

GCSE Physics B (Twenty First Century Science)
J259/01 Breadth in Physics (Foundation Tier)

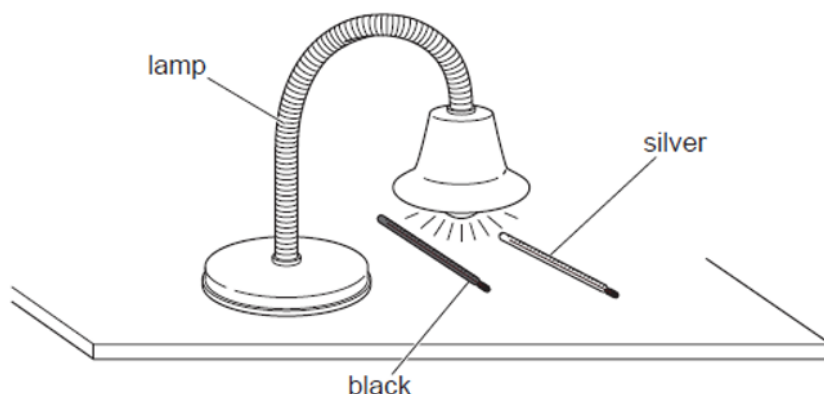
Question Set 11

1 Ben investigates how much radiation is absorbed by different coloured surfaces.

He uses two thermometers and a lamp.

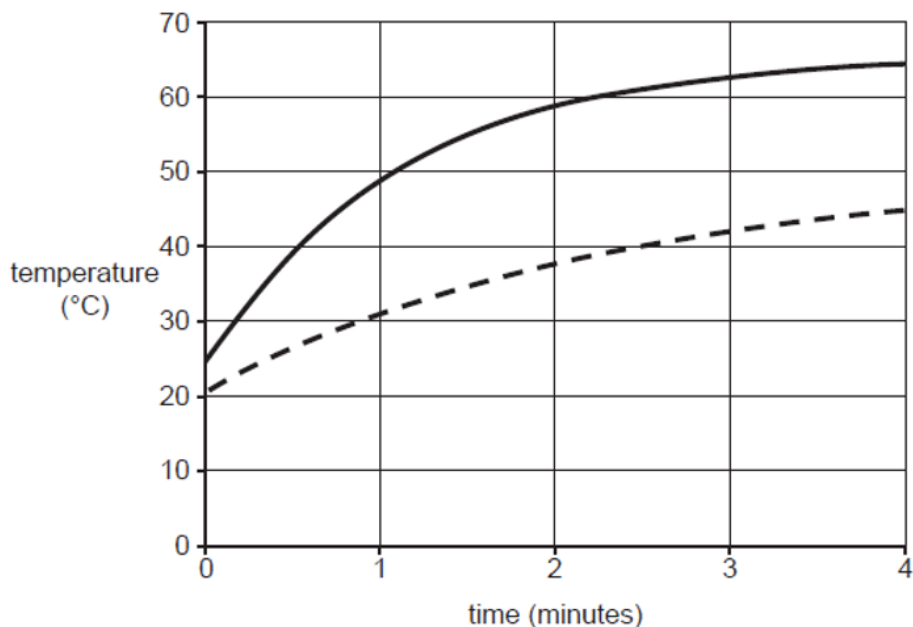
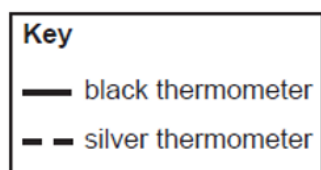
He paints one thermometer black and the other thermometer silver and places them under the lamp.

..



He records how the temperature of each thermometer changes over four minutes.

The graph shows his results.



(a) Describe **similarities** and **differences** between the results for the black thermometer

Similarities - temperature increases with time and both graphs level off

[3]

Differences - black goes up quicker in temperature and reaches a higher final temperature

(b) Explain the results of the experiment.

Black absorbs more radiation than silver and thus gets hotter quicker [2]

(c) Identify a weakness with Ben's method and suggest how it could be improved using information from the diagram or from the graph.

The initial temperature for black and silver is different so should start them at the same temperature [2]

Total Marks for Question Set 11: 7

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