

Chapter 9: Transformations and reactions

Meringues

Ratings

MESS  DANGER  DIFFICULTY 

Theme

Psalm 34:8 ('Taste and see that the Lord is good'); Exodus 13:21 and 19:9 (God in the cloud); Psalm 119:103 ('Your teachings are sweeter than honey')

Equipment needed

Mixing bowls; hand or electric whisks; baking sheets (if baking at Messy Church) or paper plates (if taking home to bake); baking paper; eggs; caster sugar (one medium egg white per 55 g caster sugar)

Before you begin

Our experiment sees what happens as egg white is transformed as it is whisked. Egg white is made of protein and water. We will use the whisked egg to make delicious meringue. It is important to supervise to keep little fingers out from the inside of whisks. People will want to taste the mixture but remember it is made of raw egg which can contain salmonella bacteria (you could use powdered egg whites instead).

Experimental method

First separate the eggs – no egg yolk must go in your bowl at all. Use a separate bowl to do this and then pour in to prevent messing up a whole batch of eggs. Whisk the egg whites slowly at first, then faster. This will take a long time if you are using a hand-turned mixer but is great fun and leads to turn-taking! With an electric whisk, watch fingers and again take turns and get people to watch closely. Once you have white, stiff peaks the egg whites are ready.

Add the sugar slowly, a few tablespoons at a time, and whisk after each sugar addition. Be careful not to overbeat. Place two spoonfuls of mixture on to the baking paper and repeat as many times as necessary.

If your participants don't want to make the mixture, you could instead give each person a piece of baking paper with a mould/outline (cookie cutters, or make your own out of cardboard). They can spoon the mixture into their mould ready to be cooked.

Cook at home or in Messy Church depending on your oven space and time. Cook in the oven on a low heat for about 45 minutes, then turn the oven off, leaving the meringues inside for 15 minutes more.

Big thinking

When we whisk the egg white, two things happen: firstly, the whisk pushes through and unfolds the protein molecules in egg white; secondly, it traps air bubbles in the protein to make a foam. The oven dries out the foam to make meringue.

Big questions

Making meringue transforms the unattractive egg white to yummy meringue. How has Jesus transformed you?

'The people remained at a distance, while Moses approached the thick darkness where God was' (Exodus 20:21). Why do you think God appeared in a cloud rather than face to face? Do you sometimes feel your faith is foggy?

The Bible talks about tasting God and God's teachings being sweet. How have you found God to be 'sweet'?