

# INVESTIGATING RAISING AGENTS - SUGGESTED RESPONSES

## Method 1 (air)

### Aim

Investigating physical raising agents. Does sifting flour really introduce air?

### Equipment

- Digital scales
- 2 measuring jugs or mixing bowls of exactly the same size
- Sieve
- 2 sheets of A4 paper
- 2 sticky labels and marker pen
- Ruler

### Ingredients

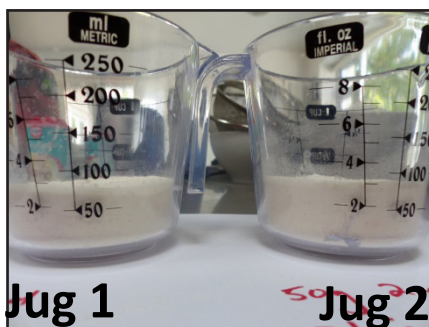
2 x 50g plain flour

### Method

- Weigh 50g plain flour into each measuring jug/mixing bowl.
- Tap the measuring jugs/mixing bowls so that the flour settles.
- Sift the flour from one measuring jug/mixing bowl onto plain paper. You should do this twice, then carefully transfer the flour back into the measuring jug/mixing bowl.
- Compare the volume of flour in each measuring jug/mixing bowl.

## Results

Compare the volume of flour in each measuring jug/mixing bowl.



	Jug 1 (unsifted flour)	Jug 2 (sifted flour)
Volume of flour	60ml marker	90ml marker

## Conclusions

Summarise your findings here.

Which bowl has the greatest volume of flour? Why?

Jug 2 (sifted flour) has the greatest volume of flour. This is because air was picked up when the flour was sifted, and it became trapped between the fine flour particles.

Explain how this might help a cake to rise.

When sifted flour is added to the cake mixture, and providing the flour is folded in gently to prevent the air being knocked out, the cake is then put in to the oven to cook. The air present will expand, and together with any other raising agents (such as steam from any moisture, for example from the egg or additional liquid, plus any chemical or biological raising agents which may also be added) the cake mix will expand with the heat. The proteins also present in the cake will coagulate and form a firm network of cake mix – this will then set the cake.

## Extension task

Conduct this experiment with a range of different flours. You could compare different brands (from economy to premium brands), and also look at supreme flours marketed specifically for cake making. Does the choice of flour make a difference to how much a cake will rise?