**HEAT QUESTIONS**

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| --- |
| Explanations should start with a **statement** (don’t repeat the question). This should include the definition.Then **explain** by *linking* an idea (because/ therefore/ which means that/ etc). Then use the **example**. You can finish with the question, if you like. |

**CONDUCTION**

1. Explain why metals **conduct** better than glass and rubber.

*Conduction is....*

*Metals conduct well because the* ***particles****...*

*therefore...*

*Glass and rubber don’t because the* ***particles****...*

*therefore...*

*This means that metals can conduct well, but glass and rubber are very poor conductors (they insulate).*

1. Draw the arrangement of particles in a solid, liquid and gas and use the diagram to explain why solids **conduct**, but liquids and gases do not.

|  |  |  |
| --- | --- | --- |
| Solid | Liquid | Gas |

*Conduction is...*

*In solids the p\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are...*

*therefore...*

*Whereas in fluids (liquid and gas) the p\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are...*

*therefore...*

*This means that some solids can conduct, whereas liquids and gases cannot.*

1. Why does metal feel colder than rubber on a cold day, but hotter on a hot day?

*Conduction is...*

*In metals the ...*

*therefore on a hot day heat can be transferred by c\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the hot bike to your warm body.*

*On a cold day heat can be conducted by the metal from...*

*whereas rubber is an i\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, meaning it does not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because the....*

*therefore.....*

*So metals feel hot or cold depending on the temperature, but rubber doesn’t feel much different.*

1. Explain how wrapping frozen goods in layers of newspaper can help to keep it frozen for longer.
2. Explain why a metal electric kettle has a plastic handle.

**CONVECTION AND RADIATION**

1. Explain why the element of an electric kettle is at the bottom.

*Convection is...*

*As water is heated it and so becomes less and rises.*

*This is called...*

*If the element was at the top...*

*therefore...*

*This makes having the element at the bottom much more useful.*

1. Explain why hot air balloons most often operate in the morning, when the air is cool.
2. Explain how the vacuum flask (thermos) in the diagram keeps it’s contents hot.

*Convection is...*

Screw top

Silvered on the inside

Contents

Vacuum

Outer container

*The screw top lid...*

*Radiation is...*

*Silver.....*

*Conduction is...*

*The vacuum...*

*In this way heat transfer by , and is prevented in the thermos.*