

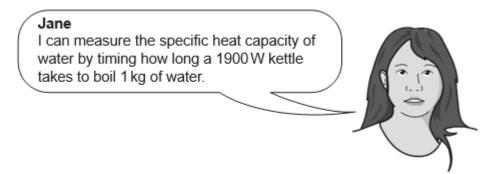
## GCSE Physics B (Twenty First Century Science)

J259/04 Depth in physics (Higher Tier)

**Question Set 27** 

Water can be used as a coolant to stop over-heating in systems such as car engines.

Jane does an experiment to find the specific heat capacity of water.



- (a) (i) Give one reason why Jane's result for the specific heat capacity of water will be inaccurate.
  [1]
  - (ii) Suggest one improvement to Jane's experiment, to get a more accurate value for the specific heat capacity of water. [1]
- (b) It takes the kettle 3 minutes to heat 1 kg of water to 100 °C from a starting temperature of 20 °C.

Calculate the specific heat capacity of water.

Use the equation: change in internal energy = mass × specific heat capacity × temperature change

Use the equation: energy transferred = power × time

1

Describe how heating water in the kettle to boiling point changes the energy stored within the water. [3]

## **Total Marks for Question Set 27: 9**



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