

Bath bombs

Aim: to demonstrate a chemical reaction that produces a gas when reactants are in the correct state.

What you will need:

Cookie/biscuit cutters
Bicarbonate of Soda
Citric Acid
Food Colouring (if desired)
Essential oils (if desired)
Water

How you do it:

Ask children to wear their goggles for this experiment, as citric acid can be irritating in eyes. There will also be disposable gloves for people to wear.

1. Mix 1 tablespoon of citric acid with 2 tablespoons of bicarbonate of soda
2. Add a drop of food colouring if desired.
3. To bind the ingredients together spray with a little water, just enough to bind the ingredients but not for them to react (No fizzing is heard/seen).
4. Press the mixture into a cookie cutter mould and leave to set for at least 15 minutes
5. Store in a dry environment, such as a lunchbox, until ready to be used.
6. Add to your bath and watch it fizz!

How it works:

Bicarbonate of soda and citric acid are dry powders and only when they are added to water do they react. The citric acid dissolves in the bath water and reacts with the bicarbonate of soda. This reaction releases carbon dioxide which makes the water 'fizz'.

Citric acid + Bicarbonate of Soda \longrightarrow water + Trisodium citrate + carbon dioxide

Risk assessment Control measures

1. Participants must wear gloves to take part in this activity
2. Adult / parent supervision of children to be encouraged

Possible questions that may be asked:

- Why do we add water to make it stick and it doesn't react?

A little bit of water is not enough to cause the reaction need lots of water (e.g. bath/ beaker of water)

- What happens if we add too much water while making the bath bomb?

The citric acid and bicarbonate of soda will begin to react, you can stop this by adding more of the reactants which should stop the reaction from taking place.

Other similar experiments:

Sherbet

Use bicarbonate of soda and vinegar to produce carbon dioxide to blow up balloons
QR code goes to a video of how to carry out the bath bomb experiment on learn chemistry.

<http://www.rsc.org/learn-chemistry/resource/res00000913/changing-materials-demonstrations>