

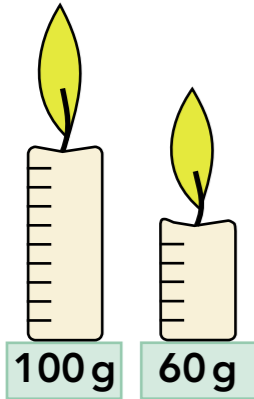
# Candle wax changes

Achieved?



To achieve Level 5 you will need to know about the properties of materials.

## Let's practise!



James lit a candle weighing 100g. After an hour, he noticed that it had become smaller. The candle now weighed 60g.

a) Explain why the candle weighs less after it has been burning for an hour.

b) What changes have taken place? Can these changes be reversed?

c) What might the candle be like in 1½ hours time?



**1** Read the question then read it again. **Three answers are needed. Answering the first one helps with the one that follows.**

**2** Think about the question. What does it tell you? **The candle weighs less after it has been burning – what has happened to the weight? There is much less wax than there was. The wax must have been burnt.**

**3** Remember the key facts. **Wax burns and forms new materials. These new materials are lost as gases.**

**4** Work through the problem. **Changes like this cannot be reversed! This is an example of a chemical change.**



## Science background

When lighting a candle the match melts some wax. The wick soaks up the liquid wax which then evaporates off the wick. The wax gas then burns and makes new materials called carbon dioxide and water. Both these new materials are in the form of gases.

### Burning wood

- Burning wood is the same as burning candle wax. The wood is a fuel, just like the candle wax is the fuel in the candle.
- Ash is a product of the fire. The weight of the ash left in the fire is less than the weight of the wood before it was burned.

# Thermal insulators

Achieved?



To achieve Level 5 you will need to recognise the properties of good thermal insulators.

## Let's practise!

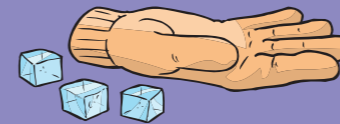


Cameron, Jennifer and Ian are discussing what will happen if they put an ice cube inside a woolly glove.

Ian says: I think the glove will melt the ice cube because my hands always get warm when I wear gloves.

Cameron says: I think the glove will keep the ice cube cold.

Jennifer says: I don't think the glove will make any difference at all. The ice cube will melt just as it would do if it wasn't in a glove.



a) Only one of them is correct. Who is it?

Ian  Jennifer  Cameron

b) Explain the reasons for your choice.



**1** Read the question then read it again.

**Read each comment carefully. Is the woolly glove really warm, or is it simply a good insulator?**

**2** Think about the question. What does it tell you?

**Think about the properties of thermal insulators. Most good insulators are made up of fibres. They are woolly or furry because the fibres trap air.**

**3** Remember the key facts.

**Remember that good insulating materials can keep things cool as well as warm.**

Good thermal insulators include plastic, wood, glass and air.

Good insulating materials can keep things cool as well as warm.

Metals are good thermal conductors.

A saucepan is made from metal so that it will heat up quickly, but the handle is made from wood or plastic so that it doesn't conduct heat to your hand easily.