

Teachers' Notes

Health



The British Soft Drinks Association represents the UK's manufacturers of soft drinks, including fruit juices and bottled waters. Its education programme is intended to promote understanding of the importance of a balanced diet, an active lifestyle and adequate fluid intake in maintaining good health, and to promote awareness of the soft drinks industry as a manufacturing industry. The programme has no commercial function and mentions no companies and no brands.

Introduction

This pack aims to raise children's awareness of:

- The importance of water to living things
- The water cycle and changes of state
- How water is treated to make it safe
- A healthy diet and the importance of fluid in a balanced diet

Using this pack

This pack could be used for a long project, or individual activities can be used to supplement ongoing work throughout the school year. It provides references to the English National Curriculum, and provides opportunities that relate to the non-statutory guidelines for Personal, Social and Health Education and Citizenship as well as the programmes of study for Science, Mathematics, and Design and Technology. Many of the activities have been pitched at Key Stage 2 pupils but can be easily adapted for use with Key Stage 1.

For Science and Design and Technology activities, please follow your school guidelines on health and safety. You may be asked what the difference is between 'Best before' date and 'Use by' date shown on products. It is simply that if you eat or drink something after the 'Best before' date it may not taste as good as it should, but you should never eat or drink anything that is past its 'Use by' date.

The Science processes used by the children will depend on the way you introduce the activity, and to the degree that the children are able to investigate independently. There are opportunities throughout the pack for the children to ask questions, discuss, observe, describe their findings and reflect on their work.

Tables provide National Curriculum references for the activities for Key Stage 2 and, where appropriate, Key Stage 1. It is likely that the copy masters are most suitable for direct use with Key Stage 2 children. Many Key Stage 1 teachers, however, may like to share the information with their children and will find value in using the sheets as session plans.



Summary of information and activities

No.	Information	Activity
1	Water and us Proportions of water in different parts of the body. How we get water in. How we lose water	Colouring activity – looking at the proportions of water. Construction of pie charts
2	Do all living things need water? Uses of water in animals and plants	Sorting exercise – design a desert plant
3	Water in and out How we gain and lose water	Keeping a drinks diary; analysis of class results
4	Water in different states Changes of state	Cartoon strip
5	Where do we get our water from? Information about the water cycle. Proportions of the world's water	Water cycle jigsaw
6	Making water drinkable How water is treated	Separating things from water
7	Reading the labels Explanation of labels	Finding out what is in soft drinks
8	What do we get from our food and drink? Nutrition information from labels	Peer teaching exercise on aspects of a healthy diet – poster making
9	A question of taste How to make lemonade	Taste tests of lemonade with different proportions of sugar and/or sweetener added
10	Drinks detectives Health and safety rules about drinking and littering	Drinks detectives – spotting mistakes on a poster

Curriculum Grid

Activity	Curriculum reference Key Stage 1	Key Stage 2
1 Water and us	Science: Sc1 2h	Mathematics: Ma2 2d; Science: Sc1 2h
2 Do all living things need water?	Science: Breadth of Study 2a Design and Technology: 1a	Science: Sc2 5b Design and Technology: 1a
3 Water in and out	PSHE: 3a	PSHE: 3a
4 Water in different states		Science: Sc3 2d, 2e
5 Where do we get our water from?		Science: Sc3 2d, 2e
6 Making water drinkable		Science: Sc3 3a, 3b, 3c, 3d, 3e
7 Reading the labels		PSHE: 3a; Science: Sc3 3c, 3d
8 What do we get from our food and drink		PSHE: 3a; Science: Sc2 2b
9 A question of taste	Design and Technology: 2f	Design and Technology: 2f; Science: Sc3 3b
10 Drinks detectives	PSHE: 3a, c	PSHE: 3a

Lesson Plans

Activity 1 *Water and us*

Learning Objective

Children will gain awareness of the importance of water in their lives, and how much water is contained in living things.

National Curriculum links

KS1: Science: Sc1 2h

KS2: Mathematics: Ma2 2d; Science: Sc1 2h

Organisation

Class (introduction)

Individual work (activity)

Resources

2 x 2-litre bottles of water

Copy masters A and B

Crayons

(for extension work: graph paper, compasses, protractors or ICT access)

Introduction

Show the children the bottles of water. Ask them to tell you what they use it for.

Activity

Give out Copy masters A and B. The children should write out a list of a day's activities that involved water and then compare their list with a friend's. Copy master B is a colouring exercise to show how much water is contained in living things.

Show the children the two bottles. Ask them to imagine what life would be like if they were only allowed 4 litres of water each day and discuss this in small groups.

Plenary

Discuss with the children how their lives would change if they did not have unlimited water.

Extension work

Display the proportions of water as pie charts.

Activity 2 *Do all living things need water?*

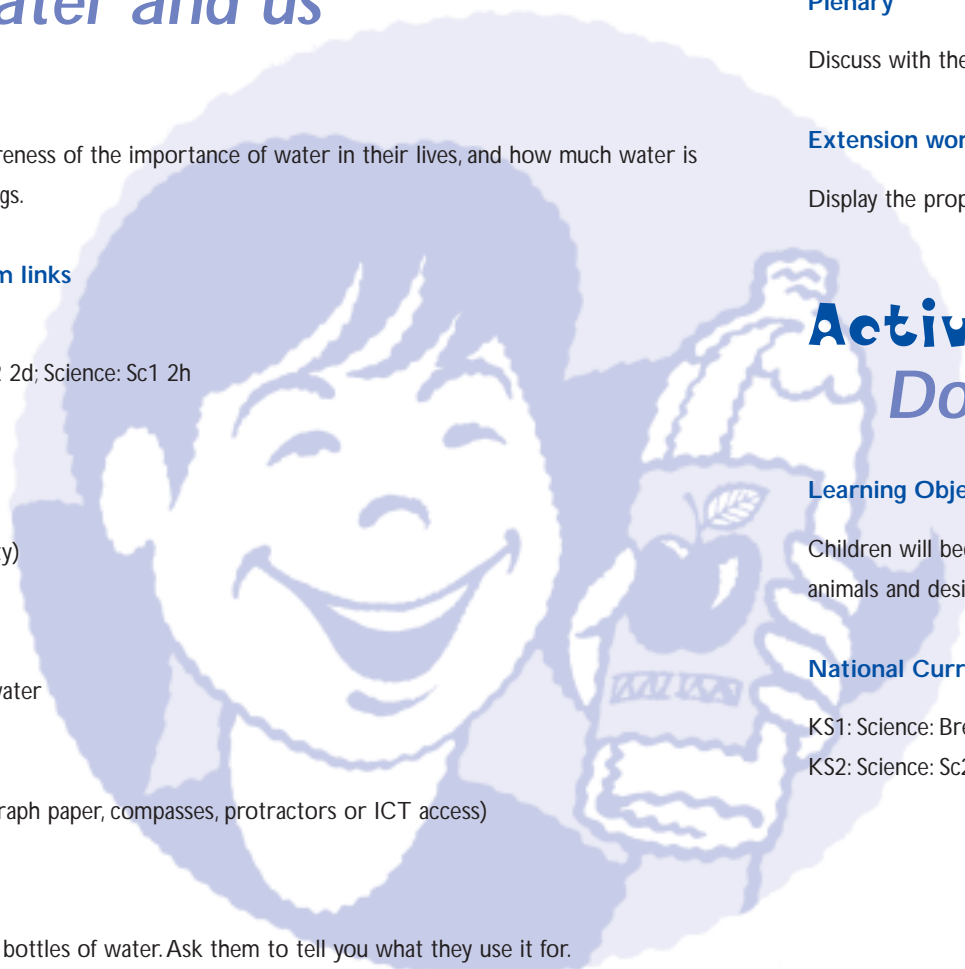
Learning Objective

Children will become aware of the importance of water for living things. They will research desert animals and design a desert plant.

National Curriculum links

KS1: Science: Breadth of Study 2a; Design and Technology: 1a

KS2: Science: Sc2 5b; Design and Technology: 1a



Key Vocabulary

desert, roots, leaves, stem, evaporate

Organisation

Individual work (activity)

Resources

Copy masters A and B

Cactus plant/picture of cacti/succulent plants

Access to Internet (optional); library resources for research

Introduction

Recap on the last activity by asking the children why water is important. Give out Copy masters A and B. Explain that in some areas, such as deserts, there is very little water. What sort of plants and animals live in the areas? Ask the children to research and make a list of the animals and plants they find.

Activity

Show the class a cactus/picture of a cactus or desert plant. What features might be particularly useful? Encourage children to think about:

thick stem for storing water

no leaves (reduced to spines)

spines to protect the plant.

Challenge the children to design a desert plant and to label the special features.

Plenary

Display the pictures and ask the children to explain their pictures to the class.

Extension

Use non-fiction books to find out how animals are adapted to desert regions.

Activity 3

Water in and out

Learning Objective

Children will find out how much they drink in a day. They will understand the importance of drinking enough.

National Curriculum links

KS2: PSHE: 3a

Key Vocabulary

average

Organisation

Individual work (diary)

Class (collation of results)

Resources

Copy masters A and B

Introduction

Give out Copy master A and let the children read through it as background information and answer the questions. Using Copy master B, ask the children to write down everything they drink for one week. They should try to put down how much they drink (a glass, a can, a mug) as well as what they drink. Note – you will need to allow sufficient time between this introduction and the activity. You could ask the children to keep a diary for their whole family.



Activity

Each child should count up how many drinks they had each day and work out the average number of drinks they had. The class information should be collected as a tally chart and children could draw a bar chart of the results.

Plenary

Children should compare what they drink each day with the figure of 6–8 glasses a day on the copy master.

Extension

Children should try to work out, by experiment, how much drink they had by measuring the amount of water contained in cans, cups and mugs.

Activity 4

Water in different states

Learning Objective

Children will understand that water can exist as a solid, liquid and gas.

National Curriculum links

KS2: Science: Sc3 2d, 2e

Key Vocabulary

evaporate, condense, melt, solid, liquid, gas, vapour, state, cold, hot

Organisation

Individual work

Resources

Ice
Water
3 transparent plastic beakers
Electric kettle
Copy masters A and B

Introduction

Fill up one of the beakers with ice and two with water. Show the children the beaker of ice and one of the beakers of water. Ask them to describe the differences between the two (appearance, temperature). Pour the second beaker of water in the kettle and switch it on. Ensure that children are at a safe distance from the kettle. Ask the children what is happening in the kettle (heat is added to the water). Show the children the steam coming out of the spout. What makes water change from a solid to a liquid, and a liquid to a solid? Show the class the beaker of ice. There should be water condensing on the outside. Where did this water come from?

Activity

Read through the information with the children. Explain that this is why when people cook or leave a kettle on to boil, the kitchen seems full of steam, as the molecules of water are a long way apart, but in water they are close together. Introduce the vocabulary 'condense, evaporate, melt'. Explain that water can evaporate without being boiled – that's why spilt water and puddles disappear. The children should then draw a strip cartoon about water being made into an ice cube and then being put in a drink.

Plenary

Invite children to show their cartoons.

Extension

Continue the cartoon to include what might happen to the water if someone drinks it.

Activity 5

Where do we get our water from?

Learning Objective

Children will understand the main processes in the water cycle.

National Curriculum links

KS2: Science: Sc3 2d, 2e

Key Vocabulary

sun, clouds, rain, rivers, sea, evaporation, condensation

Organisation

Individual work

Resources

Scissors
Glue
Copy masters A and B
Plain paper

Introduction

Ask the children where we get our water from to drink. Where else do you find water? Where would you find water as a solid/liquid/gas?

Activity

Give out Copy masters A and B. Ask the children to read the information carefully and then cut out the pieces of the jigsaw, put it together, then stick it onto a sheet of paper. The children should then choose words from the list provided to write on their completed puzzle.

Plenary

Reinforce children's understanding by asking the following questions.

What part does the sun play in the water cycle? Where does the water change from a liquid to a gas? Where does the water change from a gas to a liquid? Where do you think the water is most pure?

Extension

Add the words 'gas' and 'liquid' to the diagrams.

Activity 6

Making water drinkable

Learning Objective

Children will be aware that water is treated to make it safe to drink, and that drinking water from an unknown source is unsafe. They will experiment with separating mixtures.

National Curriculum links

KS2: Science: Sc3 3a, 3b, 3c, 3d, 3e

Key Vocabulary

screen, filter,

Organisation

Class (introduction), pairs (activity)

Resources

Transparent plastic beaker of tap water
Transparent plastic beaker of muddy water
Copy masters A and B



Crayons

Per group:

plastic beaker containing a mixture of clean stones, sand, salt and water;

sieve, filter funnel, filter paper, saucers, and spoons

Additional opportunity

Organise a visit to a local water treatment works, or arrange for a visit from a water company official. Contact your local water company (www.ofwat.gov.uk, click on Ofwat, then 'water companies' for addresses). Some water treatment works cannot accommodate school visits so you need to check with your local authority. However, they will come to the school to give a talk.

Introduction

Show the children the two glasses of water. Which would you prefer to drink? Why? Do you know if the water is safe? Explain that it might look clean, but unless it comes from a bottle or a tap, even clean-looking water may not be safe to drink. Give out Copy master A for the children to read. Ask them to complete the 'To do' section.

Activity

Give out Copy master B and challenge the children to try to separate the mixture of stones, sand, salt and water. They should spend some time planning what they might do. They should make a list of equipment, or you could offer them the choice of equipment, writing a list on the board: e.g. sieves, filter paper, funnels, saucers, and spoons. The children should then try to separate the mixture.

Plenary

Discuss different methods and compare their success.

Activity 7

Reading the labels

Learning Objective

Children will become aware of the information available on food labels to enable them to make informed choices.

National Curriculum links

PSHE: 3a; Science: Sc3 3c, 3d

Key Vocabulary

ingredients, additive, acid, sweetener, E-number, 'Best before', 'Use by'

Organisation

Individual and paired work

Resources

Clean drinks labels/containers (to be collected by the children before the lesson)

Copy masters A and B

For extension:

Selection of soft drinks – smoothie, fruit juice, carbonated drink, diet carbonated drink, water

Per group/class:

5 saucers, filter funnel, filter paper, paper/plastic cups

Introduction

All foods that we buy in containers have labels. What do manufacturers label food and drink for? Ask the children what information is on labels and cartons.



Activity

Give out the Copy master A. The children are to make up a quiz of five questions based on the label information. The children should then swap their quiz with another person and try them out. Ask the children to compare their labels with the label on the sheet, and make a list of any other information that is on it.

Plenary

Discuss why it is important for some people with allergies to read labels carefully. Ask the children to think about what would happen if some of the information was missing; for example, 'Best before' or 'Use by' dates.

Extension

To link the list of ingredients with previous work on separating mixtures, the children may like to set up the activity on Copy master B to compare the amount of residue left from different drinks that are left to evaporate. You will need to check that you have the appropriate facilities to do this.

Activity 9

What do we get from our food and drink?

Learning Objective

The children will research the major food groups to develop their understanding of the relative health value of some foods.

National Curriculum links

KS2: PSHE: 3a; Science: Sc2: 2b

Key Vocabulary

protein, fat, carbohydrate, fibre, vitamin, mineral, fluid

Organisation

6 groups

Resources

Copy masters A and B
Clean food and drink labels
Library resources/ICT access
Magazines for photographs/pictures of food and drinks

Introduction

Recap on the previous activity on labels. Explain that some drinks contain other food substances that our bodies can use. Give out Copy master A for the children to read.

Activity

Divide the class into six teams. Assign a food group to each team (bread, other cereals and potatoes; fruit and vegetables; meat, fish, nuts, pulses and seeds; milk and dairy products; foods containing fat and sugar; fluid). Encourage the children to find out as much as possible from different sources of information and present this as a poster.

Give out Copy master B and ask the children to complete the questions.

Plenary

Display the finished posters. Discuss what people should eat – a varied, balanced diet made up from a mixture of the food groups.

Extension

Design a healthy birthday tea.



Activity 9

A question of taste

Learning Objective

Children will make lemonade and conduct a taste trial, expressing a preference. They will further their understanding of simple hygiene rules.

National Curriculum links

KS1: Design and Technology: 2f

KS2: Design and Technology: 2f; Science: Sc3 3b

Organisation

Small groups

Resources

Per group:

3 lemons cut into halves; access to drinking water; sugar; measuring jug; 4 plastic drinks cups and an extra cup per person in the group; fruit squeezer; teaspoons; tablespoon; labels/pen to write on cups; blindfold

Note: Before carrying out any tasting activity check with carers and health records that children may participate. For children who have diabetes it may be more appropriate to use alternative sweeteners instead of sugar.

Introduction

Tell the children that they are going to be making lemonade. Ask them what they think is in the drink. Give out Copy masters A and B, and explain that they will be making four different drinks with different amounts of sugar. Emphasise that the children must wash their hands and make sure that work surfaces are clean.

Activity

In groups, the children should make lemonade. Encourage all the children to help, each squeezing a lemon. Emphasise the need to label the cups carefully. Once the lemonade has been made, the children should each taste the four different drinks. Each group should make sure that they record their results carefully. Allow time for the children to clear away.

Plenary

Discuss the results of the experiment with the class.

Extension

Design and make a new fruit drink.

Activity 10

Drinks detectives

Learning Objective

Children will gain awareness of safe drinking habits and the dangers of littering.

National Curriculum links

KS1: PSHE: 3a, c

KS2: PSHE: 3a

Organisation

Paired work

Resources

Copy masters A and B, 1 per pair
Poster 'Drinks detectives'

Introduction

Give out Copy masters A and B. Allow the children time to discuss the reasons for the safety rules.

Discuss as a group.

Leaving caps off can lead to the drink spoiling, being spilt, and going flat.

Drinks may lose their taste and fizz if past their 'Best before' date.

Fizzy drinks should be opened according to the instruction on the label.

Refilling containers can lead to contamination, or be unsafe (non-drinks in drinks containers).

Sharing drinks can pass on germs.

Sports caps are designed to be used only once – germs can hide where they can't be seen.

Walking and running whilst drinking can lead to choking.

Litter is harmful to people and animals – broken glass and sharp ring-pulls can cause injury, and plastic can suffocate small animals.

Broken glass can cut you if you try to clear it up yourself.

Activity

In pairs, the children should look at the poster and try to spot why each illustration shows something unsafe. Alternatively, you could photocopy the poster as it divides into four sections, and give these to groups to work on so that they can compare their answers later.

Plenary

Discuss the children's findings as a class.



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