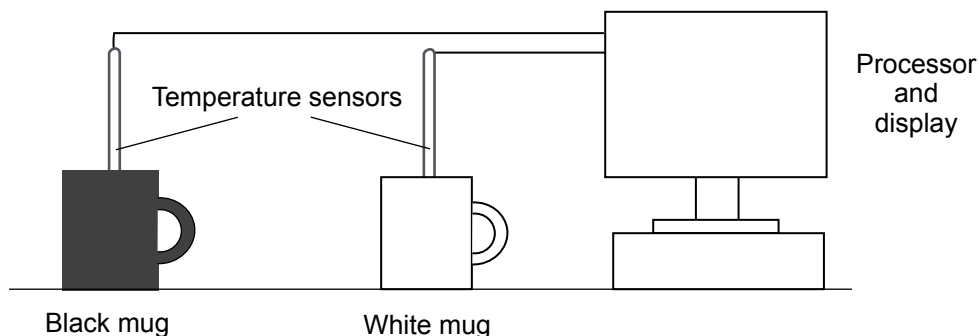


1 A student made the following hypothesis:

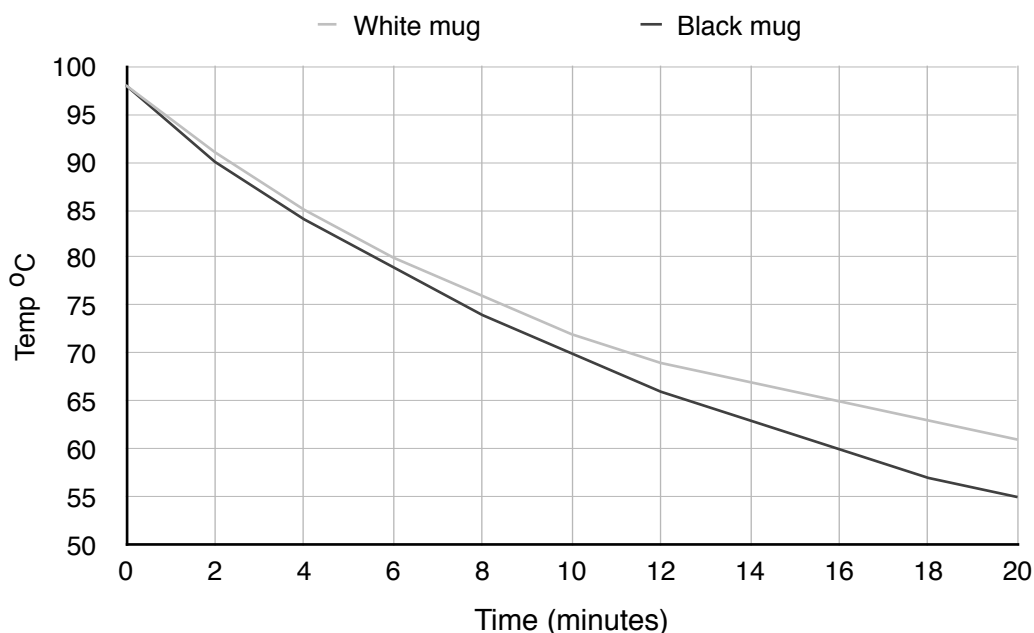
“It is better to use a white mug than a black mug for keeping drinks hotter for longer.”

The student decided to test this hypothesis by doing the following experiment.



The two mugs were filled with 250 cm³ of hot water. The temperature sensors recorded and displayed the temperature every 2 minutes for 20 minutes.

The graph shows the results recorded over 20 minutes.



1 (a) (i) What method of heat transfer is the student investigating? **[1 mark]**

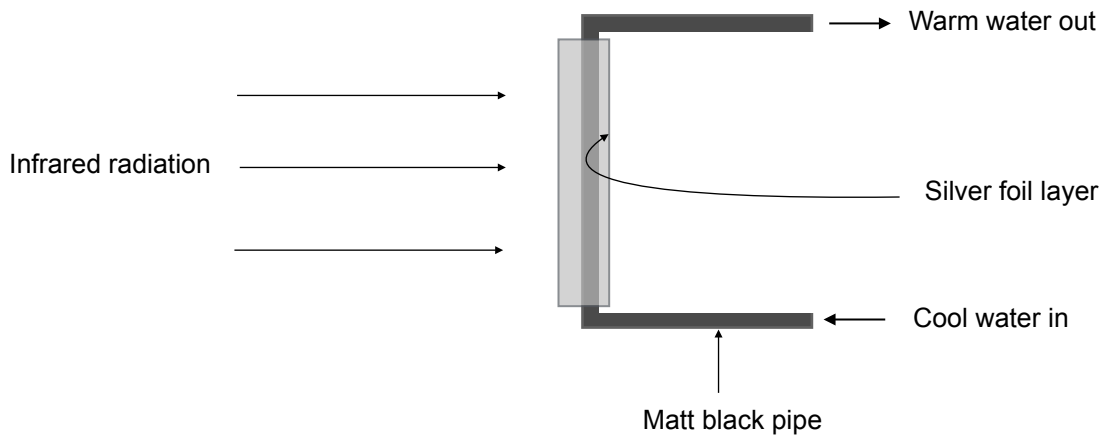
.....

1 (a) (ii) Was the student’s hypothesis correct? **[3 marks]**

Use the graph to help you answer.

.....

1 (b) The diagram shows a simple solar water heater.



1 (b) (i) Why is there a layer of silver foil on the back of the panel? [2 marks]

.....

.....

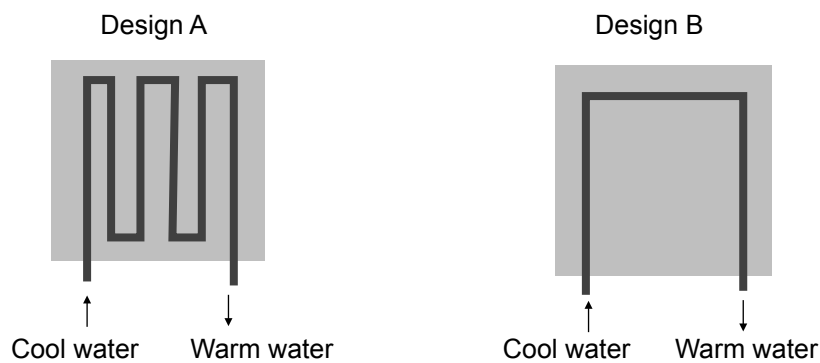
.....

1 (b) (ii) Why is pipe a matt black colour? [1 mark]

.....

.....

1 (b) (iii) The diagram shows two designs of solar water heaters as shown when facing the sun.



Suggest why Design A is better than Design B. [2 marks]

.....

.....

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(Total 9 marks)

End

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