

CHOC SHOCK

Microwaves were discovered accidentally when a chocolate bar melted in a scientist's pocket during a lab experiment.

THE LAB

Eight pages of things to make and do

Kitchen Chemistry

Microwave mug cakes

Bake a delicious chocolate cake in less than two minutes.

What you need

- 4tbsp **self-raising flour**
- 4tbsp caster sugar
- 2tbsp cocoa powder
- 1 medium egg
- 3tbsp milk
- 3tbsp vegetable oil
- A few drops of vanilla essence
- 2tbsp **chocolate chips**

- Large mug
- Spoon
- Microwave

Instructions

- 1** Add the flour, sugar and cocoa powder to the largest mug you have. Then give everything a good stir with a spoon.
- 2** Crack in the egg and give it another good mix.
- 3** Next, add the milk, oil and vanilla essence and stir it up again. Drop in the chocolate chips.
- 4** Place your mug in the middle of the microwave and cook on high for 1½–2 minutes, or until it has stopped rising and looks firm.
- 5** Your cake will be very hot, so make sure it cools before you tuck in. You can add a dollop of squirry cream or ice cream on top.

Mix everything in a large mug.



How does it work?

Unlike a normal oven, which heats up food by warming the air around it, a microwave oven generates a type of electromagnetic waves, known as microwaves. These waves are a form of energy, just like visible light – but unlike visible light, you can't see microwaves. When they travel through food, water molecules (individual water particles) absorb some of the microwave energy. This causes the molecules to vibrate, and as they vibrate they bash into each other, which heats up the food. When your cake batter is heated, the baking powder in the self-raising flour reacts with water to produce bubbles of carbon dioxide gas, making the cake rise. The egg coats the bubbles to keep your cake fluffy, and oil stops it drying out. The sweetness comes from sugar and chocolate chips.

Allergy warning! Ingredients in **bold** are allergens (substances that cause allergic reactions). Learn more at tinyurl.com/SN-allergy

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