Conduction, convection and radiation

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A rough guide as to how the marks are given is as follows:

6	will be given for work which is of a totally satisfactory, acceptable standard; if you get less than 6 you must improve the standard at once!
7–8	will be given e.g. when a lot of effort has obviously been put into the work or when the work is very clearly set out
9+	marks of 9 or more will rarely be given – to get this mark the work must demonstrate great effort and real clarity

If a question has one or a number of * before it then it contains points which are inherently difficult and which will be met more generally in subsequent years.

1. Will putting a coat on a snowman stop it from melting on a warm, sunny day? Does it matter whether the coat is dark or light in colour? Explain your answer in your own words.

2. Make a mug of tea or coffee and allow it to cool. Draw a diagram in your book, and write down what you see happening as it cools. If you could look at the particles in the wall of the mug, what you you think you would see? Where would the fastest liquid particles be, and what happens to them as the drink cools? *Try to draw a diagram of what is happening at the liquid surface.

3. Why is the heater in your hot water tank at home at the bottom? Can you explain how the water is heated? What would happen if the heater was at the top or *half-way down?

4. Draw a cross-section diagram of a vacuum (thermos) flask in your books. List the features that allow it to keep hot drinks hot. From your list select the **three** things that you consider are the most important and explain your choice. Remember to put which type of heat flow they prevent.