

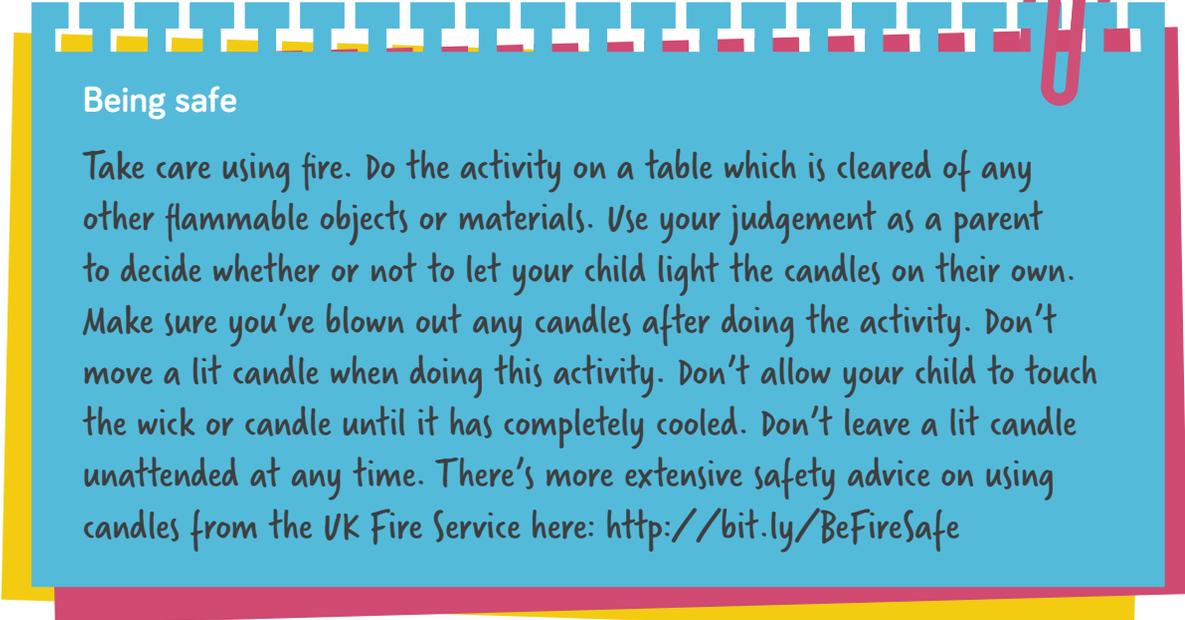


What you'll need

- At least one tea light or other small candle.
- Gas-powered cooker lighter (or long handled matches).
- Glass jars or glasses of various sizes.
- Stopwatch (maybe the one on your smartphone) or other way of measuring time.

What to do

- 1. Demonstrate how you can re-light a blown-out candle without touching the wick, as Lisa does in the video:** light a candle and let it burn for about 30 seconds. Have a lighter or match ready lit. Blow out the flame with a short, sharp breath. You should see wisps of smoke rising from the wick. Place the flame from the lighter or match into this smoke and you should see the flame jump from the lighter or match to the candle wick. This happens very quickly and can take some practice to get the knack of doing.
- 2. See what happens when you place a small jar / glass over a lit candle.** The candle should burn for a short while then go out. Then try out jars of different sizes. You can try measuring the time the candle burns for in each jar using a stopwatch. Try predicting which jar will make the candle last the longest, or how long each will let the candle burn for.



Being safe

Take care using fire. Do the activity on a table which is cleared of any other flammable objects or materials. Use your judgement as a parent to decide whether or not to let your child light the candles on their own. Make sure you've blown out any candles after doing the activity. Don't move a lit candle when doing this activity. Don't allow your child to touch the wick or candle until it has completely cooled. Don't leave a lit candle unattended at any time. There's more extensive safety advice on using candles from the UK Fire Service here: <http://bit.ly/BeFireSafe>



Questions to ask children

When candle is initially lit: what do you see happening to the candle?

When relighting it: what did you see happen? Why do you think that happens?

What do you think will happen if we place a jar/glass over the lit candle? Why?

What do you think will happen if we place a bigger jar/glass over a lit candle?

How can we compare the times the candle burns for in the different sized jars/glasses?

The science

Candles are made of wax. When you light the wick, the heat melts the wax and turns it into a liquid. This liquid is drawn up through the wick. As it travels up the wick, the liquid gets hotter and evaporates. It turns into a gas.

This gas mixes with the oxygen in the air and catches fire from the original flame. Once this happens, the candle flame comes from the burning wax gas, not the burning wick.

When you blow out the candle, the wick stays hot for a while, so the wax continues to evaporate. This means there's still some gas above the wick so when you bring a flame close to the wick, this gas catches fire and relights the candle.

A candle flame is the result of a chemical reaction between the wax gas and the oxygen in the air. When you trap a candle under a jar, it only has a limited amount of oxygen. When that runs out, the candle can't burn anymore, so the flame goes out.



Going Further

Learn more facts about fire: <http://bit.ly/FireFacts>

Make a carbon dioxide fire extinguisher for your candles:

<http://bit.ly/CO2Ext>

Watch a video on how candles are made: <http://bit.ly/CandlesMade>

Use a candle to suck water into a glass like Josh does at the end of the film: <http://bit.ly/WaterCandle>

