

Science with Zoe & Cogs - Experiment 1

Bake a chemistry cake

What happens to your cake when you leave out one of the key ingredients – oil, egg or baking powder?



Things you need:

Equipment:

small mixing bowl
4 large cup cake cases
baking tray
measuring spoons
pen
butter knife
wooden spoon

Ingredients:

24 tablespoons flour
12 tablespoons sugar
4 pinch of salt
6 pinch baking powder
8 tablespoons milk
6 tablespoons cooking oil
1 teaspoon vanilla
1 egg (beat until mixed)

What to do:

1 Adult : Preheat oven to 180 degrees celcius.

Label your 4 cupcake cases on the bottom as follows:

for the first cup:

1 - All Ingredients

For the second cup:

2 - No Oil

For the third cup:

3 - No Egg

For the fourth cup:

4 - No Baking Soda

4 For paper cup number **3** mix these ingredients in a bowl:

6 tablespoons flour
3 tablespoons sugar
1 pinch of salt
2 pinch baking powder
2 tablespoons milk
2 tablespoons oil
1/4 teaspoon vanilla

Stir until smooth and spoon into the paper case 3 and place on the tray.

2 For paper cup number **1** mix these ingredients in a bowl:

6 tablespoons flour
3 tablespoons sugar
1 pinch of salt
2 pinch baking powder
2 tablespoons milk
2 tablespoons oil
1/4 teaspoon vanilla
1/3 of the beaten egg

Stir until smooth and spoon into the paper case 1 and place on the tray.

5 For paper cup number **4** mix these ingredients in a bowl:

6 tablespoons flour
3 tablespoons sugar
1 pinch of salt
2 tablespoons milk
2 tablespoons oil
1/4 teaspoon vanilla
1/3 of the beaten egg

Stir until smooth and spoon into the paper case 4 and place on the tray.

3 For paper cup number **2** mix these ingredients in a bowl:

6 tablespoons flour
3 tablespoons sugar
1 pinch of salt
2 pinch baking powder
2 tablespoons milk
1/4 teaspoon vanilla
1/3 of the beaten egg

Stir until smooth and spoon into the paper case 2 and place on the tray.

6 Place your tray into the oven and bake for 15 minutes. Leave them to cool on a wire tray. Cut them into halves. Look at the texture, and compare the taste.

Science with Zoe & Cogs - Experiment 1

Bake a chemistry cake



What's going on?

A few things can happen when you bake a cake. Heating the batter helps some of the ingredients undergo changes which we call chemical reactions. Some of the chemical reactions to keep in mind while doing this tasty experiment are:

1. Heat helps baking powder produce tiny bubbles of gas, which makes the cake light and fluffy.
2. Heat causes protein from the egg to change and make the cake firm.
3. Oil keeps the heat from drying out the cake.

What else do you see?

Use this space to write about, and draw anything else you noticed while doing this experiment.