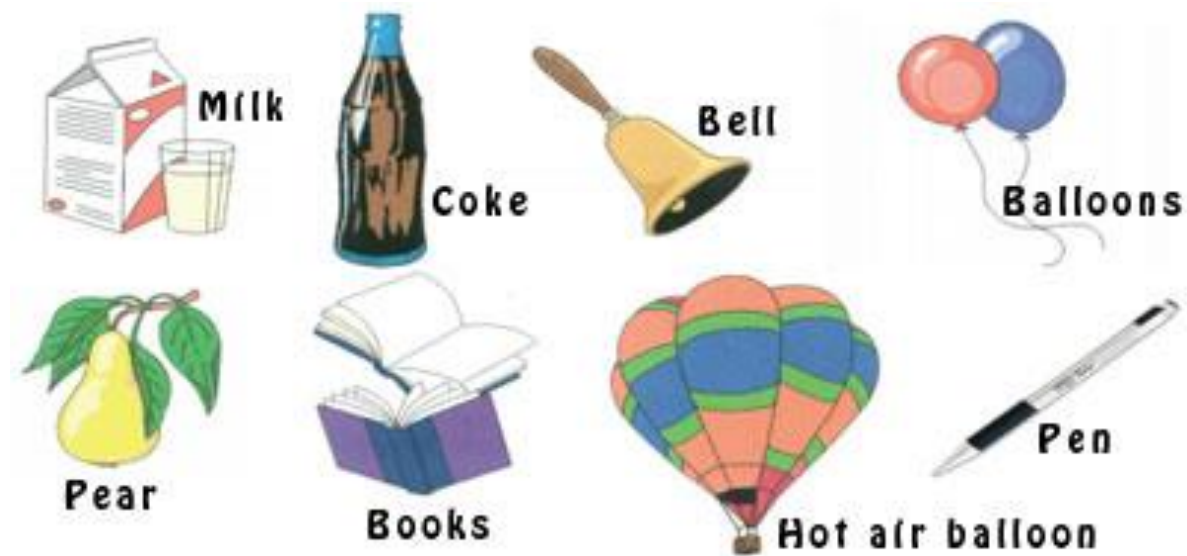


What's The Matter?

In science, matter is the name given to anything that takes up space and has mass. Mass is like another name for weight.



So everything around us is matter really! Books, cars, pencils.....even our own bodies are all matter! Even things we can't see like air! All these things are matter because they take up space and have mass or weight.

Matter can exist in three different forms or states. We've talked about these before. Can you remember what they are? S_____, L_____ and G_____.

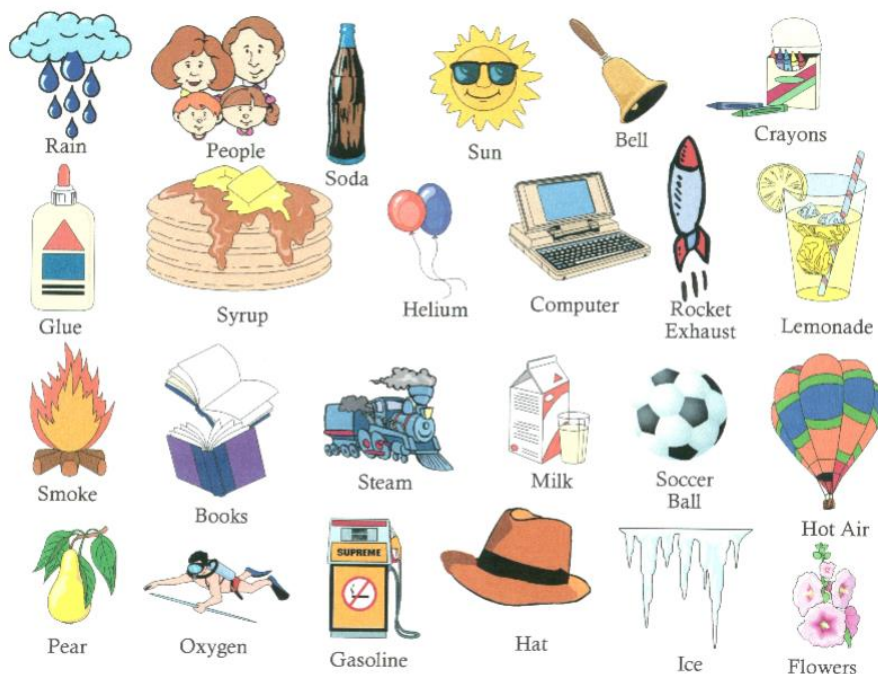
If you click to watch the video here it will explain some more about matter and you can see if your guess was right!



So all matter will either be a **solid**, **liquid** or a **gas**! Write three headings at the top of a page or in your copy like this:

Solid	Liquid	Gas

Now sort the types of matter in the picture below by writing them under the correct heading. When you're finished sorting see if you can come up with three more examples of your own for each one.



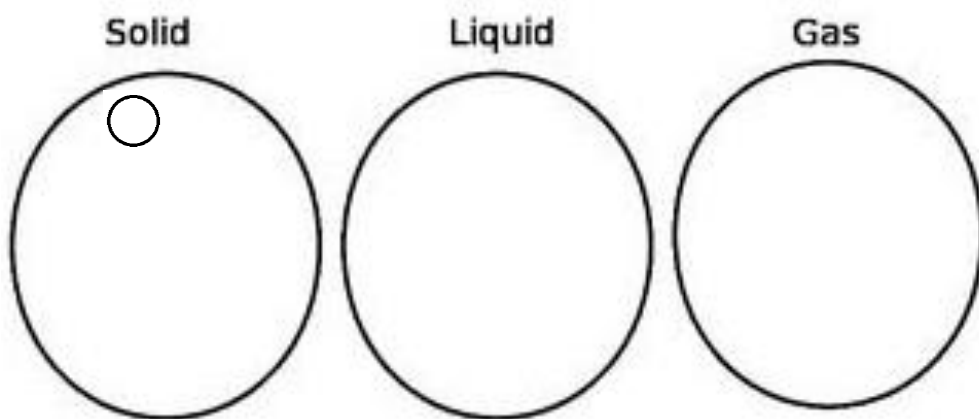
All matter, whether they are in a solid, liquid or gas state are made up of tiny particles called atoms. The particles are set up or put together differently depending on whether the matter is a solid, liquid or a gas. Here's a video showing these differences more clearly.



So, take a chair for example. The wood that the chair is made from is solid so the particles are tightly packed together. So, if you try to move your hand through the wood in the chair it won't go through – your hand just presses against it.

In water or air however, the particles are less tightly packed together so when you try to move your hand through air or water you are able to do it.

In your copy or on a sheet draw three circles like the ones below. Now draw in small circles to show how the particles are packed together in a solid, liquid and a gas.



Changing From One State To Another!

So like we saw in the video some types of matter can change from a solid to a liquid or from a liquid to a gas. Water is a good example of a type of matter that can do this easily.

Experiment Time

Try out this experiment and see what you can learn about water changing between different states. First think about the questions in the green box and then write out the Experiment Time sentences 1-5 and fill in the blanks:

Getting started

Do you know what happens to water when it is heated?
Does it stay or does it go away? What do we call this?
Does the same thing happen to solid things like salt?
Let's find out!

A. Check what you will need.



Helpful Hint

It is not strictly necessary to use a fridge in this experiment. A cool place away from either sunlight or heating systems is perfectly adequate!



Experiment Time!

B. Look at the pictures and fill in the blanks.

Use the words in brackets to help you.



1. Pour _____ amounts of _____ into _____ jars.
(two, water, equal)



2. _____ a _____ ful of _____ into both _____.
(salt, jars, spoon, Stir)



3. Put _____ jar in a _____ _____.
(one, warm place)



4. _____ the _____ jar in a _____ _____.
(cool place, other, Put)



5. _____ the _____ for _____ or _____ days.
(four, three, jars, Leave)

Now set up the experiment and then make an experiment record on a sheet or in your copy like this one:

EXPERIMENT RECORD

Draw your experiment. Using the **wordbox**, label your drawing.

WORDBOX

salt
water
jars
spoon
windowsill
fridge

Make a list of what you used in the experiment.

1. _____	2. _____
3. _____	4. _____
5. _____	6. _____

Don't forget to write down your prediction for what you think will happen in the experiment.

After you come back in three or four days check the results and try to fill in the blanks and answer these questions.

Experiment Results

1. After a few days in the warm place, the water in the jar _____ (stayed, changed colour, went away).
2. After a few days in the warm place the salt in the jar _____ (stayed, went away, exploded).
3. What did the salt in the jar in the cool place do?
4. Sort out these letters to find the word that describes what happens to water when it gets warm and changes from liquid to gas:

e p v a t i r a o n o

5. Sort out these letters to find the word that describes what happens to water when it gets cold and changes from gas to a liquid:

n c o n d n e t s a i o

Now write a short description of what happened in the experiment. Then read and think about these questions and facts.

Professor Botchitt wants some salt to put on her chips before they get cold. Is she going the right way about it? _____



Why? _____

FACT BOX 1

People can get salt from the sea in warm countries. They allow seawater to fill large shallow fields through special gates which they then shut. The heat from the sun causes the water to evaporate and the salt is left behind.



FACT BOX 2

If you are at the seaside in the summer, you will often find salt left behind on the edges of rock pools. This happens at low tide as the water in the pools evaporates in the heat of the sun.

FACT BOX 3

Watching paint dry. When paint dries, the liquid in it evaporates and the dry part is left behind as the colour. Paint is made from solid colour that is mixed in a liquid, just as you mixed the salt with the water. When you paint something, the liquid in it evaporates and leaves the colour behind. Mind you, watching this happen is not very interesting!



Challenge

Which is the better container to get water to evaporate from —

- (a) a wide shallow container like a bowl or
- (b) a narrow deep container like a jar? _____

How could you test this? _____

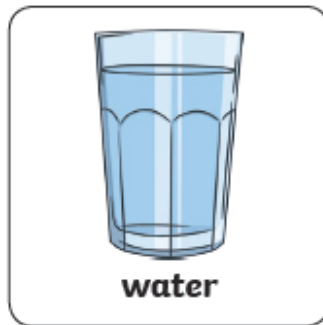
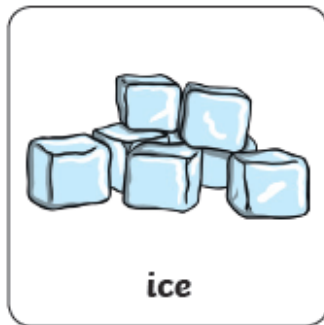


FIND OUT MORE

Use an encyclopaedia or the Internet to find out more about salt farms in different parts of the world.

Finally try writing out sentences to show how water changes between solid, liquid and gas. The first one is done for you:

States of Water



Use the words *ice*, *water* and *water vapour* to complete the table below:

Freezing		to	
Melting		to	
Evaporation		to	
Condensation		to	

1. Freezing: water to ice
2. Melting: _____ to _____.
3. Evaporation: _____ to _____.
4. Condensation: _____ to _____.