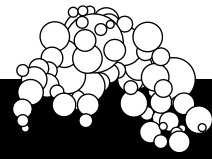
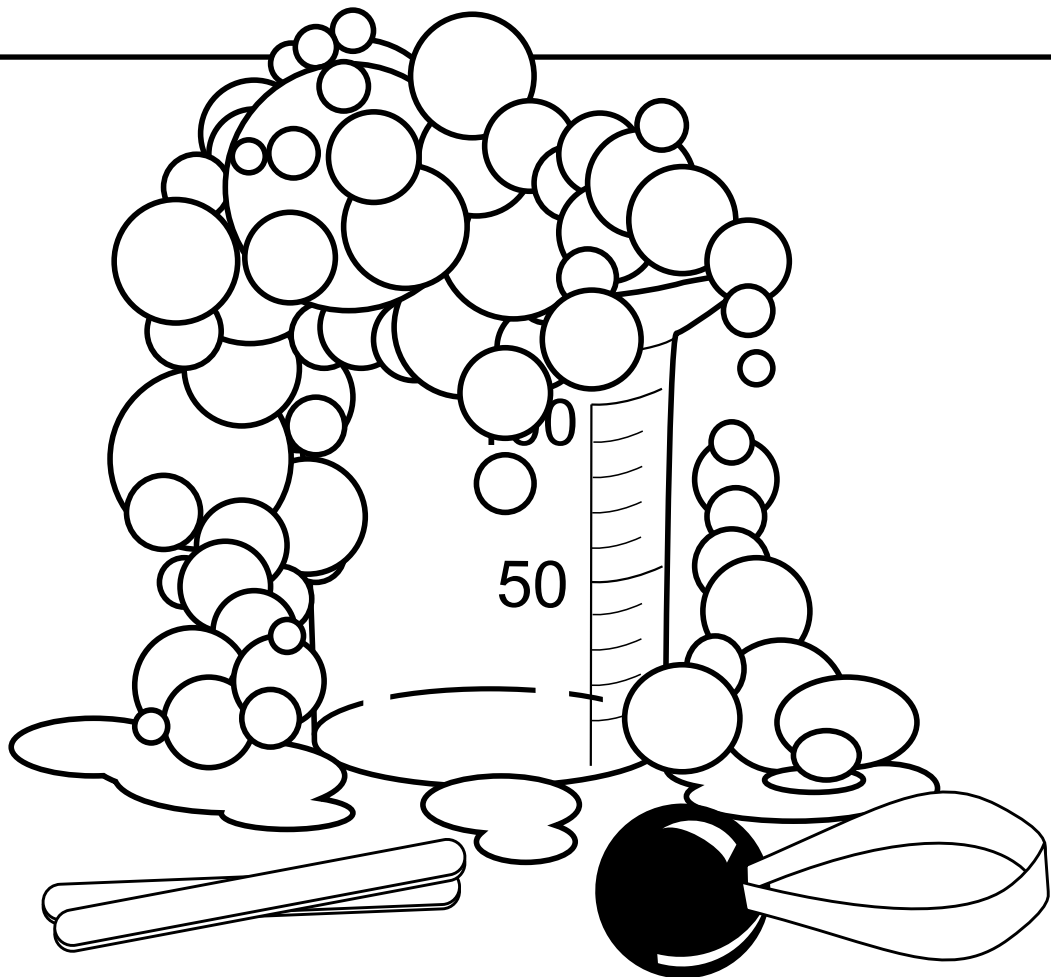


Teachers Notes

BATH BOMB FACTORY



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INTRODUCTION

BATH BOMB FACTORY is a fun activity that promotes scientific thinking. It allows children to explore materials and find out about cause and effect.

Pupils will enjoy making a selection of scented bath bombs and foams and will learn the appropriate ways to handle chemicals and equipment.

The Bath Bomb Factory activity box comes with a comprehensive set of instructions and safety procedures. The kit includes all that is needed to complete the experiments, including safety gloves etc.

BATH BOMB FACTORY activities are appropriate for pupils in K.S.2.

BATH BOMB FACTORY activities can be linked to the National Curriculum;

S.C.1 Scientific enquiry.

1. To establish links between cause and effects.
2. Investigative skills; To think about what might happen.
3. To use simple equipment and take action to control risks.
4. To observe and record results.

S.C.3 Materials and their properties.

1. To recognize the differences between solids and liquids.
2. To describe changes that occur when materials are mixed.
3. To recognize that some solids dissolve.

BATH BOMB FACTORY

Links can also be made to the Q.C.A. Units of study;

3C Characteristics of materials.

4D Solids and liquids and how they can be separated.

5C Gases around us.

5D Changing state.

6C More about dissolving.

6D Reversible and irreversible changes.

OUTLINE

BATH BOMB FACTORY involves a chemical reaction between two compounds. **Sodium Bicarbonate** and **Citric Acid**. When these are combined, a new compound is formed called **Sodium Citrate**. At the same time, gas is produced, **Carbon Dioxide**. When Bath Bombs are submerged in water, the escaping gas can be seen as bubbles.

This experiment gives lots of opportunity for pupils to observe gasses and how they behave. It can be an introduction to other work on gases, particularly Carbon Dioxide and discussions on the greenhouse effect.

More information on the science involved in the BATH BOMB FACTORY activities can be found in the instruction manual.

Many scientific experiments with BATH BOMB FACTORY are suggested in the instruction manual. The following notes relate to how these activities can be related to classroom activities.

INFORMATION RELATING TO CLASSROOM ACTIVITIES

The best learning opportunities are had when pupils can have a 'hands on' experience.

It is assumed that pupils will be working in groups of 4 or pairs if equipment allows. These activities can be modelled by the teacher for pupils to follow, but opportunities should be taken to allow pupils to get up close to see, smell and feel the results.

Additional equipment needed;

Extra safety gloves.

Hand lenses.

Timers or stop watches.

Additional food colouring (optional).

Additional fragrances.

CARE SHOULD BE TAKEN WITH THESE (optional).

A background knowledge of the compounds to be used would be useful.

All three 'chemical' powders used in the experiments can be found in many foods.

Pupils can find Sodium Bicarbonate in recipes that involve cake making for example. It is used as a raising agent.

Corn starch can be found in many foodstuffs. It is listed in the ingredients for many products from ready made sauces to baked beans.

Citric acid is to be found in fruit squashes and drinks etc.

A collection of tins packets and bottles could be assembled for pupils to sort.

INFORMATION RELATING TO CLASSROOM ACTIVITIES

Everyday foodstuffs could include;

(citric acid) fruit drinks, juices and squashes, tomato soup, marmalade, tortilla chips, packet soups...

(sodium bicarbonate.) baking powder, cake mixes, health salts.

(cornstarch.) custard powder, ready made sauces, baked beans, Pringles, packet mixes.

As a homework activity pupils could collect or make a list of items that contain these 'chemicals'.

Activity sheet 1 relates to making the bath bombs and requires the pupils to list their equipment and then to write step by step instructions for another pupil to follow.

Activity sheet 2 encourages pupils to look for examples of products that contain the same chemicals that they used in activity 1. It encourages pupils to think about why these ingredients are included in food stuffs and can lead to discussions about what purposes these might serve. It requires pupils to record their findings on a table.

Activity sheet 3 encourages pupils to carry out a fair test and measure and record findings accurately. The test changes one factor each time, that of temperature. (This may require some adult supervision as it involves hot water). This will provide opportunities for pupils to make predictions and compare results. Pupils will need additional beakers and timers to complete the activity.

BATH BOMB ACTIVITY SHEET 2

LEARNING MORE ABOUT YOUR BATH BOMBS

Find the containers of the 3 powder chemicals used in your experiment.

List them below.

1)

2)

3)

Select 10 or 12 items from the collection of foodstuffs. Find the list of ingredients on the label. Look for the items you listed above. It might be written in a slightly different way. (e.g. bicarbonate of soda, rather than sodium bicarbonate).

Sort the items into the 3 boxes below.

Sodium Bicarbonate	Citric Acid	Corn Starch

BATH BOMB ACTIVITY SHEET 3

MIXING SODIUM BICARBONATE WITH CITRIC ACID.

EQUIPMENT.

You will need;

- 3 plastic beakers.
- 2 plastic spoons. Mixing stick.
- Jug of very cold water.
- Jug of tepid water.
- Jug of hot water.
- Second timer or stop watch.
- Paper and pen to record times.
- Newspaper on table.
- Container of citric acid.
- Container of sodium bicarbonate.
- Safety glove.
- Goggles.

METHOD

1. Put on safety gloves and goggles.
2. In each beaker, measure 1 level spoon of each powder.
3. Mix the dry powders with a stick.
4. Set the stop watch or timer to begin.
5. Pour cold water to half fill the first beaker.
6. Time how long the gas bubbles last. Stop when the bubbles cease.
7. Write down how many seconds the mixture fizzed.

Now repeat the experiment with beaker 2 and the **tepid** water.

Finally repeat the experiment with the **hot** water.

BATH BOMB ACTIVITY SHEET 3 CONTINUED

Record your findings on the table below.

An experiment to observe and compare the effects of different temperature water on a compound mixture of sodium bicarbonate and citric acid.

	Cold Water	Tepid Water	Hot Water
Number of seconds that the mixture fizzed.			

What else did you notice about the mixtures?

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Draw what happened below.

