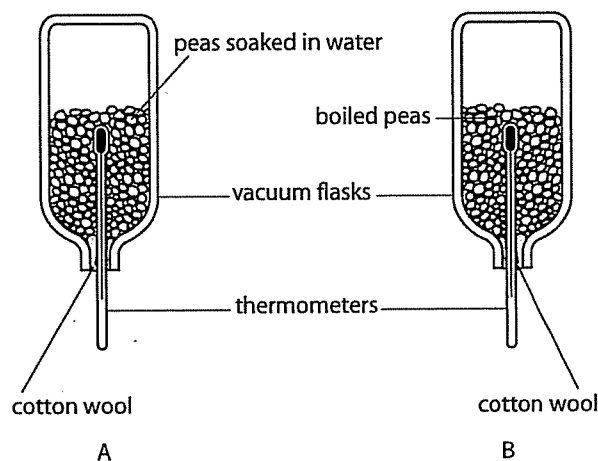


Susan set up the apparatus shown in the diagram using peas soaked in water and boiled peas. Both sets of peas were sterilised to kill microbes on their surfaces.

She measured the temperature inside each flask every 6 hours over 3 days. Her results are shown in the table.

Time (hours)	Temperature (°C)	
	Flask A	Flask B
0	16.0	16.0
6	19.0	16.0
12	21.0	16.0
18	24.0	16.0
24	26.0	16.0
30	28.0	16.0
36	27.0	16.0
42	31.0	16.0
48	32.0	16.0
54	32.5	16.0
60	33.0	16.0
66	33.0	16.0
72	33.0	16.0



- 1 What variables would be kept the same to make the experiment a fair test?
- 2 Plot both sets of results as line graphs on the same axes.
- 3 a Were there any unusual results? If so, which ones?  
b Suggest a possible cause for any unusual results.
- 4 Why did the temperature rise in flask A?
- 5 Why did the temperature remain at 16°C in flask B?
- 6 Estimate the temperature in flask A after 20 hours.
- 7 Predict what the temperature would be in flask A after 78 hours. Explain your reasoning.
- 8 This investigation could be done using peas in beakers covered with cling film. Suggest why using vacuum flasks produces more reliable data.
- 9 Suggest one way of altering this experiment to collect more accurate data.
- 10 Heat is produced in flask A. How is the production of this heat:
  - a similar to burning?
  - b different to burning?

### I CAN...

- evaluate a method and suggest improvements
- present data as a line graph
- use a knowledge of respiration to make predictions and draw conclusions.