

# Science Ambassador's Christmas Activity Mat

## Hot Chocolate Science



A great investigation for a cold day! Do the marshmallows in your hot chocolate melt faster if the hot chocolate is warmer? There are all sorts of investigations you could do with hot chocolate and marshmallows. This one is taken from <https://www.science-sparks.com/hot-chocolate-science/>

Note: adult supervision required!

## Do you want to build a snowman?

Can you build a **marshmallow snowman**? This is a super simple **science investigation** where children test different strengths of icing sugar to discover which sticks the marshmallows together the best.



Click on the link below to find detailed instructions.

<https://www.science-sparks.com/marshmallow-snowman/>

## Santa's Magic Milk

You will need: -

- whole fat milk
- green food colouring
- red food colouring
- glitter
- washing up liquid and a small plate
- cotton buds
- shallow bowl



The Activity

- Pour some milk in the bowl.
- Sprinkle glitter on top of the milk.
- Then add small drops of food colouring at the edge of the bowl.
- Dip the cotton bud in the washing up liquid.
- Place the cotton bud in the centre of the milk - watch the magic!
- The food colouring will slowly begin to swirl and the glitter will jump to the edge of the bowl.

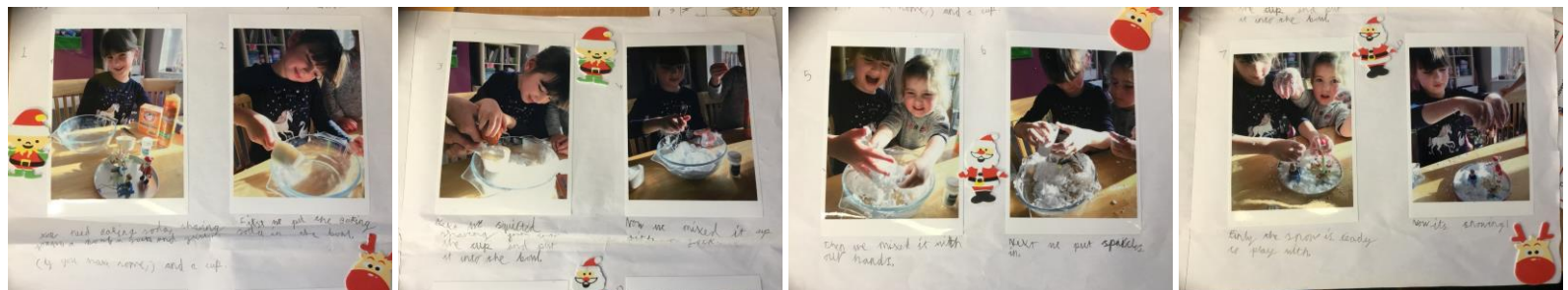
What's happening?

In the full fat milk, the fat is stuck together with little bonds. The washing up liquid easily breaks those bonds making the fat molecules quickly move away from each other. As the pepper is sitting on top of the milk, it moves with the fat. This is how washing up liquid helps to remove the grease from dirty plates.

## Making snow

Have fun making snow!  
Click on the link below for more details

<https://playtivities.com/how-to-make-snow/>



## Crystal-frosted Christmas Decorations



Did you know you can make fantastic frosted decorations using Epsom salt and water? Find out how in this fun festive experiment. These Christmassy crystals are made with the power of chemistry. Please note - this activity will require adult supervision!

<https://www.bbc.co.uk/teach/terrific-scientific/how-to-make-crystal-christmas-decorations/z47t47h>

## Christmas Themed Bath Bombs

Jazz up these bath bomb recipes by adding red or green food colouring, glitter or other Christmas related sprinkles or essential oils. If you have Christmas cookie cutters or ice-cube trays, perhaps you could even use those as a mould. <https://www.redtedart.com/bath-bombs-recipe-gifts-kids-can-make/>



## Christmas Chromatography

Make some totally original Christmas decorations!

<https://fun-science.org.uk/colourful-christmas-science-experiment/>



## Fizzing Rocks

This activity can be given a 'Christmassy' feel by moulding the fizzing rocks into snowmen, Christmas tree or gingerbread men shapes. Children could also use a biscuit cutter to help them mould the shapes.

[Baking Soda Experiment - Fizzing rocks \(science-sparks.com\)](http://science-sparks.com)



## Christmas/Winter shadows

In this investigation, you are going to make a Christmas/winter themed puppet and see what happens to its shadow.

**What is a shadow?**

A shadow is created when something blocks light.

**Questions to investigate**

What do you think will happen when you move your Christmas/winter puppet closer or further away from a light source?

What do you think will happen when you change the direction of the light source when it is pointing at your Christmas/winter puppet?

How to make a puppet:

1. Draw something that reminds you of Christmas or winter onto a piece of card/paper (don't make it too small or big).
2. Attach it to a stick/lollypop stick/pen or pencil with tape.
3. Place the puppet in front of a light source against a wall/surface.



**Safety tip**

Be careful when cutting out your puppet. Make sure an adult is with you. Don't look directly into the light source.

