HEAT IN THE KITCHEN

Highlight key points below

When a substance is heated, its particles gain internal energy and move more vigorously. The particles bump into nearby particles and make them vibrate more. This passes internal energy through the substance by conduction, from the hot end to the cold end.

The particles in liquids and gases can move from place to place. Convection happens when particles with a lot of thermal energy in a liquid or gas move, and take the place of particles with less thermal energy. Thermal energy is transferred from hot places to cold places by convection.

All objects transfer energy to their surroundings by infrared radiation. The hotter an object is, the more infrared radiation it gives off.

No particles are involved in radiation, unlike conduction. This means that energy transfer by radiation can work when objects are not touching, even in space

Specification Link: Home School Project

During a Food Technology lesson, some students were wondering why the metal spoon gets hot, but the wooden handle of the saucepan does not. Use your knowledge and understanding to explain how the energy is transferred from the cooker to the end of the metal spoon. **Task:**

Show how the energy from the gas ring is transferred to the end of the spoon. Describe how the energy is transferred.

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Use particle diagrams to show what is happening.

Done	You might have:	2
	 Draw the saucepan and spoon. Use the key words 'metal', 'wood', 'water', 'insulator', 'conductor', 'conduction', 'convection' and 'radiation' to label the diagram. Draw arrows to show heat energy transfers from the gas ring to the spoon handle. Identify some energy transfers. 	
	Use the key words 'metal', 'wood', 'water', 'insulator' and 'conductor' to label the diagram.	-
	Draw arrows to show heat energy transfers from the gas ring to the spoon handle and the water. Evaluit cimple why anorgoin transformed from the bolt to	
	Explain simply why energy is transferred from the hob to the spoon.	ſ
	radiation.	ſ
	Label the diagram with a range of key words and short explanations to explain why the spoon gets hot but the wooden handle does not	
	 Use simple energy transfer diagrams to show heat energy transfers from the gas ring to the saucepan handle and snoon 	ļ
	 Explain why energy is transferred from the hob to the saucepan and spoon. 	
	Use particle diagrams to explain conduction.	
	• Label the diagram with a range of key words in detailed explanations to explain why the spoon gets hot but the	
	 wooden handle does not. Explain why energy is transferred from the hob to the saucepan and spoon. 	
	Use particle diagrams to explain conduction and	

convection.



Questions that you should ask yourself while completing this

What should I do first?

Is something confusing me?

Could I explain this to someone else?

Could I have used more scientific terms?

Where can I look for help?

Have I double checked what I need to include?

How can I do it better?