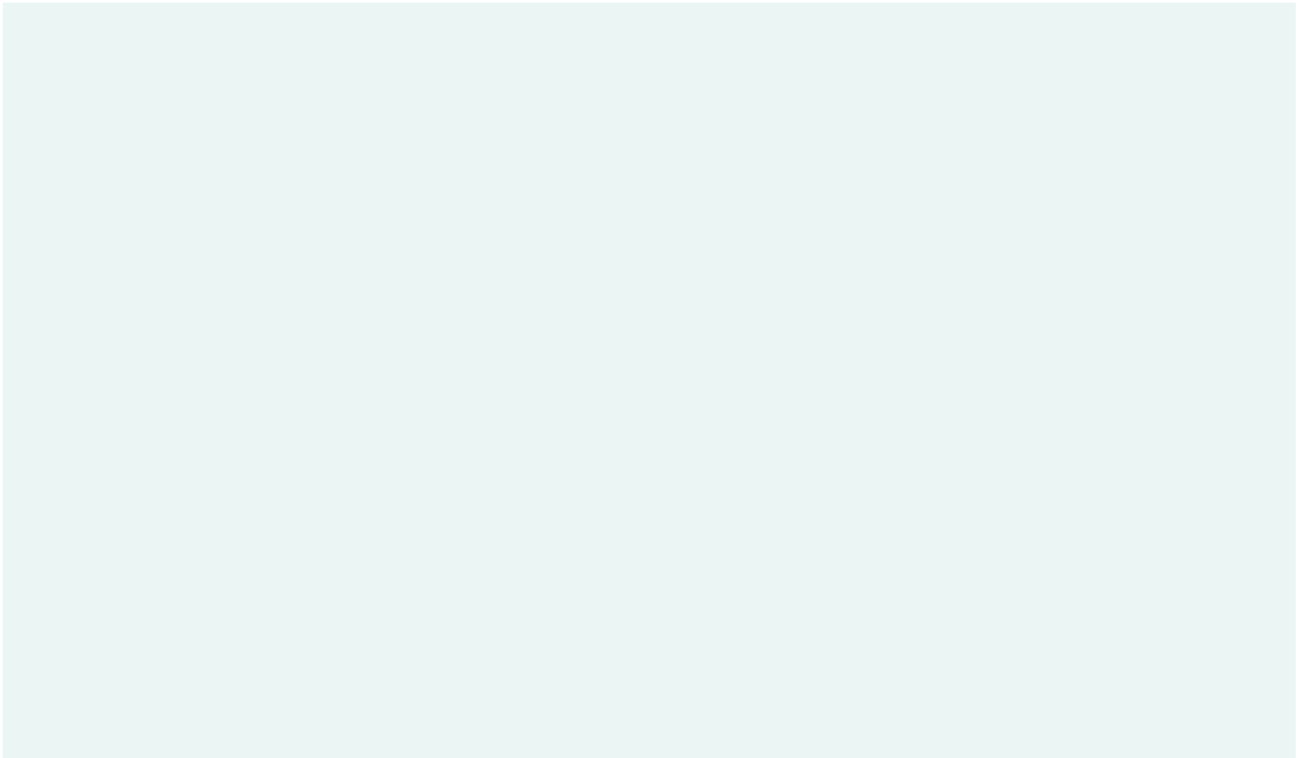
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3. What is the **control variable** (the thing that you are keeping the same)?

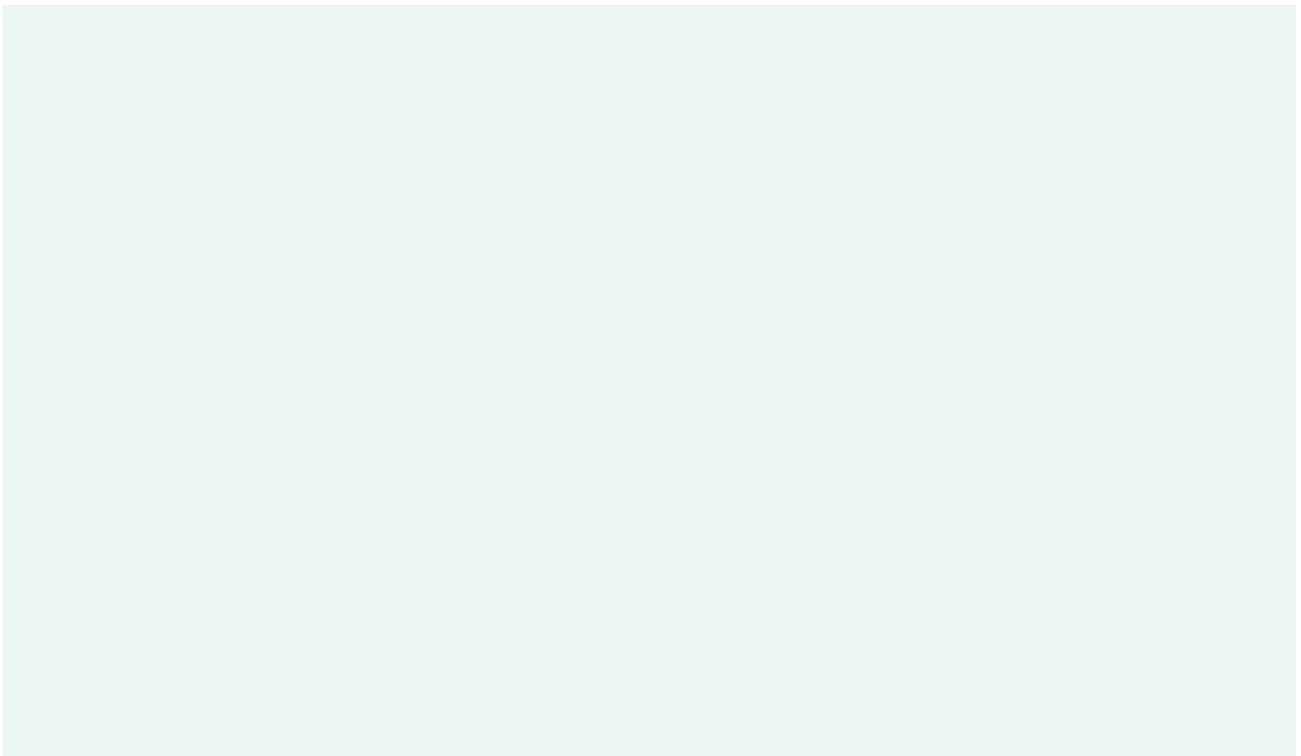
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STUDENT SHEET 2a

4. Draw and label a diagram of your practical in the box below.



5. Draw a table of your results.
The dependent variable goes in the far-left column.



STUDENT SHEET 2a

- 6. Draw a bar chart of your results.
Remember the independent variable goes on the horizontal axis and the dependent variable on the vertical axis.



- 7. What do your results tell you?

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- 8. Do you think your results are accurate? Explain why.

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- 9. How could you make your investigation more fair?
(Identify more control variables.)

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