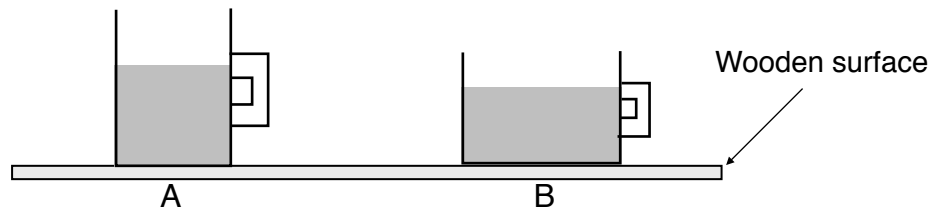


1 The diagram shows two different designs for tea mugs. Each mug is holding the same volume of tea.

Tea in the mugs cools down by various methods, including evaporation.



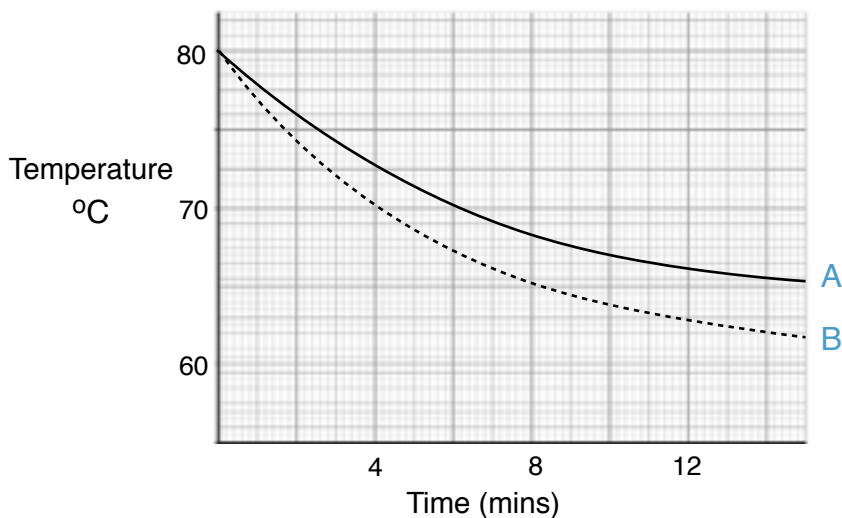
1 (a) (i) Explain how evaporation causes the tea to cool down. [3 marks]

There are attractive forces between molecules or particles in the tea. [1]
 Only the fastest molecules/particles have enough energy to break away from others. [1]
 These molecules or particles escape from the surface of the tea. [1]
 So the average speed or energy of the remaining molecules or particles goes down. [1]
 Lower average speed or energy of molecules means lower temperature of the tea. [1]

This is quite tricky to explain, but remember, it's about particles taking away energy from the hot liquid - tea in this case.

1 (a) (ii) The graph shows how quickly the tea cooled down in each mug.

- The mugs are both white and made of the same material.
- The volume of tea in each mug is the same.



Label each line to show the cooling of the two mugs.

Use the letters **A** and **B** from the diagram above.

[1 mark]

Explain your choice.

[1 mark]

Larger surface area means the liquid cools faster. [1]

1 (b) The tea cools down most rapidly over the first 4 minutes.

Explain why

[2 marks]

Larger temperature difference [1]

between the tea and the air. [1]

(Total 7 marks)

End