

KEEPING WARM

Science MiniSATS - Unit 4C

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Name

Score

%

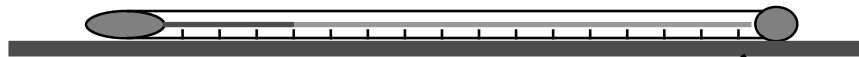
Level

1

Thermometer

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4C

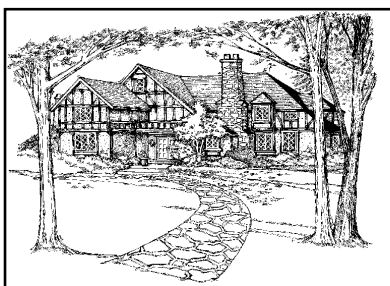


This thermometer measures temperatures between -10°C and 140°C . It is horizontal on a table in a classroom and reads 20°C .

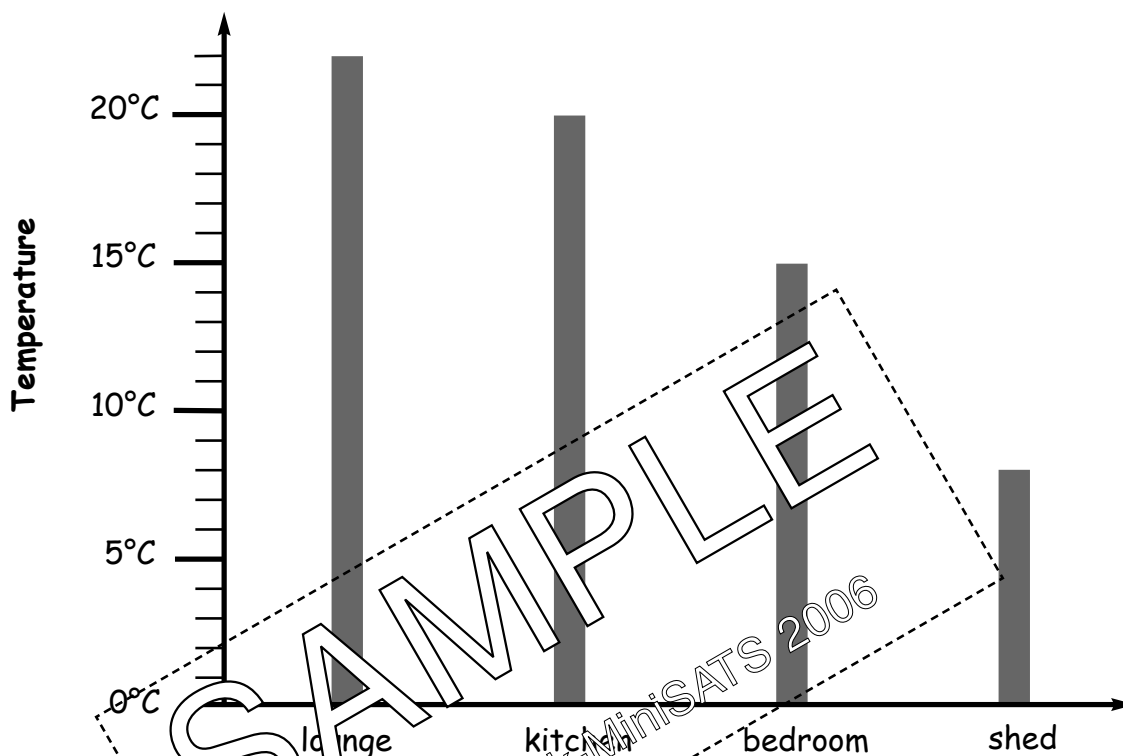
Tick (3) one box in each row to show what happens when...

	temperature increases	temperature stays the same	temperature decreases
its bulb is held in your hand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it is moved a few centimetres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it is placed in a bowl of hot water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it is placed in cold tap water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it is placed in an upright position	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
it is placed in a fridge for 1 minute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Temperatures at home - 1



The graph shows the temperature in different parts of a house at 2 pm on a winter's day. The shed is in the garden.



By how much is the lounge warmer than the kitchen? _____

By how much is the shed cooler than the kitchen? _____

Estimate the temperature outdoors on that winter's day. Give a reason for choosing your estimate.

3

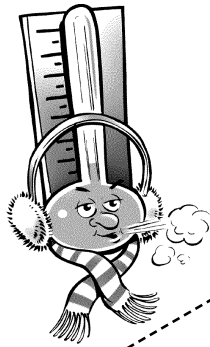
Temperatures at home - 2

The lounge is often the warmest part of a home.



Explain why the lounge is usually the warmest room.





At 2 am that night, the temperature outside fell to just 2°C.



Estimate the temperature in the lounge at this time.

Would you expect the lounge to still be at 22°C?
Explain your answer.



Keeping tea warm - 1

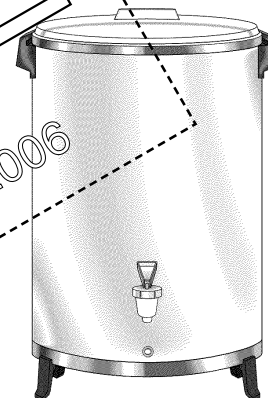
During the school summer fayre, tea is always served to visitors on the playing field. The problem is - the tea is always cold!



If the tea urns are left standing for more than 20 minutes, the tea becomes too cold. The pupils in Year 4 have to find a good way of reducing the amount of cooling by using a good 'urn cosy'.

The pupils are given 3 urns of tea.
The table shows what the urns are covered in.

Urn A	covered in a woollen jacket
Urn B	covered in cooking foil
Urn C	covered in anorak material

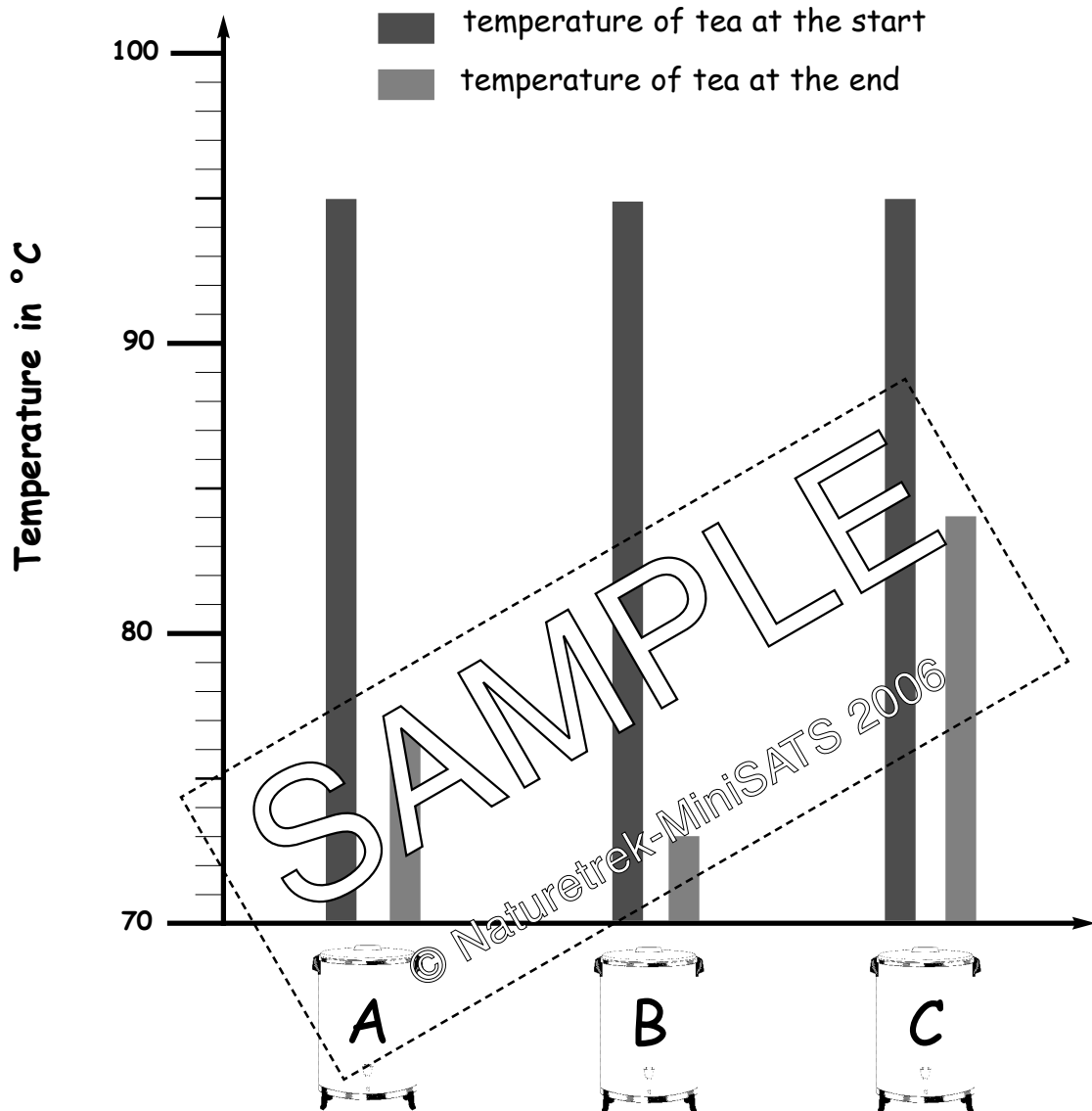


With regard to the tea in each urn, list 2 important things to check if this is going to be a fair investigation.

1. _____
2. _____

How would you find out which urn has the best 'cosy'?

The results of the investigation are shown in the graph.



Which tea had cooled the most?

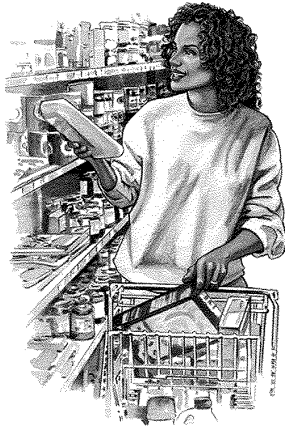


Which tea had cooled the least?



Which material is the best 'urn cosy'? Explain your reason.

Frozen peas



Mrs Ambrose lives over an hour's drive from her supermarket. By the time she gets home, her frozen food has often defrosted.

She tries out an expensive new 'coolbox'. She tests two bags of frozen peas - with and without the coolbox.



bag of frozen peas in coolbox

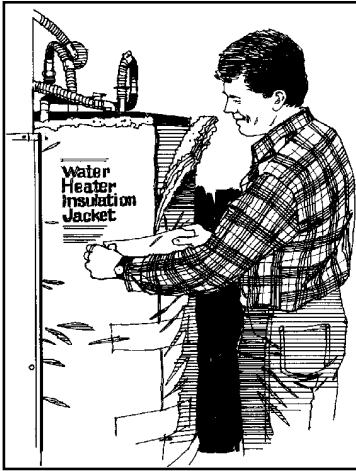


bag of frozen peas

To make it a fair test, what can you say about the bags of peas she chooses?

When she arrives home, how will she decide whether the coolbox has worked?

Instead of using a coolbox, what could she have done much more cheaply to stop the frozen peas melting too much?



What is this man doing and why is he doing it?

SAMPLE
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What is this man doing and why is he doing it?

Mrs Green's soup



*Mrs Green is making soup.
The soup is boiling hot.
She needs to stir the
soup for 5 minutes using
either a wooden or a
metal spoon.*

Which spoon feels hotter in the soup?

Tick (3) the two boxes that explain the reason for this.

metal is a good thermal insulator

wood is a good thermal insulator

metal is a good thermal conductor

wood is a good thermal conductor

Mrs Green also has a metal spoon with a plastic handle.
Explain why this one would be useful to stir the soup.
