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Science posters included on CD:

What do humans need to stay healthy?

What do plants need to grow?

Everyone is different

How many types of flower can you name?

Water

What could these materials be used for?

Different habitats

Introduction

Hello! We hope you enjoy using this book and poster CD and that the ideas included will help add to your toolbox of resources for teaching science.

About the book

The main idea behind *Using Stories to teach Science Ages 6-7* is to use stories as a different way of initiating a science lesson. A science concept is presented in a format that shows how science can relate to normal (or imagined!) life and that helps the children learn about science concepts in a fun way. The more ways, especially fun ways, we look at a subject we're learning, the more likely we are to understand it and to remember it! The CD also includes seven colourful posters to help make learning science fun!

The stories and poems in the book have been written and road-tested over a number of years in schools across the UK. Inevitably, over the years the science curriculum has changed and been modified, however as the core skills and concepts children need to learn at any age are essentially the same, we have been able to link the stories to the new curriculum.

We hope that the stories and poems can provide a resource for initiating or supporting work to cover the Programmes of Study for each year group. Therefore in the teachers' notes accompanying each piece we quote the Programmes of Study and supporting Notes and Guidance specified within the new curriculum. In the teachers' notes we also suggest follow-up work, often incorporating worksheets or the illustrations that accompany the pieces, which you can use to create a whole lesson, or several lessons, around each piece.

In each case, the story and its associated lesson could be used to introduce each topic, or could be incorporated into the series of lessons you are planning for that area of science. Of course, suggested lesson plans are only a guide and so you can pick and choose the suggestions and ideas that will work best in your school, with your class etc.

Reading the story

We recommend that you read the story to the children twice. The first time as a story in its truest sense – a story they can listen to and enjoy as a piece of narrative, without it being broken up and dissected as it's told. Hopefully the enjoyment they get from the story will enhance their enjoyment of the science they

are learning. However, on the first reading of the story, they may have been so involved in the plot etc. that they miss some of the science ideas that are used in the story.

On the second reading, you can get the children to focus on the science ideas by stopping at the points where a new science concept enters into the narrative and discussing its role in the story, using an enlarged copy. This also means that the children will be able to enjoy seeing – and learning from – the illustrations as well and many of the children will enjoy reading the story with you.

Using the lesson plans

For each story we have highlighted the sections that the stories/lessons cover most fully along with the National Curriculum areas that are covered.

Within the planning we have added reference statements headed **WALT**, **WILF** and **TIB** as these or similar systems are often used to ensure lessons are focused, objective led and in context for the learner. They help summarise purpose of the lesson, what is required of the children in order for them to successfully learn that lesson and why what they are learning is important.



WALT stands for "We Are Learning Today."



WILF stands for "What I'm Looking For."



TIB stands for "This Is Because."

The worksheets/record sheets are designed to support the learning the children are making in science. We recognise that completing them will often require literacy skills, which in a few cases the children will not have at the required level. In order that the work remains focused on science, we suggest that you or your classroom assistants etc. scribes for such children so that their capability in science is not held back by specific difficulties with literacy. The investigative lessons support assessment for learning by enabling time for teachers and/or classroom assistants to record comments made by the children as they plan experiments/discuss predictions.

Links to curriculum

Story	Science topic(s) covered	Curriculum links Year One	Curriculum links Year Two
		Programme of Study (PS)	Programme of Study (PS)
		Notes & Guidance (NG)	Notes & Guidance (NG)
		Follow-up material from each section supports "Working scientifically" requirements	Follow-up material from each section supports "Working scientifically" requirements
Fridge fight	Healthy diet		Animals, including humans (PS & NG)
Flowers	Growing plants		Plants (PS & NG)
Same Planet	Variation between people, plants and animals		Living things in their environment (PS & NG) Animals, including humans (PS & NG) Also useful for Year Six Evolution and Inheritance (PS & NG)
Loopy Leticia's Long-Lasting Lolly	Melting and freezing	Everyday materials (PS & NG)	Uses of everyday materials (PS & NG) Also useful for Year Four States of matter (PS & NG)
A toy car called Tommy	Movement on different surfaces		Uses of everyday materials (PS & NG) Also useful for Year Three Forces and magnets (PS & NG)
Holiday resort competition	Melting and freezing	Everyday materials (PS & NG)	Uses of everyday materials (PS & NG) Also useful for Year Four States of matter (PS & NG)
Blobbo's material world	Using suitable materials		Uses of everyday materials (PS & NG) Also useful for KS1 Design and Technology
Flowers, animals and habitats	Different living organisms found in and adapted to different environments	Plants (PS & NG) Animals, including humans (PS & NG)	Living things and their habitats (PS & NG)

Fridge fight

Links to curriculum

Year Two

Animals, including humans

Describe the importance for humans of exercise, eating the right amounts of different types of food. (PS)

Pupils should be introduced to the importance of exercise and nutrition for humans. (NG)

Pupils might work scientifically by: asking questions about what humans need to stay healthy. (NG)

Background

This unit helps the children to find out and think about which foods contribute towards a healthy diet. It also helps them think about what quantity of each food type is healthy to eat and which foods should ideally only be eaten in small amounts, such as 'fatty foods' and chocolate.

This unit links with the Year One "Animals, including humans" work because a healthy diet is essential in promoting healthy growth and maintenance of all the body parts, including the sense organs. Lack of Vitamin A in the diet causes an unbelievably distressing number of children to become blind.

Both a lack of, or an excess of, food are forms of malnutrition, cases of which are seen in almost all schools at some time, so clearly educating children about a proper diet is highly important. There are schools where all the children are obviously far smaller on average than the national norm and also where there are very young children who are quite outstandingly obese for purely dietary reasons. So in some cases the children's parents may need educating too. You could consider inviting them in to see the work the children have done, such as the class display that could result from this chapter. You could have information on hand from the local health authority/centre.

Resources

- Activity sheets 1–3 (pages 12–14)
- *What do humans need to stay healthy?* Poster on CD resource.

Lesson plan

Tell the children that the story they are going to hear

is a funny way of thinking about the different foods we eat and how good they are for us. Ask them to concentrate on the story as much as they can because you want them to remember which foods are mentioned in the story. Tell them that when you have read them the story you are going to make a class list of the foods mentioned in the story and put them into groups depending on which type of food they are.



"We are learning about a balanced diet."

"I'm looking for you to be able to say what a balanced diet is made up of."



"This is because a balanced diet keeps us healthy."

Read the story (pages 10-11).

Make a table on the board using the following food categories:

- A. Bread, cereals, pasta, rice
- B. Fruit, vegetables
- C. Meat, fish, beans
- D. Dairy products *
- E. Fatty/sugary foods.

*Even though it's a little different from butter we suggest you include margarine in this category. As a source of fat it's generally better but it contains virtually no calcium.

Ask the children which foods they can remember from the story and then ask them if they know which category on the table they go in. When you've agreed each one, add them to the list. Ask them if they can think of other types of food similar to the ones mentioned in the story and add them to the list.

Ask the children if they know how these different types of food help us.

Categorise them like this:

- Healthy energy foods (such as potatoes, rice, bread, pasta and cereals)
For energy!
- Fruit and vegetables
For good health
- Meat, fish and beans
To help us grow
- Dairy products
For bones and teeth
- Fatty/sugary foods.
Food for treats only!

By 'fatty foods' we mean foods that provide almost no nutritional benefit at all, other than an excessive amount of calories, such as ice cream, cheesecake, crisps, burgers and mayonnaise. Sometimes fat can be useful in the diet to provide energy for long-term activities (provided they are being done!) and insulation – as the cheese argues in the story. However, the children will get more than sufficient fat from eating some dairy products, margarine, meat and fish. There are only two essential fatty acids and these are only needed in tiny amounts (found in fish oil and some vegetables).

Also, you could bring in various foods or pictures of various foods and ask the children to separate them into the different groups. The poster *What do humans need to stay healthy?* provided on the CD resource shows a variety of healthy foods that can be displayed.

Ask the children if they know how many normal servings of each type of food it is best to eat each day. It should be around:

- Healthy energy foods: 2–3 servings
- Fruit and vegetables: 5 servings (ask the children to watch out for the foods that are displaying the 'five a day' symbol)
- Meat, fish and beans: 2 servings
- Dairy products/margarine: 2–3 servings
- Fatty/sugary foods: a small amount! 1 serving at the most!

Individual, paired or group work

Write the above information on the board and then tell the children that you are going to give them recording sheets to complete to display this information.

For example, they have to choose two or three carbohydrates from the list they have made and then draw or list them on the table on the worksheet.

Record sheet 1, for lower achievers, asks the children to complete the chart by drawing the appropriate number of particular types of food to make a healthy diet.

Record sheet 2, for average achievers, asks the children to just write the names of an appropriate number of particular types of food to make a healthy diet.

Record sheet 3, for higher achievers, requires the children to first write the names of the different types of food on the base of the table then complete the chart to show a healthy diet.

Plenary

Review the work the children have done. Ask them if they can remember the names of the different types of food. Ask them if they can think of other measures we need to take to help us remain healthy, particularly drinking enough water and having enough exercise.

Extension activities

Provide the children with an A5 sheet of paper and ask them to draw foods from one of the food groups for a class diagram/display.

The class could also produce a 'food pyramid'. One example can be found at www.caloriecounter.co.uk/the-food-pyramid.

For homework you could ask the children to prepare a menu for a healthy meal/a day's meals.

See CD poster and lesson plan for an extra activity resource.

Fridge fight

The foods in the Frier family's fridge were having a debate about which of them were best at keeping the Friers healthy.

'Well...' began one of the grapes.

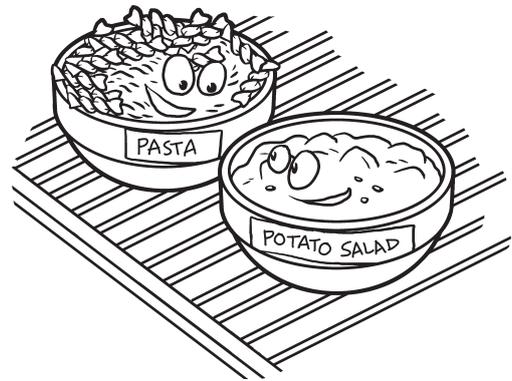
'I must be one of the most important foods,' began the pasta, interrupting, 'because I give people lots of energy to do things, like the potatoes in the salad and the bread and rice in the cupboard. If people didn't get energy from food like me, they wouldn't be able to do anything!'

'Actually...' began another of the grapes.

'No, no, no!' interrupted the pork chops. 'We and the chicken legs must be the best foods because we help people grow and stay healthy.'

'Excuse me...' began another grape.

'Hey! Hang on a minute!' interrupted the red kidney beans in the vegetarian chilli. Our friends the chickpeas in the hummus and the baked beans in the cupboard help people grow and stay healthy too!'



'YEAH!' agreed the chickpeas in the hummus. 'And as David and Mary are vegetarian, you pork chops and chicken legs are only good for Paula and Ashley.'

'As it happens...' began yet another grape.

'I... I think I'm quite important to the Friers' diet,' interrupted the cheese, slightly nervously.

'You? How can you be?' demanded the chicken legs, a little harshly. 'You're high in fat (unlike us, actually).'

'Well,' replied the cheese, a lot more confidently, 'everyone needs a little fat in their diet to store energy for activities like long walks or cycling. Also, I've got lots of something called calcium in me that helps build healthy bones and teeth. So as long as no one eats too much of me I'm very important!'

'Me too!' piped up the semi-skimmed milk. 'And I'm usually lower in fat than the cheese!'

'I think you'll find that we're quite important,' said the prunes, pompously. 'We're extremely important in helping move the food through someone's body from one end... to the other...'



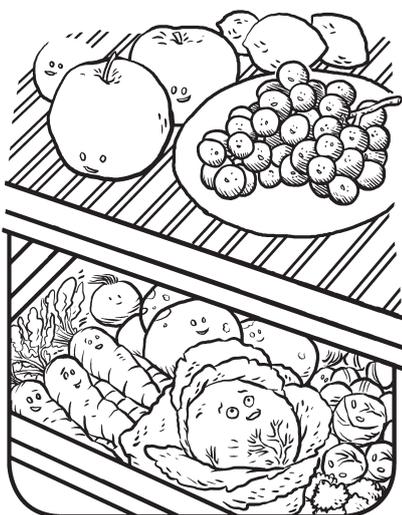
'Could I just mention that...' began a fifth grape.

'Just a minute,' said the spring water, interrupting yet another poor grape. 'I'll have you know that people are mostly made up of water and if they don't drink enough of me

they can become dehydrated. That means they haven't got enough water inside them. If they get dehydrated they can't think or play as well as normal. That's why children have water bottles with them in schools these days. So I think I'm the most important.'

'WILL YOU LOT BE QUIET!!' shouted all the grapes in the bunch at once. 'We and the vegetables are important for keeping people healthy and they should eat five portions of us a day. We happen to know that what's most important is a balanced diet, where people eat a sensible mix of most foods.'

'Yeah!' agreed a carrot. 'As long as they don't eat too much salt, sugar or fat and have a

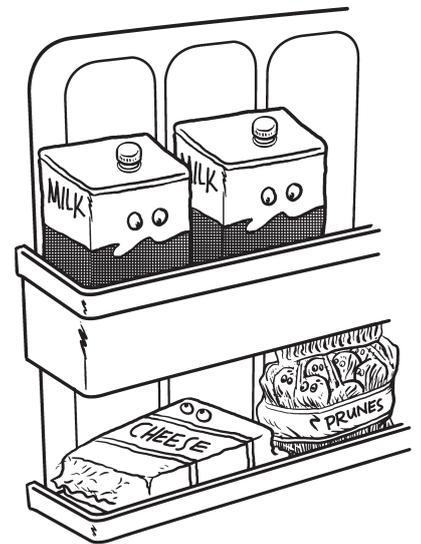


balanced diet, that'll help most people stay healthy.'

'That's right!' piped up the sprouts. 'And as well as a healthy diet, people need regular exercise

and time to rest.'

'But people can have some of me... every now and then... as a treat,' added the chocolate, who had been keeping quiet during this debate.



'Oh yes...' everyone agreed, encouragingly.

Suddenly, all the foods stopped speaking.

The fridge door opened and Ashley looked in.

'That's funny. I thought I heard a noise in here,' he said to his mum.

'Oh Ashley, you're always imagining such crazy things...' replied Paula as Ashley got some grapes out of the fridge. He didn't notice the pork chops wink at the pasta as he closed the door.

The End



Record sheet 1

A healthy diet

Name: _____

Complete the chart by drawing pictures of different foods to make a healthy diet.

Number of servings per day	5					
	4					
	3					
	2					
	1					
		Healthy energy food	Fruit + vegetables	Meat + fish	Dairy products	Fatty foods + sugary foods
		Different groups of food				

A healthy diet

Name: _____

Complete the chart by writing the names of different foods to make a healthy diet.

Number of servings per day	5					
	4					
	3					
	2					
	1					
		Healthy energy food	Fruit + vegetables	Meat + fish	Dairy products	Fatty foods + sugary foods
		Different groups of food				

Record sheet 3

A healthy diet

Name: _____

Write the names of the different food groups at the bottom of the table. Then fill in the correct number of blocks in the table by writing the names of the different foods that make a healthy diet.

Number of servings per day	5					
	4					
	3					
	2					
	1					

Different groups of food