

- 1) 50°C
- 2) *minute 3*
- 3) 5°C
- 4) 2°C
- 5) $3\frac{1}{2}$ minutes
- 6) 19°C



- 1) After two minutes, the difference in temperature between the two drinks was 1°C . **True.**
- 2) After three minutes, the orange juice was cooler than the blackcurrant squash. **False. Accept any answer that explains that Kayden may have muddled up the lines for the orange juice and the blackcurrant squash. Alternatively, he may have looked at the wrong time on the graph, for example at 1 minute, 2 minutes or 5 minutes.**
- 3) The temperature of the blackcurrant squash dropped by 5°C between minute 2 and 3. **False. Accept any answer that explains that Molly has wrongly calculated the difference between 51°C and 47°C . It should be 4°C .**
- 4) There was never more than a difference of 2°C between the temperatures of the two drinks. **True.**

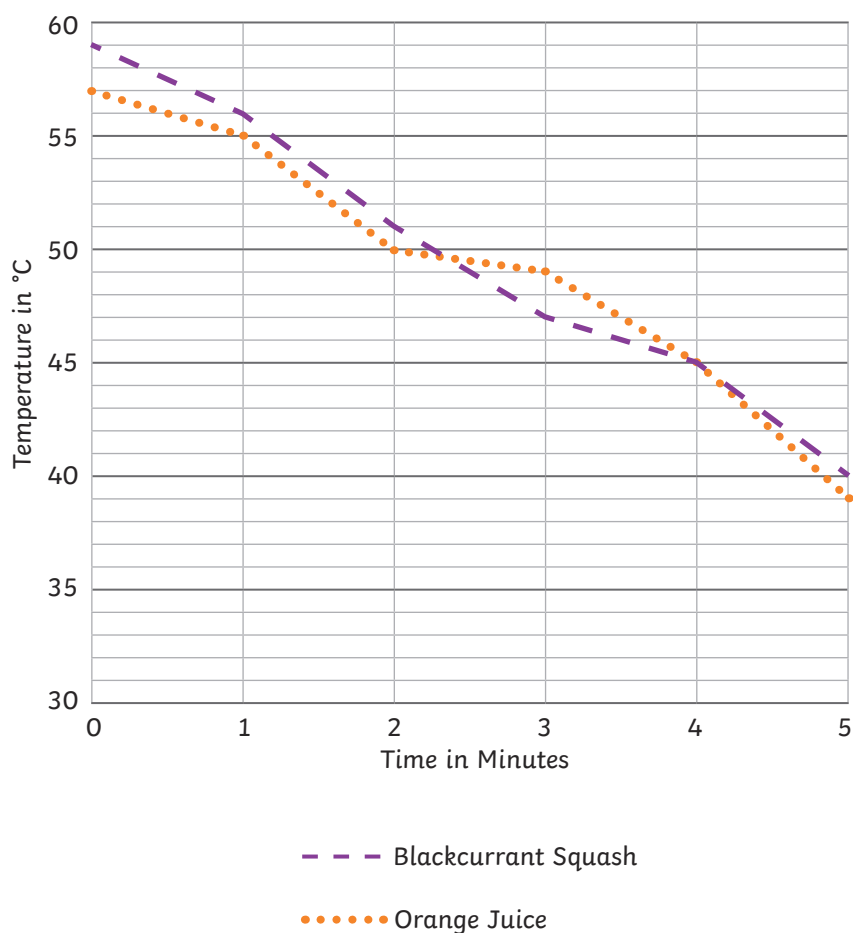


- 1)
 - a) *A – the graph shows that the hot chocolate starts off hot and cools down gradually.*
 - b) *C – the graph shows that the soup starts off cold, while Ayaan is pouring it into the saucepan, and then warms up gradually.*
 - c) *B – the graph shows that the juice starts off cold, heats up very quickly and then cools down gradually.*
- 2) **Answers will vary. Accept any answer that describes the soup starting off at a high temperature, cooling down gradually and then being quickly reheated.**





Class 5 are investigating how quickly two different liquids cool over five minutes. They start their investigation by warming the two liquids in the microwave and then measure the temperature of each liquid every minute as they cool down.



1) What was the temperature of the orange juice after two minutes?

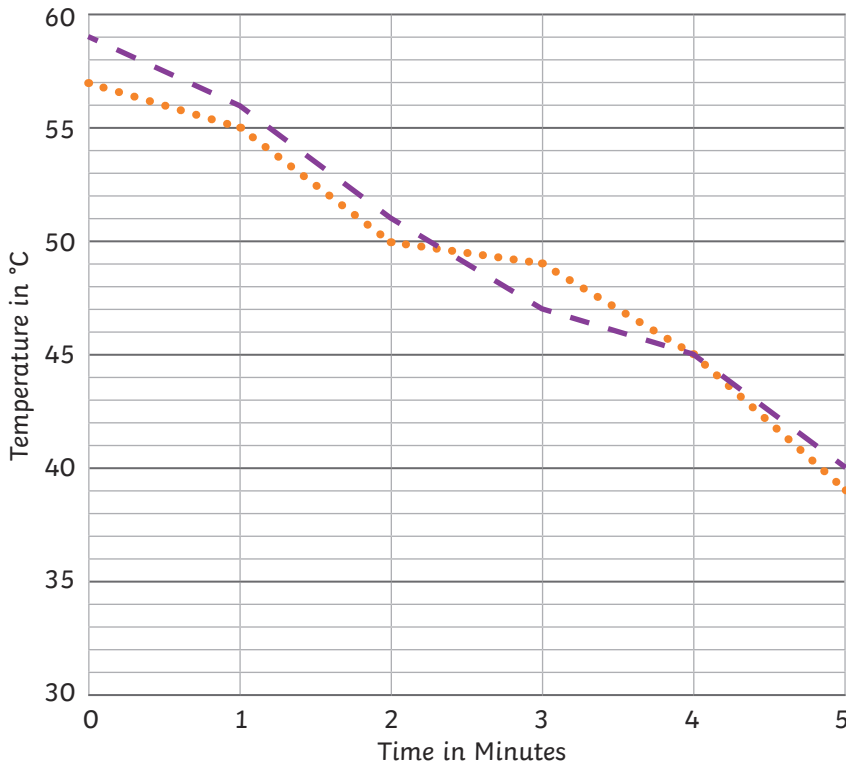
2) At which minute was the temperature of the blackcurrant squash 47°C?

3) By how many degrees did the temperature of the orange juice cool from minute 1 to minute 2?

4) By how many degrees did the temperature of the blackcurrant squash cool from minute 3 to minute 4?

5) Approximately, how long did it take for the temperature of the orange juice to drop by 10°C?

6) By how many degrees did the temperature of the blackcurrant squash cool altogether?



Use the line graph to decide whether each of the statements below are true or false.

If you think the statement is false, explain the mistake you think the child has made when they read the line graph.

--- Blackcurrant Squash

..... Orange Juice



Jamal

After two minutes, the difference in temperature between the two drinks was 1°C.



Kayden

After three minutes, the orange juice was cooler than the blackcurrant squash.



Molly

The temperature of the blackcurrant squash dropped by 5°C between minute 2 and 3.

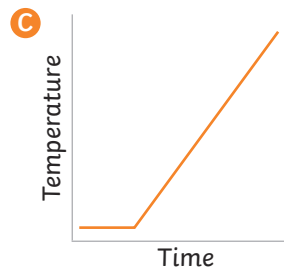
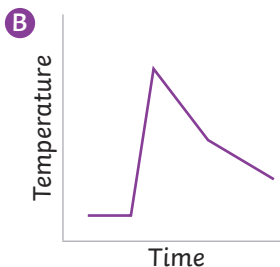
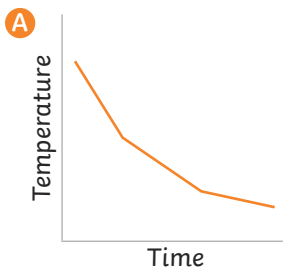


Isha

There was never more than a difference of 2°C between the temperatures of the two drinks.



1) Match each graph to the correct story and explain your reasoning.



a) Zoe takes her hot chocolate out of the microwave. She then leaves the drink on the side to cool gradually before she drinks it at a pleasant temperature.



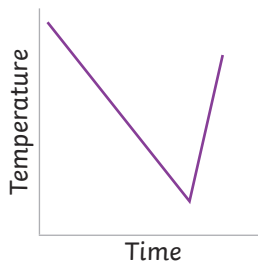
b) Ayaan takes his soup out of the fridge. He pours it into a saucepan and heats it gradually up on the hob.



c) Zara takes her juice out of the fridge. The drink is too cold for her, so she warms it up quickly in the microwave. She must then wait a little while for it to cool so it isn't too hot to drink. But, when she does drink it, it is just right.



2) Eddie wants to eat some soup. Based on this line graph, write a story about how the temperature of the soup changed over time.





Diving into Mastery



Read and Interpret Line Graphs

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:



Diving



Deeper



Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Aim

- Solve comparison, sum and difference problems using information presented in a line graph.



Read and Interpret Line Graphs

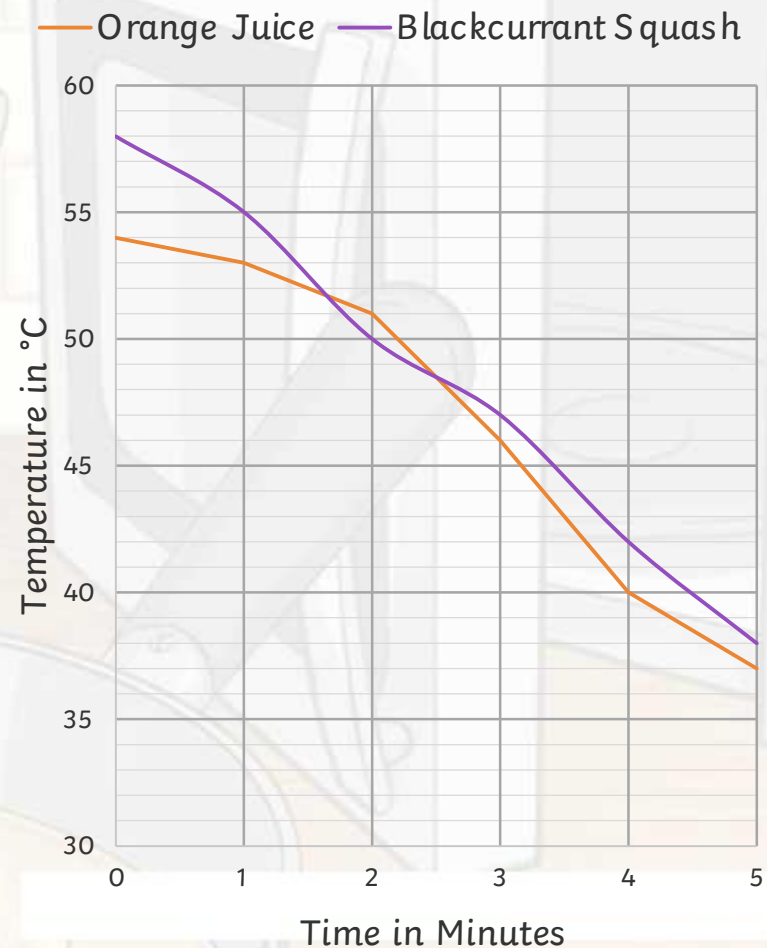
Diving



Miss White's class are investigating how quickly two different liquids cool over five minutes. They start their investigation by warming the two liquids in the microwave and then measure the temperature of each liquid every minute as they cool down.

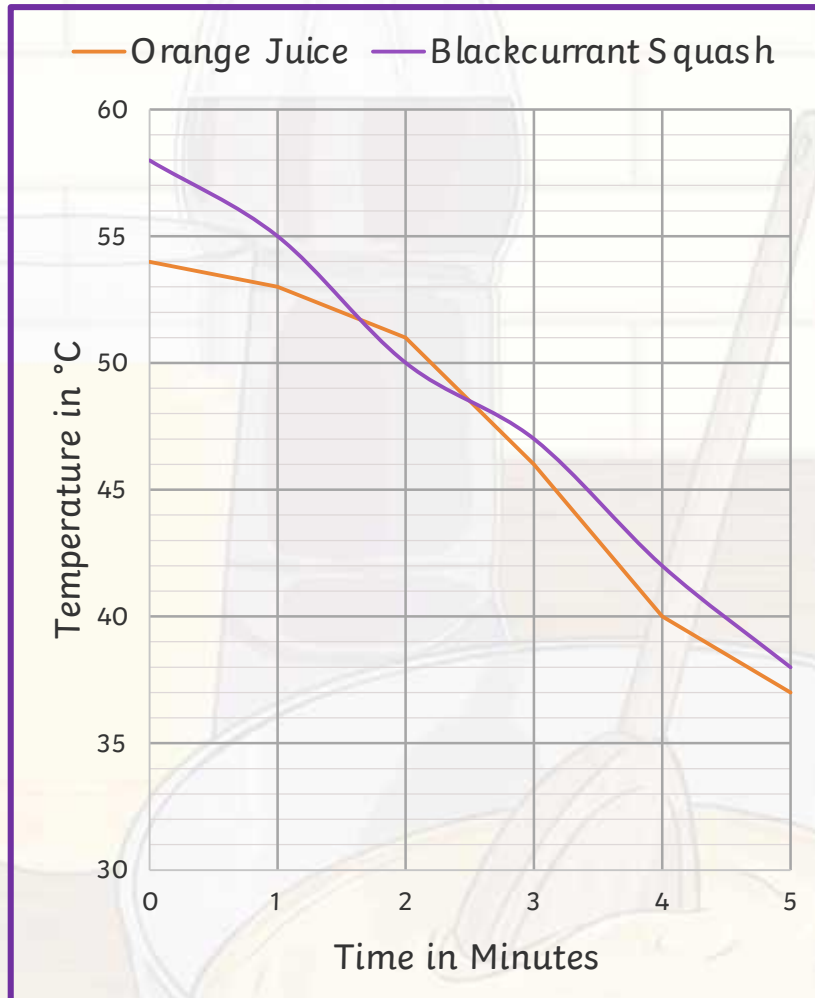
By how many degrees did the temperature of the orange juice cool from minute 2 to minute 3?

5100ute 4



Read and Interpret Line Graphs

Deeper



Prove whether each statement is true or false. If you think the statement is false, explain the mistake you think the child has made when they read the line graph.

The temperature of the blackcurrant squash at 2 minutes is 5°C below the temperature of the orange juice at 2 minutes.

After approximately two and a half minutes, the temperature of the two drinks was the same.

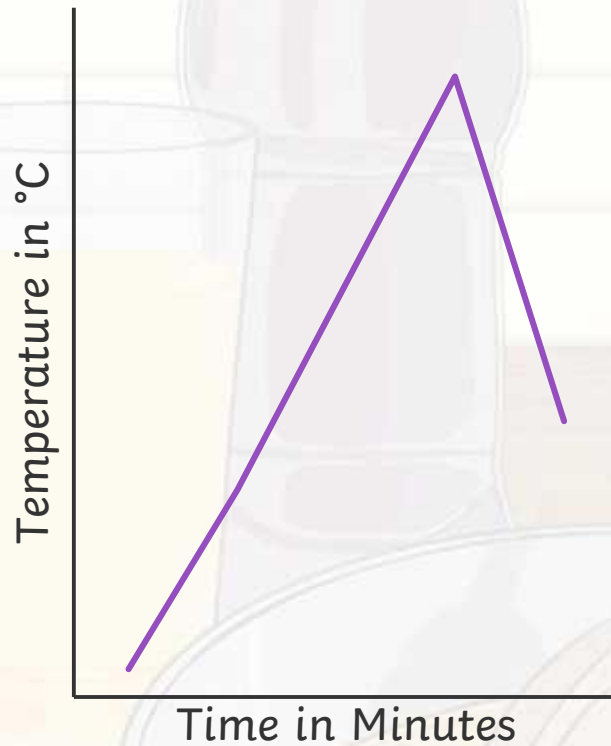
False – it dropped by 3°C. She has looked at the values for the orange juice on the horizontal axis instead of the values for the blackcurrant squash on the vertical axis to find the difference.

Read and Interpret Line Graphs

Deepest



Which story describes this line graph the best? Explain your reasoning.



Benji gets the soup out of the fridge and gradually heats it up in a saucepan on the hob. He eats it straight away while it is warm.

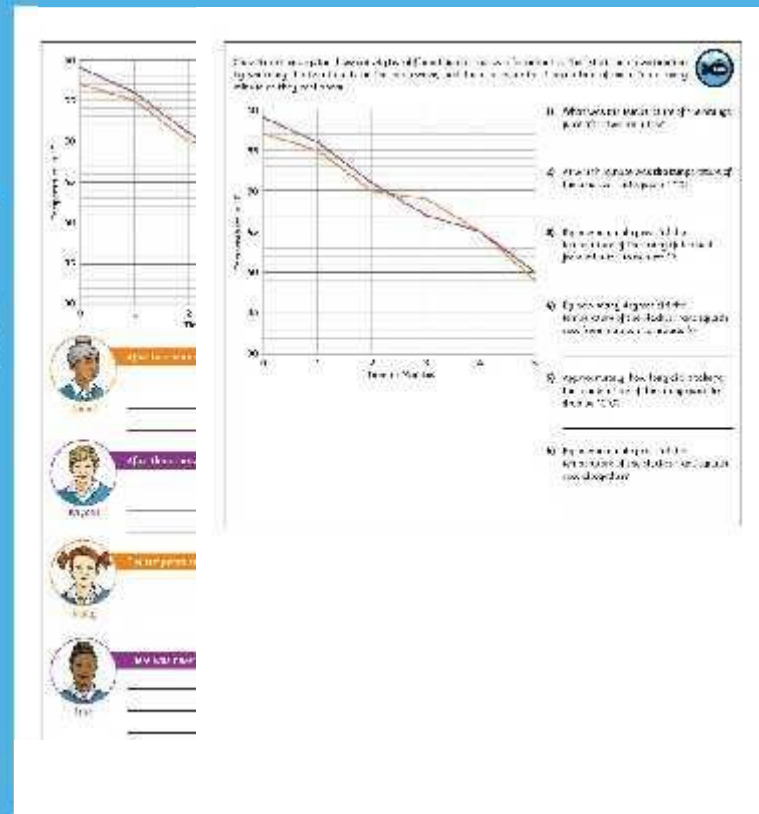
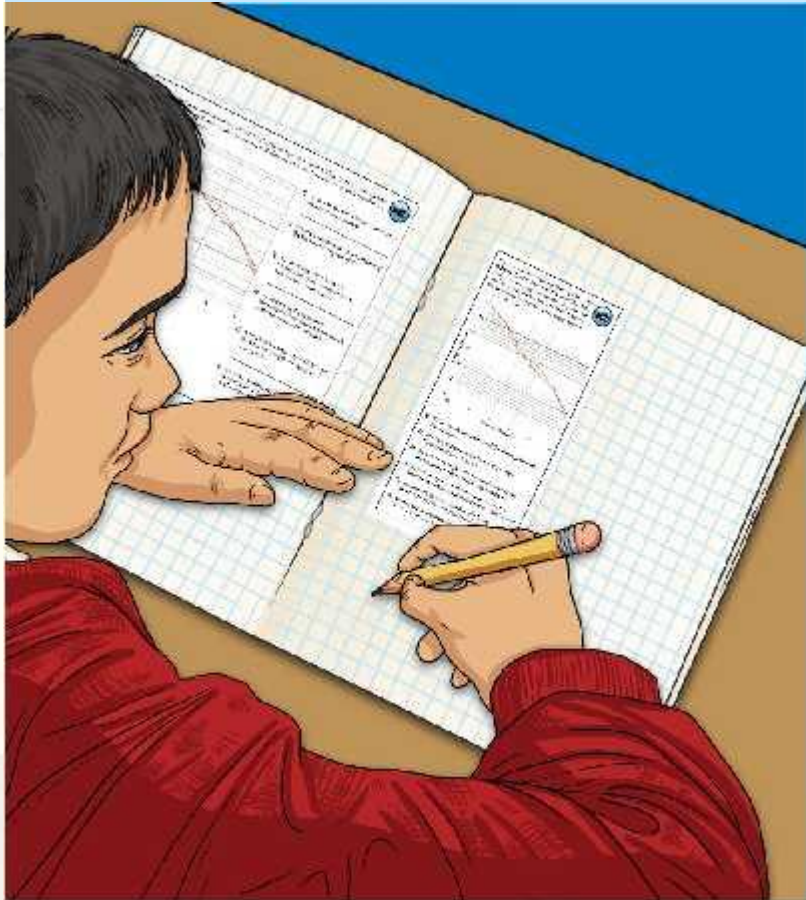
Benji gets the soup out of the fridge and gradually heats it in a saucepan on the hob. However, it is too hot to eat, so he lets it cool back down a bit.

Benji gets the soup out of the fridge and eats it cold.



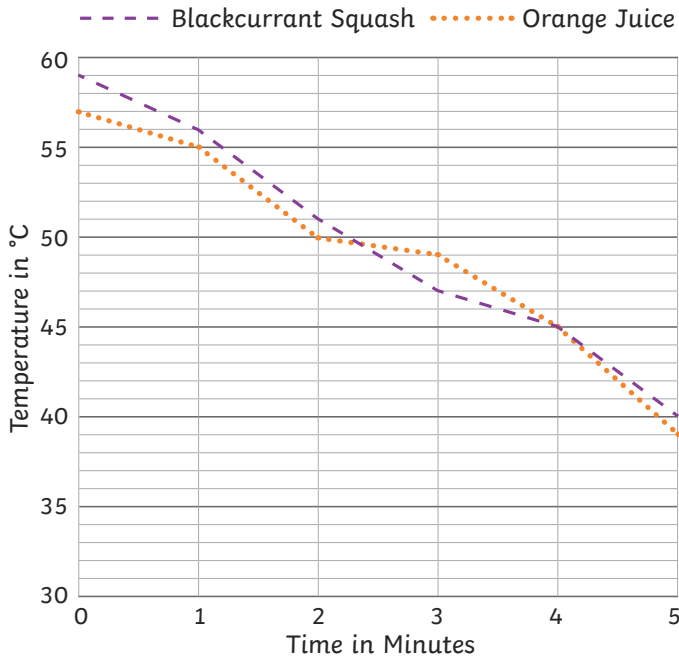
Read and Interpret Line Graphs

Dive in by completing your own activity!



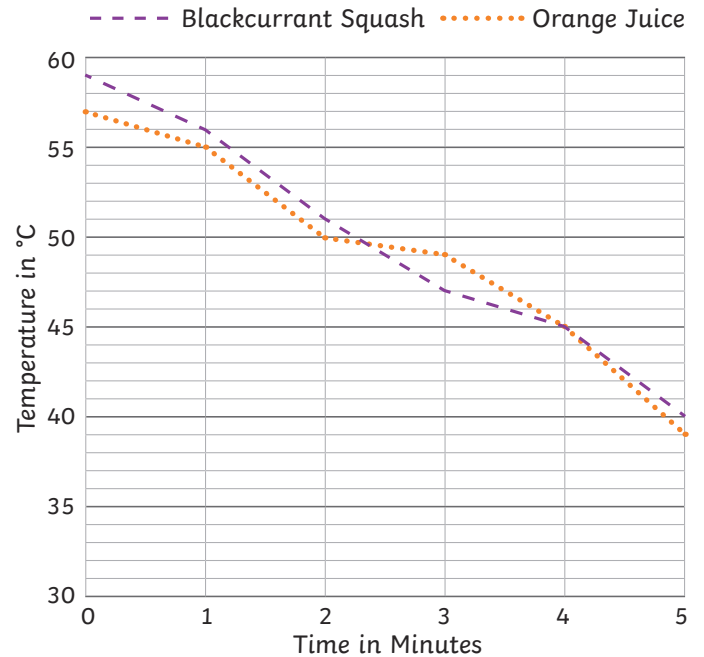


Class 5 are investigating how quickly two different liquids cool over five minutes. They start their investigation by warming the two liquids in the microwave and then measure the temperature of each liquid every minute as they cool down.



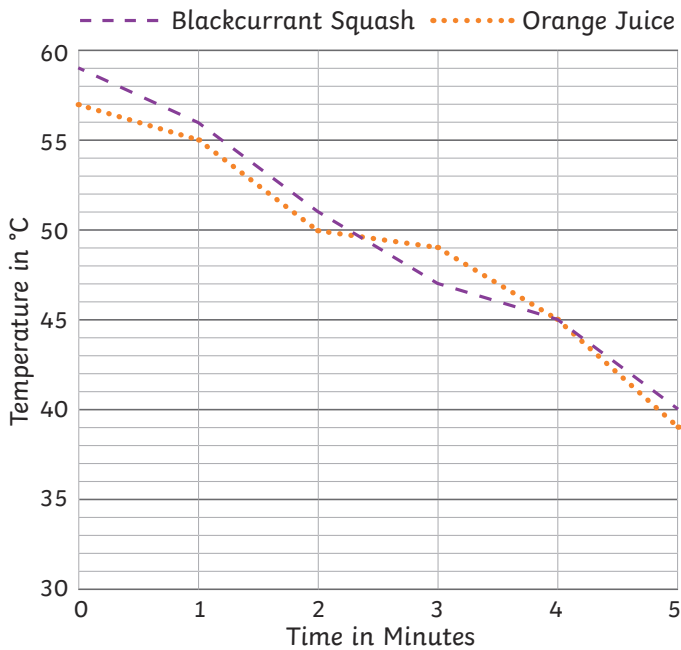
- 1) What was the temperature of the orange juice after two minutes?
- 2) At which minute was the temperature of the blackcurrant squash 47°C?
- 3) By how many degrees did the temperature of the orange juice cool from minute 1 to minute 2?
- 4) By how many degrees did the temperature of the blackcurrant squash cool from minute 3 to minute 4?
- 5) Approximately, how long did it take for the temperature of the orange juice to drop by 10°C?
- 6) By how many degrees did the temperature of the blackcurrant squash cool altogether?

Class 5 are investigating how quickly two different liquids cool over five minutes. They start their investigation by warming the two liquids in the microwave and then measure the temperature of each liquid every minute as they cool down.



- 1) What was the temperature of the orange juice after two minutes?
- 2) At which minute was the temperature of the blackcurrant squash 47°C?
- 3) By how many degrees did the temperature of the orange juice cool from minute 1 to minute 2?
- 4) By how many degrees did the temperature of the blackcurrant squash cool from minute 3 to minute 4?
- 5) Approximately, how long did it take for the temperature of the orange juice to drop by 10°C?
- 6) By how many degrees did the temperature of the blackcurrant squash cool altogether?

Use the line graph to decide whether each of the statements below are true or false. If you think the statement is false, explain the mistake you think the child has made when they read the line graph.



Jamal

After two minutes, the difference in temperature between the two drinks was 1°C.



Kayden

After three minutes, the orange juice was cooler than the blackcurrant squash.



Molly

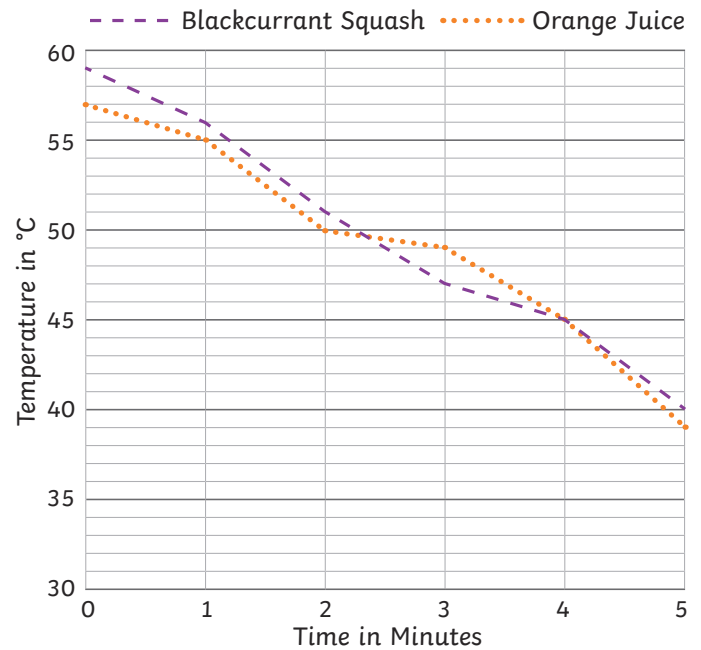
The temperature of the blackcurrant squash dropped by 5°C between minute 2 and 3.



Isha

There was never more than a difference of 2°C between the temperatures of the two drinks.

Use the line graph to decide whether each of the statements below are true or false. If you think the statement is false, explain the mistake you think the child has made when they read the line graph.



Jamal

After two minutes, the difference in temperature between the two drinks was 1°C.



Kayden

After three minutes, the orange juice was cooler than the blackcurrant squash.



Molly

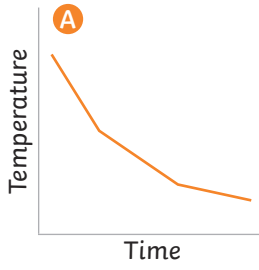
The temperature of the blackcurrant squash dropped by 5°C between minute 2 and 3.



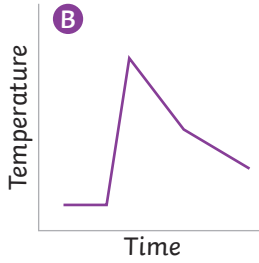
Isha

There was never more than a difference of 2°C between the temperatures of the two drinks.

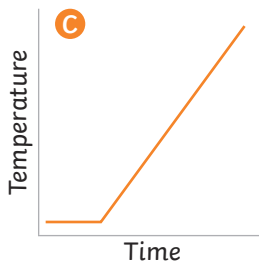
1) Match each graph to the correct story and explain your reasoning.



a) Zoe takes her hot chocolate out of the microwave. She then leaves the drink on the side to cool gradually before she drinks it at a pleasant temperature.



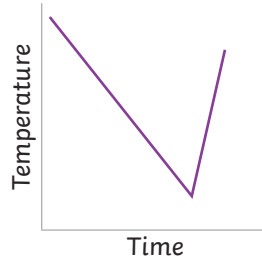
b) Ayaan takes his soup out of the fridge. He pours it into a saucepan and heats it gradually up on the hob.



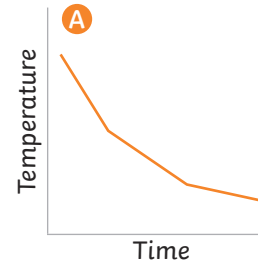
c) Zara takes her juice out of the fridge. The drink is too cold for her, so she warms it up quickly in the microwave. She must then wait a little while for it to cool so it isn't too hot to drink. But, when she does drink it, it is just right.



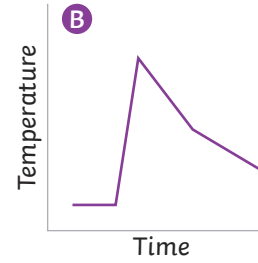
2) Eddie wants to eat some soup. Based on this line graph, write a story about how the temperature of the soup changed over time.



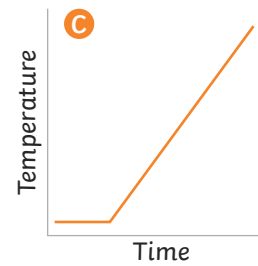
1) Match each graph to the correct story and explain your reasoning.



a) Zoe takes her hot chocolate out of the microwave. She then leaves the drink on the side to cool gradually before she drinks it at a pleasant temperature.



b) Ayaan takes his soup out of the fridge. He pours it into a saucepan and heats it gradually up on the hob.



c) Zara takes her juice out of the fridge. The drink is too cold for her, so she warms it up quickly in the microwave. She must then wait a little while for it to cool so it isn't too hot to drink. But, when she does drink it, it is just right.



2) Eddie wants to eat some soup. Based on this line graph, write a story about how the temperature of the soup changed over time.

