IndusTRY AT HOME!

About this activity

In this activity you will investigate the ingredients in a festive mince pie.
Just like scientists in industry, you will separate, group and identify ingredients to find out what makes a perfect pie recipe.

Kit List

- ☑ 1 mince pie
- ☑ 1 tablespoon of sweet mincemeat
- ☑ 1 plate
- ☑ Round edged knife
- ☑ Tablespoon
- ☑ Cocktail stick
- ☑ Hand lens (if you have one)
- ☑ List of mincemeat ingredients from the packaging

Time: 1 hour

Watch out!

- Be aware of individuals who may be allergic to any of the ingredients used in mince pies or mincemeat, in particular those with nut allergies.
- At the end of the separation activity, the used mincemeat should not be eaten, but thrown away.

Important words to understand:

- brand
- change
- competitor
- examine
- group
- identify
- ingredient
- liquid
- manufacturing
- mixture
- non-reversible
- permanent
- reversible
- separate
- solid
- sort/classify

Not sure what they mean? You could use a dictionary to check (paper or online).

The Problem

The Perfect Pies company want to improve their festive mince pie recipe to make it the mince pie of choice this Christmas. They need to know what their competitors have in their mince pie mixtures that make them taste so good.

Mince pies are not made from just one thing. They are a mixture of different ingredients. The pastry is a mixture of ingredients that cannot be separated easily because they have been changed permanently by heat during baking. The sweet mincemeat is also a mixture of lots of ingredients and here is where your challenge lies.

Perfect Pies would like you to help by carefully examining one competitor's mince pies. You could choose a well-known brand or supermarket variety. You will need to use your separating, sorting and classifying skills to identify the ingredients. Good luck!

OUR METHOD

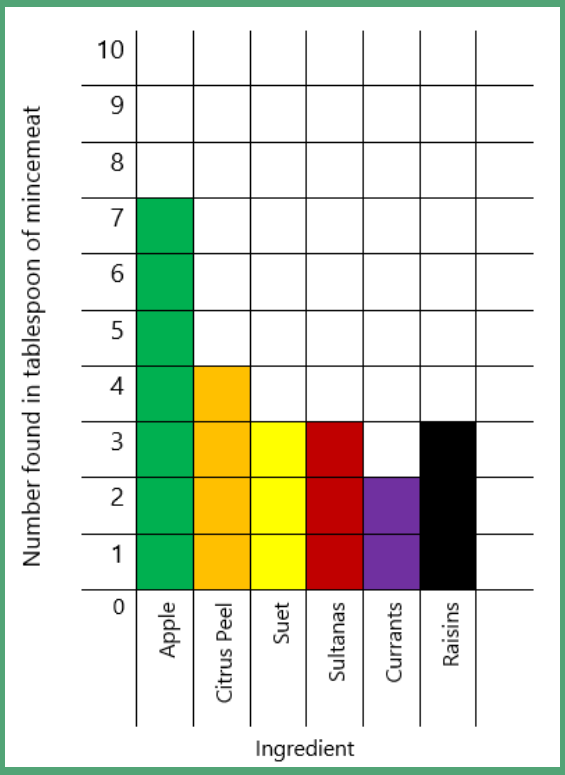
- Cut your mince pie in half using a round edged knife to reveal the pastry case and the sweet mincemeat filling
- Place a tablespoon of sweet mincemeat (from the jar) on to a plate and use a cocktail stick to separate the ingredients and sort them into groups (you can use a hand lens to take a closer look if you have one)
- Use a list of the mincemeat ingredients from the packaging to identify the ingredients you have grouped
- Examine the mincemeat from the pie and compare it to the mincemeat from the jar – make a note of similarities and differences

How you will solve the problem...?

Adapted from: Kitchen Concoctions

Recording your results – compare …

Bar chart



Pictograph

Ingredient	Number found in tablespoon of mincemeat
Apple	
Citrus peel	
Suet	
Sultanas	
Currants	
Raisins	

Video diary

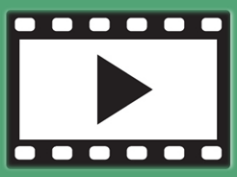


Photo diary

In writing

Once you have completed your observations and recorded your results, it is time to advise the Perfect Pies scientists which ingredients are used by one of their competitors

THEY WILL WANT TO KNOW…

- Which competitor's pies did you carefully examine?
- How did you separate and identify the ingredients?
- Are there any ingredients you could not see?
- What do you think happened to these ingredients?
- Which ingredients were there more of? Why do you think this is?
- Does the cost of an ingredient affect how much of it is used?

Write a short report or make a video to share your results with

Perfect Pies

Share it with us @ciecyork

TAKING IT FURTHER

Follow up activities:

- Watch this **short video** to see how manufacturing companies use sieves and sieving machines to separate their ingredients.
- Read the **Kitchen Chaos** cartoon strip to see how Sita and Cal deal with some messy mixtures in their home.
- Have a go at baking your own mince pies using this easy recipe.

Things to think or talk about:

- What mixtures have you eaten, used or seen today?
- What other mixtures can you find in your kitchen?
- Is it easy or difficult to separate and sort the different ingredients in your breakfast cereal? Why?
- How do materials change when they are heated or cooled? Can you think of any examples?
- What other reversible changes can you think of?
- What non-reversible changes can you think of?
- What type of scientist do you think would experiment with an explore mixtures?

Mince pies is the news

Have a sneak peek at this factory which makes 720 mince pies a minute.

Be amazed by the world's largest mince pie factory which uses 7000 tonnes of dried fruit.

Take a look behind the scenes in this factory which churns out 58 million mince pies a year.

Adapted from: Kitchen Concoctions