Letts and LONSDALE

KEY STAGE 1

Year 2 | Term 3

Teaching and Learning

Science

Activity Book

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Teaching and Learning

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Activity Book

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Contents

How to use this book

In this book you will find out that some materials are natural and others are man-made. You can use materials to make things and you can change materials by heating or cooling them.

Look out for these.

Paper is a man-made material. It is made from wood.

The introduction tells you the most important thing to learn.

Captions tell you more about each picture.

Write your own story of how paper is
Use the library and the Internet to find

The boxes give you more to think about and do.

man-made **material**

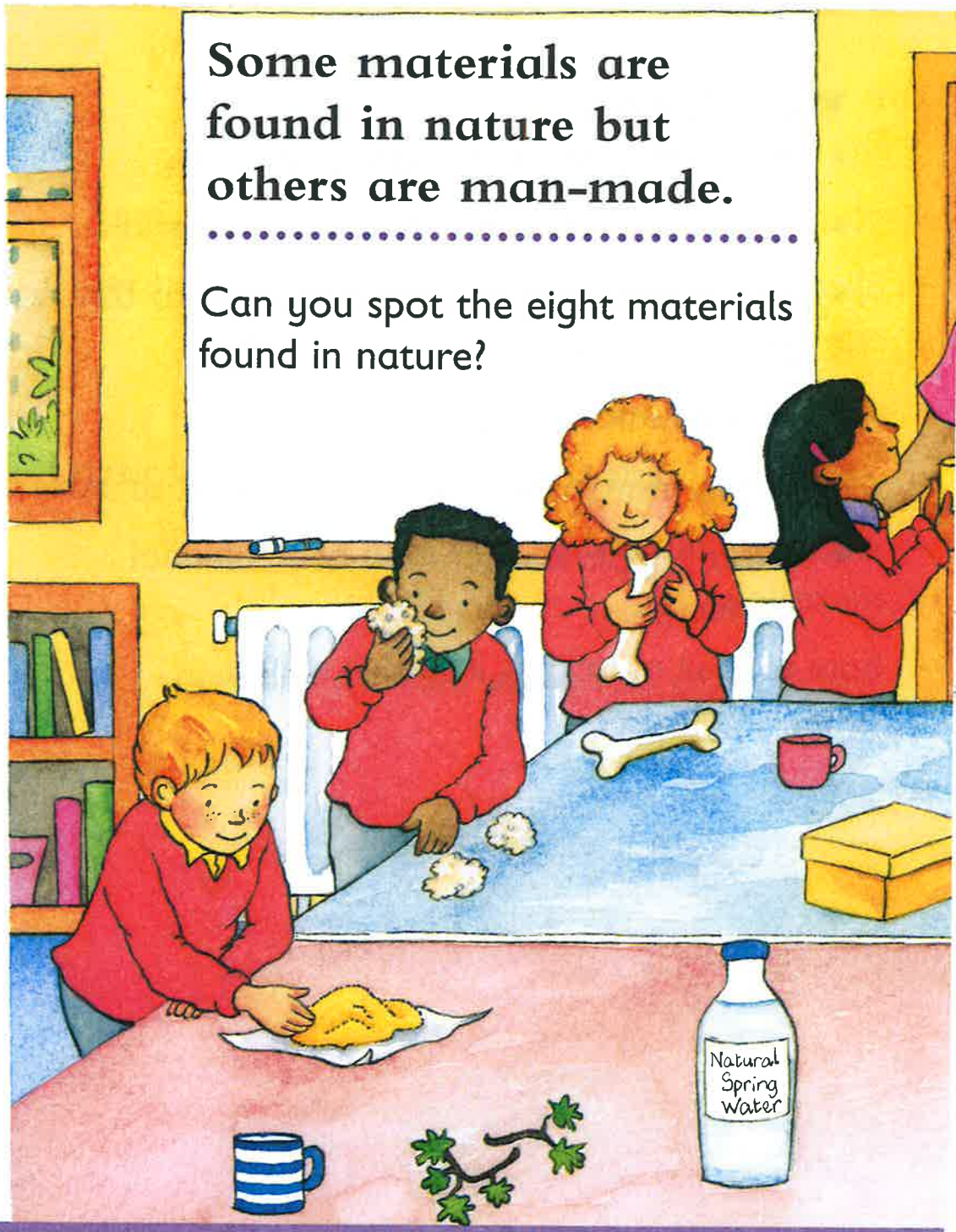
You need to know what the science words mean. Look them up on page 24.

What you will learn

You will learn:

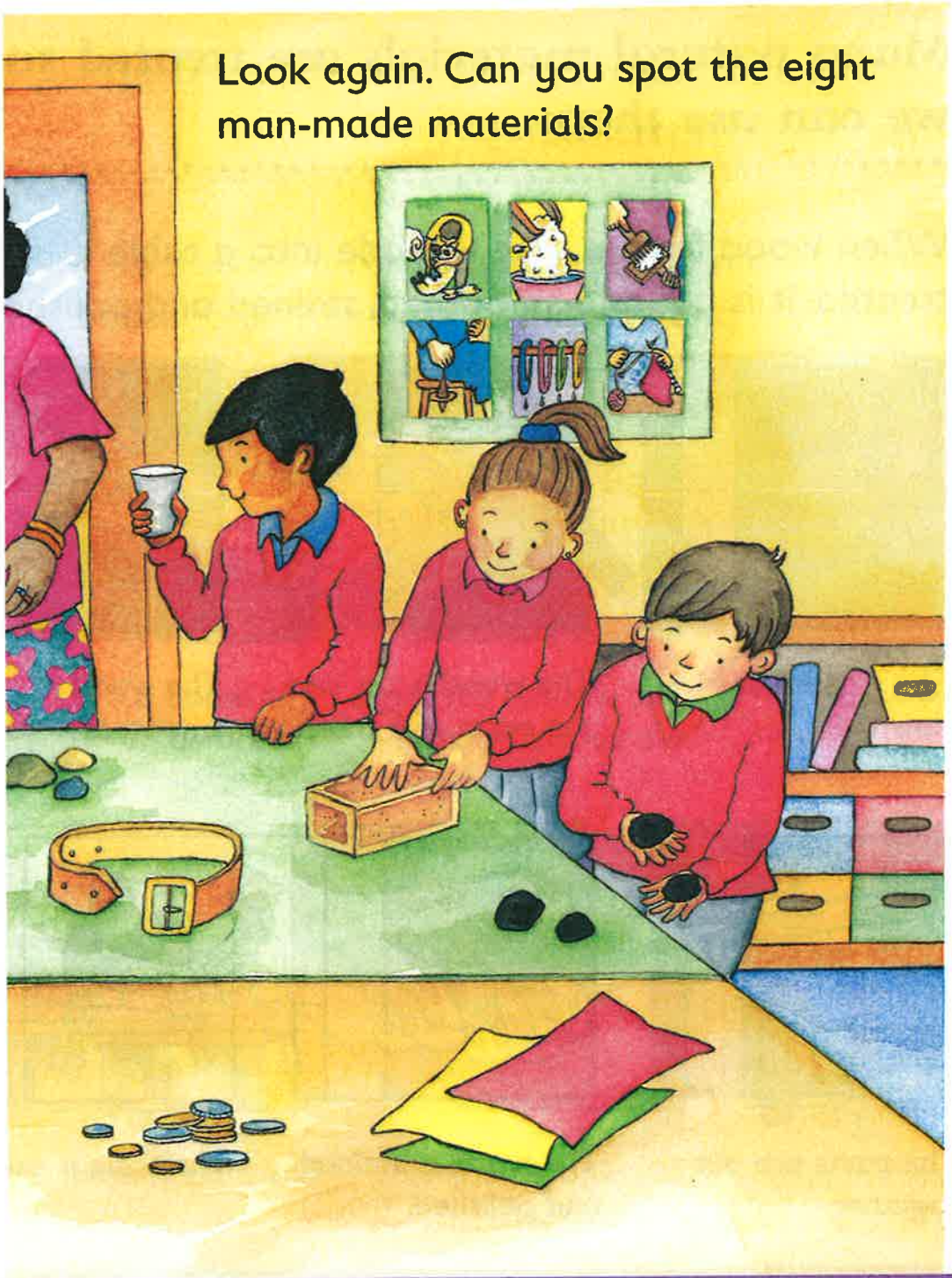
- the names of some more materials.
- about natural and man-made materials.
- about changing natural materials so that we can use them.
- about making paper.
- which materials squash, bend, twist or stretch.
- what happens when you heat or cool materials.
- how to test materials in a fair way.

Natural and man-made materials



Talk about the materials in the display.
Which ones are natural? Where could you find them?

Natural and man-made materials



Collect your own natural and man-made materials. Make them into a collage. Label your collage.

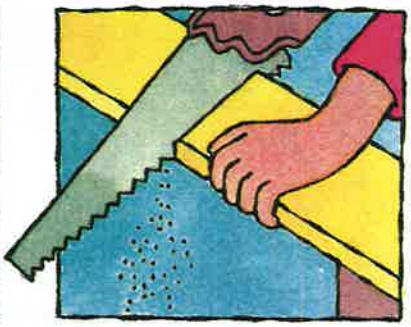
man-made material natural

Treating natural materials

Many natural materials are treated so we can use them.

When wood from a tree is made into a table it is treated. It is cut and smoothed, stained and polished.

The tree is cut down.



The wood is cut into the parts of a table.

The wood is smoothed.

The parts are put together.

The wood is stained and polished.

The table is used.

Talk about how wood is treated to make a table. Is the table still made of a natural material?

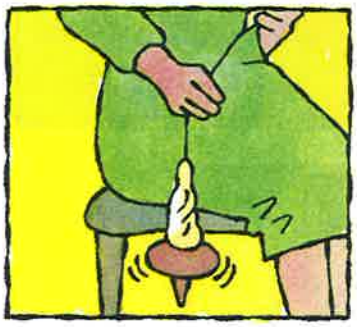
Treating natural materials

A lot happens to wool to turn it into a woolly jumper.

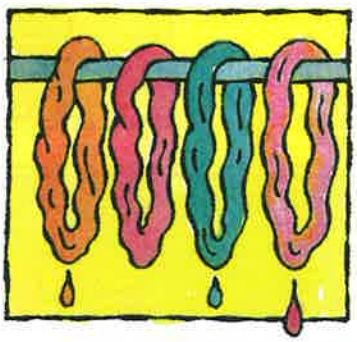
The sheep is sheared.

The wool is cleaned.

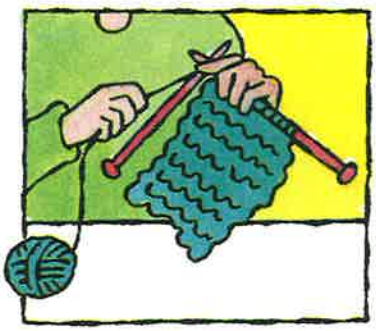
Then it is combed.



The wool is spun into yarn.



The wool is dyed.



The wool is knitted.

Why do you think wool is used to make a jumper? Is a woolly jumper still made out of natural material?

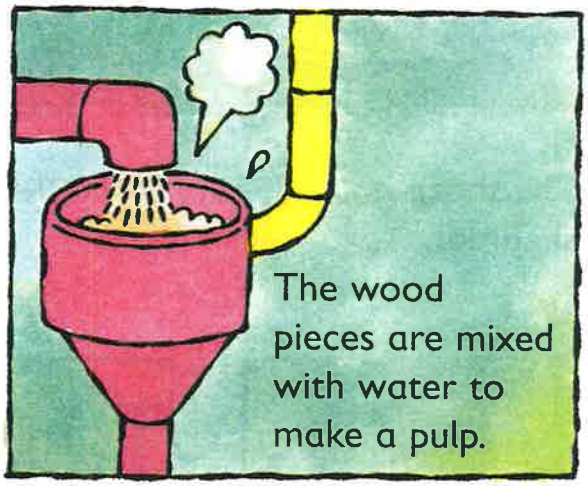
material **natural**

Paper is a man-made material. It is made from wood.

1

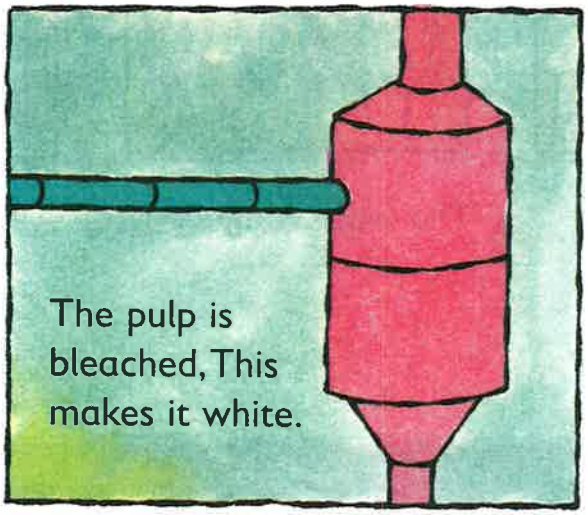
The wood is chopped into small pieces.

2



The wood pieces are mixed with water to make a pulp.

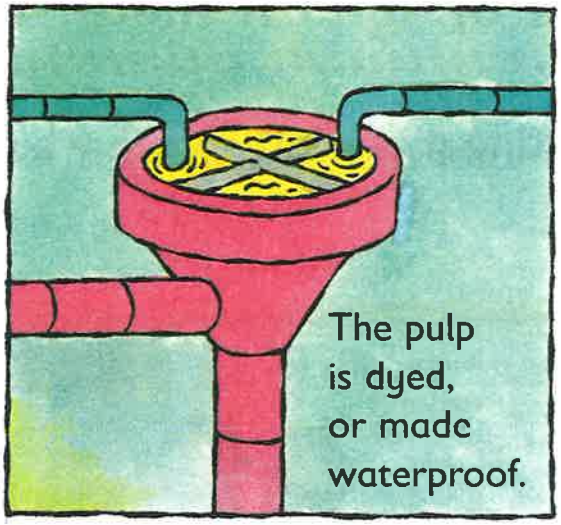
3



The pulp is bleached, This makes it white.

Making paper

4



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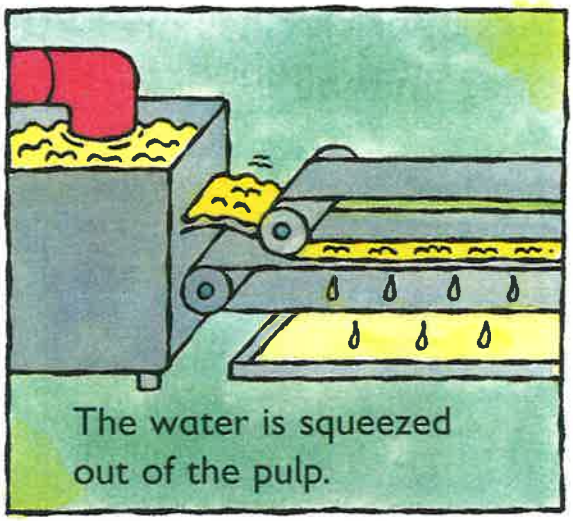

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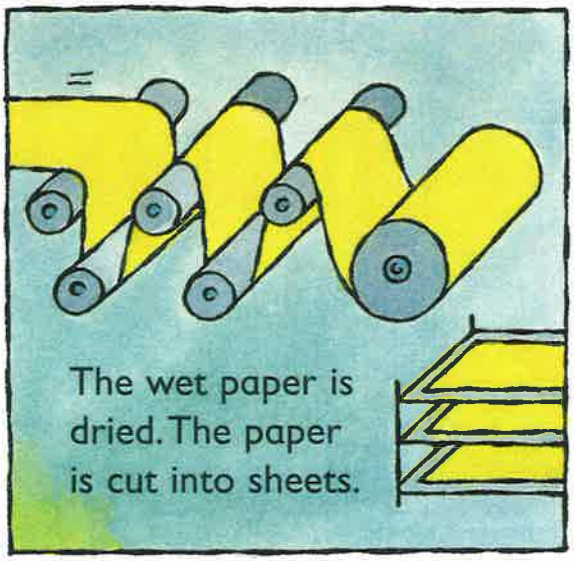


Write your own story of how paper is made.
Use the library and the Internet to find out more.

man-made **material**

Changing the shape of materials

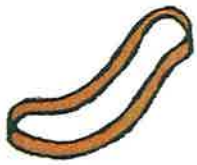
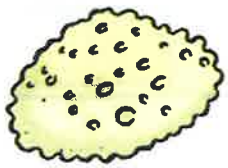
Some materials can change shape when you twist, bend, stretch or squash them.

Mrs Spark's class are testing materials to see which ones change.

Which materials keep their shape? Which ones change? What are the children doing to make them change?

Changing the shape of materials

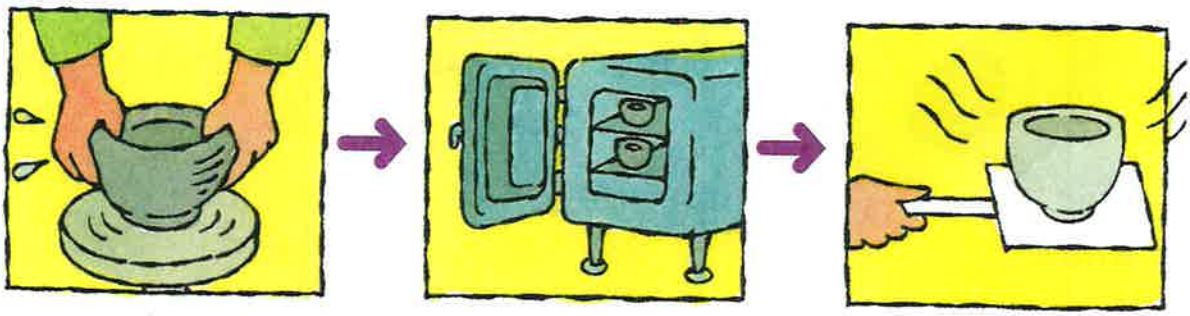
Look at their class chart.

Draw and label the material.	What did you do?	What happened?
 wood	Tried to twist it.	It kept its shape.
 elastic band	Stretched it and let it go.	First it got longer. Then when we let it go it went back to its normal length.
 sponge	Squeezed it and let go	It squashed and went smaller. Then it sprung back to its original shape.

The class chart isn't finished. Draw a chart of your own. Talk about other materials that you could add to it. Test some materials of your own to see if they change shape.

Changing materials with heat

Materials often change when you heat them. Sometimes you cannot change them back.



Clay is changed into pottery in a very hot oven.
You cannot change the pottery back into clay.

When coal burns, a white ash is left behind.
Most of the coal forms a new material that goes into the air. You can never get the coal back.

Talk about what happens to clay and coal when they are heated.
Think of another material that changes when it is heated. What happens to it?

Changing materials with heat

Some foods change when you heat them.

Talk about what Clare and her dad are cooking.
What were the materials like before and after heating them?
Next time you cook, think about what happens to the food.

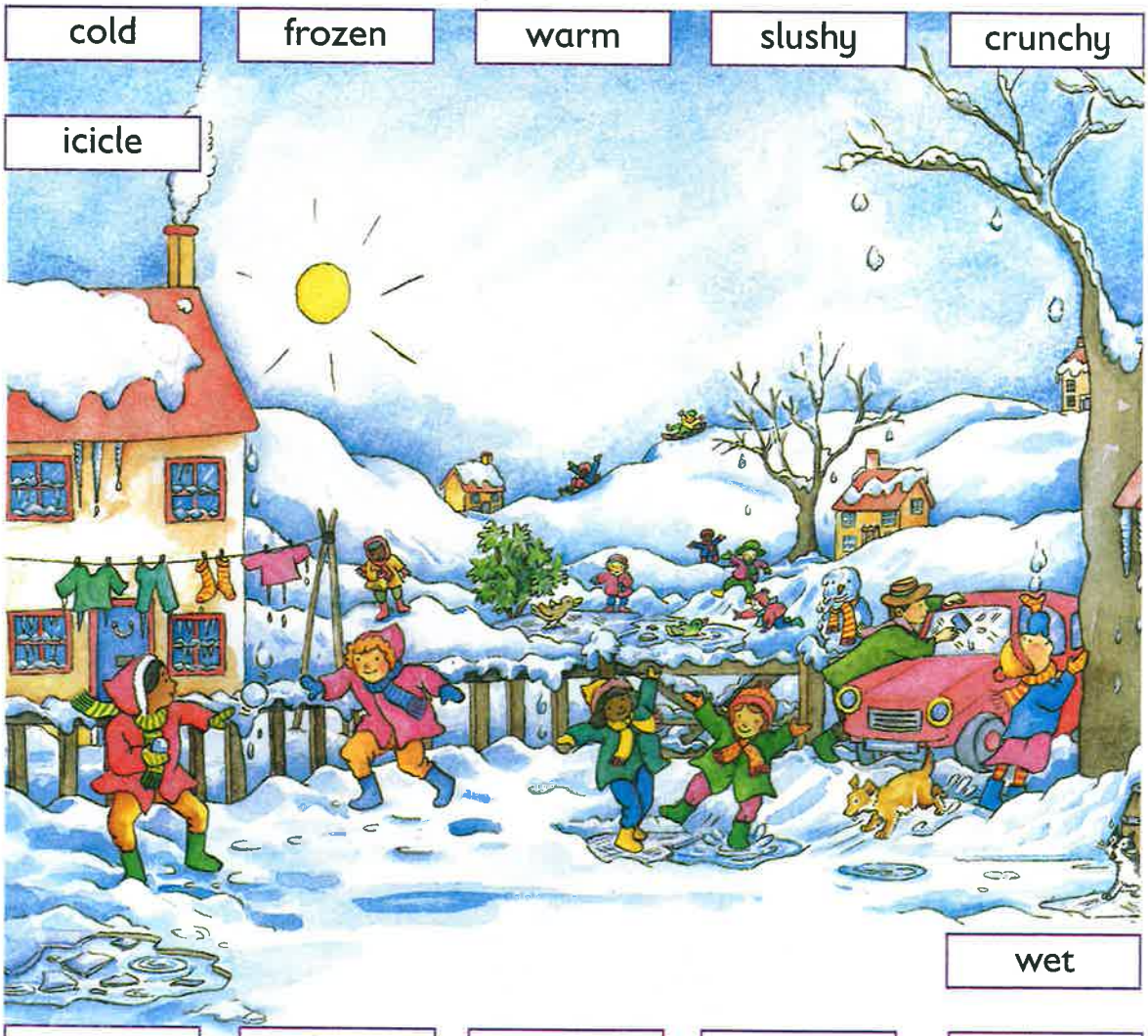
burn

Melting ice

When ice is warmed it changes into water.

cold | frozen | warm | slushy | crunchy

icicle



wet

snow | deep | runny | slippery | drip

Talk about the ice and snow. Use the words around the picture to help you.

Melting ice

Sally and James are looking at how different pieces of ice melt.

Talk about what happens to the different pieces of ice as they melt. Look at some ice melting for yourself. Talk about what you see.

melt **warm** **water**

Fair or unfair?

Ice melts faster in warm places than in cold ones. If you melt ice in different places in your classroom, you can find the warmest place.

Jamila put pieces of ice in different places.
Each piece of ice was the same size.

Where do you think the ice will melt the quickest?

Fair or unfair?

Ed put pieces of ice in the same places as Jamila.
His pieces were different sizes.





The chart shows the time it took for each piece of ice to melt.

	Jamila's results	Ed's results
On the table	14 minutes	14 minutes
By the open window	20 minutes	12 minutes
Next to the radiator	4 minutes	2 minutes
In the cupboard	12 minutes	25 minutes
On the shelf	15 minutes	16 minutes

Which is the warmest place in Jamila's test and in Ed's test? Which test is fair?
Do your own fair test to find the warmest place in your classroom.

fair test **ice** **melt**

Keeping chocolate nice to eat

Materials also change when they are cooled or warmed.

Chocolate goes hard when it is cold. Then it is difficult to eat.

When chocolate gets warm it is runny and sticky. It is hard to eat then too.

How does chocolate change when it is cooled or warmed? Think of other materials that change in the same way.

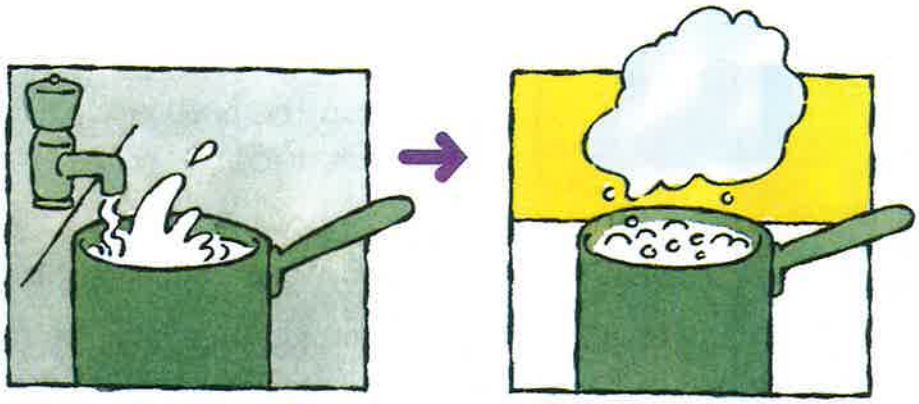
Keeping chocolate nice to eat

Clare and her friends have to find the best way to keep chocolate nice to eat. They have to make a fair test.

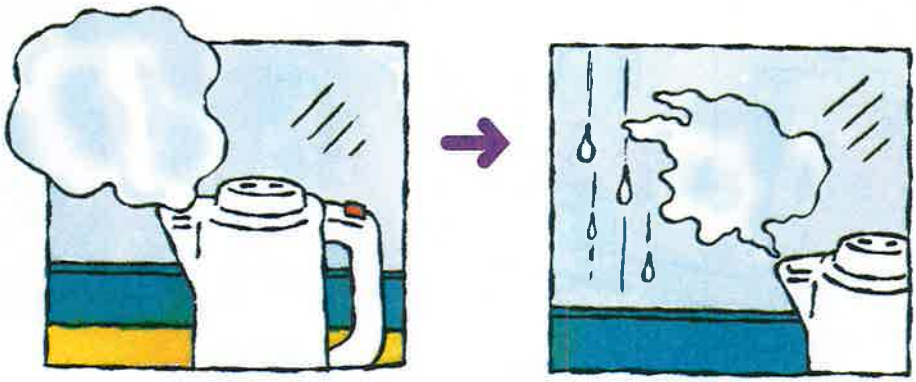
How do you think the children will answer the questions on the board? Do your own tests to find out how best to keep chocolate.

fair test **warm**

Water can change into steam and steam can change into water.



When water is boiled it changes into steam. Water is a liquid and steam is a hot gas. They are the same material. Do not touch steam. It will burn you.



Steam changes back into water when it is cooled. If something cold is near a steaming kettle, drops of water will form on it.

How do you change water into steam? In what way are water and steam the same? In what ways are they different?

Water and steam

This geyser is in Iceland. The water comes from under the ground where it is hot. It rushes out as steam. In the cold air the steam changes back to water and falls to the ground.

Talk about what is happening to water in the picture. Make a list of everything you see.

boiling water steam

Useful science words

boiling	A liquid is boiling when it bubbles and starts to turn from a liquid into a gas. Liquid water boils and turns into a gas called steam.
burn	When a material burns it changes into a new material. You cannot get the old material back.
fair test	A test where most things are kept the same and only one thing is changed.
material	A material is used to make something (such as paper or wood). Some materials are natural, others are man-made.
man-made	A material that is not found in nature. The material can only be made using materials found in nature.
melt	A solid material melts when it turns into a liquid. For example, solid ice melts and forms liquid water.
natural	A material that is found in nature, such as wood, wool and coal.
ice	When water freezes, it changes into a solid called ice.
steam	The gas made when liquid water is boiled. Water and steam are both the same material.
warm	To make something hotter.
water	A natural material. It is a liquid with no colour. It changes into ice when you freeze it and into steam when you boil it.

Letts and LONSDALE

Teaching and Learning

Science

Activity Book

KEY STAGE 1

Year 2 Term 3

This Science Activity Book covers all the content of the Science National Curriculum 2000 for Term 3 of Year 2. Written to follow the QCA Scheme of Work, material is differentiated and clearly structured for whole class teaching and independent study. Each topic contains:

- **Introductory statements about key scientific ideas**
- **Colourful, engaging illustrations**
- **Simple scientific vocabulary**
- **Suggestions for practical activities**

The books are accompanied by 25 A1 posters, which can be used to introduce a topic, discuss key concepts and develop scientific vocabulary. A Teacher's Book, including planning grids, teaching notes and worksheets, completes the scheme.

Also available:
Year 2 Science Resource Pack

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