8I Heating and cooling

Extension questions

Science Interactive LTD. PO BOX 50764 LONDON NW6 9AT email: sales@science-interactive.co.uk web: www:science-interactive.co.uk

Answer the following questions:

Click mouse to reveal answer

Q1. What type of energy is due to the motion of the atoms in a material?
Q2. What do we call a decrease in temperature?
Q3. How does heat move through a metal bar?
Q4. How is heat transferred from bottom to top of a room or an ocean?
Q5. How does energy reach the earth from the sun?
Q6. What type of material transmits heat easily?
Q7. What type of material transmits heat slowly?
Q8. What do we call a measure of the average kinetic energy of the particles in a substance?
Q9. Name an instrument used to measure temperature?
Q10. Name a plastic often used as a thermal insulator in its expanded form?
Q11. What word means something that can ignite (catch fire) easily?
Q12. Name a commonly used temperature scale based on the freezing and boiling points of water?
Q13. What do we call an increase in length, area or volume, often due to an increase in temperature?
Q14. What is the scientific term for "Heaviness", something's mass divided by its volume?
Q15. What word means to move or rest on the surface of a fluid because of its lower density?
Q16. What word means to take in something, for example heat or light?
Q17. What word means to bounce sound or light from a surface, for example?

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Answers:

A1. Heat
A2. Cooling
A3. Conduction
A4. Convection
A5. Radiation
A6. A good thermal conductor
A7. A good thermal insulator
A8. Temperature
A9. Thermometer
A10. Polystyrene
A11. Flammable
A12. Celsius
A13. Expansion
A14. Density
A15. Float
A16. Absorb
A17. Reflect

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multiple choice

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Click mouse to reveal answer

1: At what temperatures does water melt and boil at ?

A 0°C and 50°C

B 37°C and 100°C

C 0°C and 1000°C

D 0°C and 100°C

2: Which material is the best conductor of heat ?

A Plastic

B Iron

C Rubber

D Aluminium

3: Which method will reduce heat loss through the roof space of a house ?

A Double glazing

B Laying carpets

C Loft insulation

D Wearing a jumper

4: When a thermometer is placed in boiling water, the liquid rises because ?

A The particles become smaller

B The particles come closer together

C The particles stop vibrating

D The particles move apart

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multiple choice

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1: At what temperatures does water melt and boil at ?

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literacy in science

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Answer all the questions below:

Click mouse to reveal answer

1) Unscramble the following words:

sstate	ngmelti	sdoli	trmatuepere

2) Make <u>three sentences</u> using the following nine words or phrases:

materials celsuis heat transfer	heat up temperature conduction	change of state thermometer radiation convection

3) Match the word or phase with the right meaning:

Temperature	→	How heat energy is transferred through materials
Conduction	→	How heat is transferred in liquids and gases in currents
Convection	→	Measures how much heat energy an object has

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literacy in science

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Answer all the questions below:

1) Unscramble the following words:

states	melting	solid	temperature

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3) Match the word or phase with the right meaning:

Temperature	→	Measures how much heat energy an object has
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complete the sentence

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Place the right word or words to complete the sentence:

Click mouse to reveal answer

liquids	solids	degrees	wave	radiation	escaping
reduce	quickly	conduction			

a) The temperature of a substance is measured in _____ Celsius.

b) The temperature of an object depends on how _____ its particles are moving.

c) Heat energy can be transferred by _____ , convection and radiation.

d) Conduction in_____, is the transfer of heat by particles vibrating against one another.

e) Convection in_____and gases is the transfer of heat by currents.

f) Thermal insulators_____heat transfer to the surroundings.

g) Radiation is a_____which travels at the same speed as light.

h) Heat transfer by_____does not need a medium.

i) Good insulators prevent heat from_____because they contain trapped air.

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complete the sentence

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liquids	solids	degrees	wave	radiation	escaping
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a) The temperature of a substance is measured in degrees Celsius.

b) The temperature of an object depends on how quickly its particles are moving.

c) Heat energy can be transferred by conduction, convection and radiation.

d) Conduction in solids, is the transfer of heat by particles vibrating against one another.

e) Convection in liquids and gases is the transfer of heat by currents.

f) Thermal insulators reduce heat transfer to the surroundings.

g) Radiation is a wave which travels at the same speed as light.

h) Heat transfer by radiation does not need a medium.

i) Good insulators prevent heat from escaping because they contain trapped air.