

WARNING!

Ask a grown-up for help when using a blender and handling hot juice.

THE LAB

Eight pages of things to make and do

Kitchen chemistry

Make hot spiced juice

Brew up a delicious drink with a kick of festive flavours to keep you warm in the winter months.

What you need

- Around 10 apples
- Knife
- Blender
- Sieve
- Two pieces of muslin
- Large bowl
- Half a stick of cinnamon
- 1 tsp whole cloves
- A mortar and pestle, or rolling pin and sandwich bag
- Ground nutmeg (optional)
- A wide-based pan



Whole nutmeg.

Instructions

- 1** Chop the apples into chunks, remove the cores and pop the apple chunks in the blender. Whizz them thoroughly – they should be a thick pulp.
- 2** Line the sieve with one piece of muslin over the bowl and pour the pulp into it. Gather the four corners to make a pouch then squeeze hard.
- 3** The juice and some pulp should drip into the bowl, leaving thicker bits in the muslin.
- 4** Crush the cloves and cinnamon with the mortar and pestle – or put them in a sandwich bag then bash with a rolling pin. If you're using ground nutmeg, add a pinch to the spice mix.
- 5** Pour the crushed spices into the second piece of muslin and tie the corners together to make a teabag-like pouch. Place this in the pan.
- 6** Pour the apple juice into the pan and heat it gently for around 20 minutes or so, until it is nicely warmed and tastes of the spice mix.
- 7** The juice is best served warm in glasses that will take hot drinks. Garnish with some cinnamon sticks or apple slices and serve with mince pies or Christmas cake.



Make sure to strain the pulp.

How does it work?

The fine weave of the muslin cloth acts as a filter. Filters are materials that allow liquids to pass through but trap solid pieces. A filter with smaller holes catches smaller solids than one with big holes. This technique, called filtration, is used in chemical laboratories separate mixtures of substances. Filtration is also used to remove dirt and chemicals from drinking water. Even tea bags are a simple filter, allowing the flavour of the tea to escape into the water but holding the tea leaves inside.

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