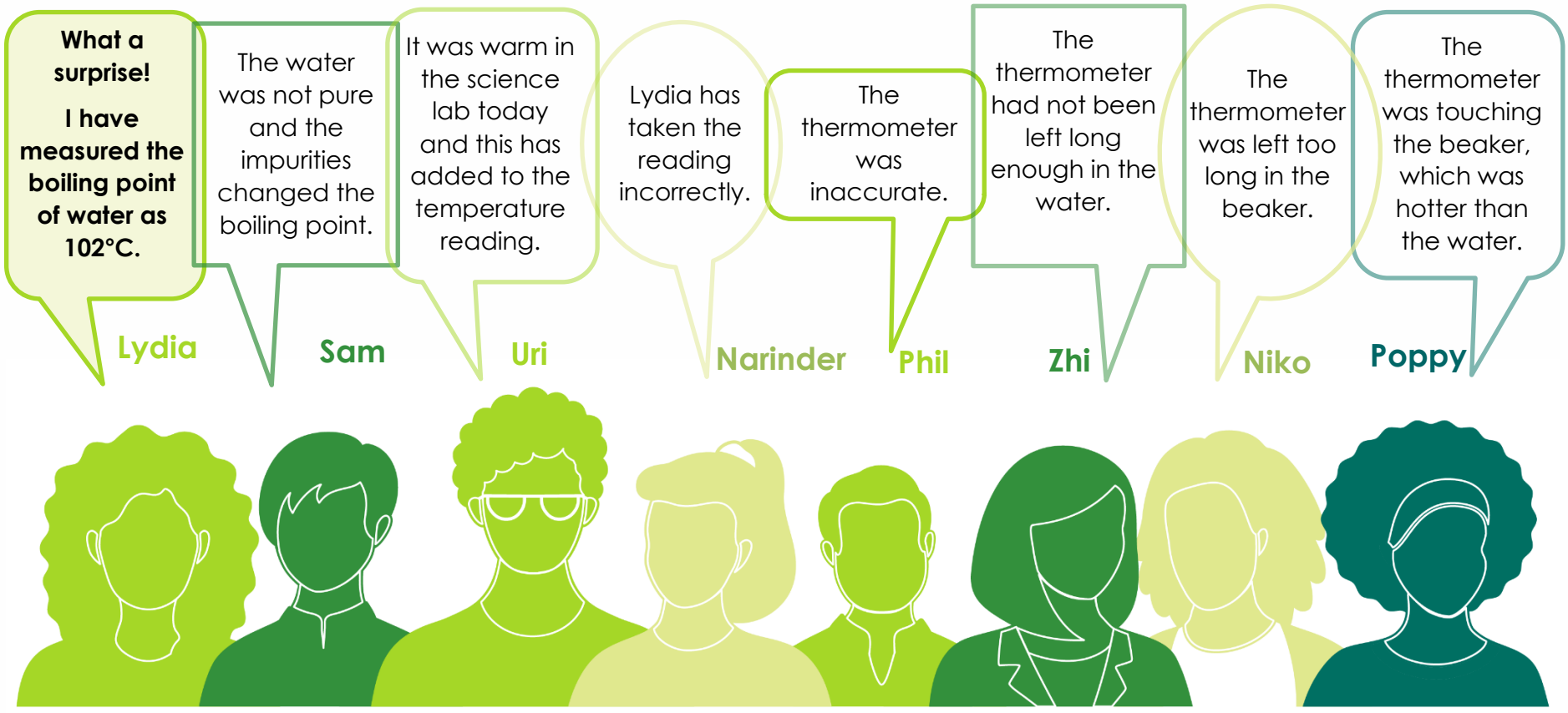
Boiling point: a surprising measurement!

A student, Lydia, carried out an experiment to measure the boiling point of water. She heated some water, in a beaker, with a Bunsen burner. When the water started to boil, she added a thermometer and took the reading. The temperature reading was 102°C.

Lydia was surprised. Her classmates made some suggestions as to why the reading was not 100°C as she was expecting.



Activity 1

In a small group, discuss the suggestions Lydia's friends made. Arrange the suggestions into two categories, reasonable (plausible) explanations and unreasonable ones.

Reasonable explanations	Unreasonable explanations
e.g. *Lydia misread the thermometer (Narinder)*	

Activity 2

For each possible (plausible) explanation, describe what further experiment you would do to decide whether it might be correct or not. Explain how that experiment would help you decide if the suggestion was correct.

Example

Narinder's suggestion, *Lydia misread the thermometer*, is a reasonable explanation. A simple way of testing this suggestion would be to get several members of the class to take the reading. If they agree that the thermometer reads 102°C, then you can rule out Narinder's suggestion as the true explanation. If the other students take the reading as 100°C, then you might conclude that Narinder's was the correct explanation.

Activity 3

Can you suggest a different explanation for the reading? If you can, discuss your ideas in a group.

Activity 4

Devise your own concept cartoon about another surprising experimental result.

What a surprise! ...