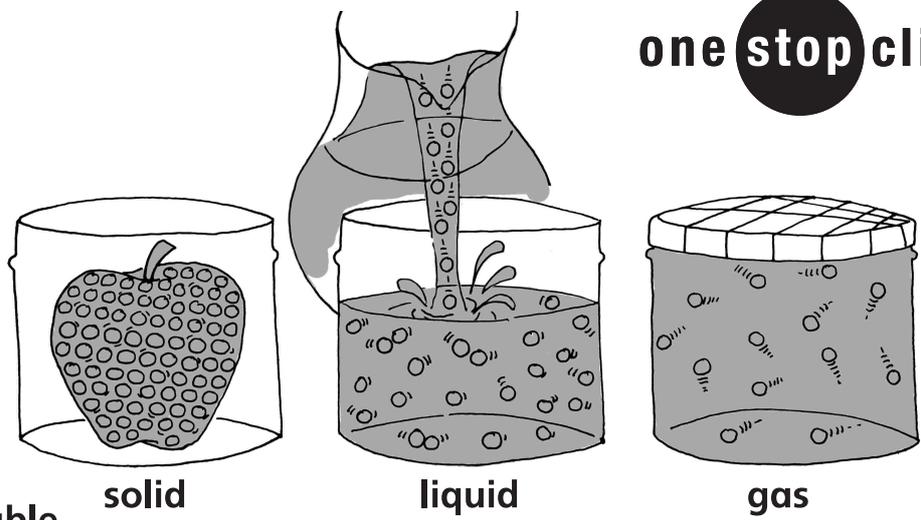


SCIENCE

Matter.

Matter is everywhere.
Matter is everything that has mass and occupies space.
Matter exists in three states: solid, liquid and gas.



solid

liquid

gas

1 Read and complete the table.

Solids keep their shape.
Solids do not flow.
You can cut solids.

Liquids take the shape of a container.
Liquids flow.
You can't cut liquids.

Gases fill the space they are in.
Gases flow.
You can't cut gases.

	SOLIDS	LIQUIDS	GASES
SHAPE	✓		
FLOW	X		
CUT	✓		

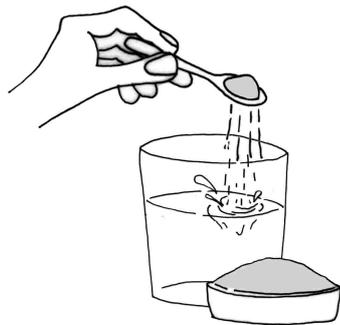
2 Match and write.

Making a solution.

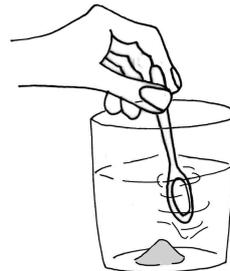
a Put some salt in the water.



b The result is a cup of salty water.



c Stir with a spoon.



d Pour some water in a cup.



A **solution** is a liquid with one or more substances dissolved in it.

Sea water is a _____ because you can't see the _____ in the water. The salt dissolves in the water.

3 Draw and write.

Making a mixture.

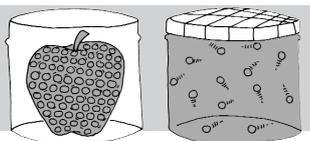
Draw and write four fruits you can use to make fruit salad.
Draw the fruit salad in square 5.

1	2	5
3	4	

A **mixture** is a combination of two or more substances that do not dissolve.

Fruit salad is a _____ because you can see the different _____.

Matter.



Aim

- To study the main properties of matter.

Language focus

Key vocabulary: *matter, mass, space, solid, liquid, gas, shape, flow, cut, solution, substance, salt, dissolve, mixture, sugar, fruit.*

Key language: *Matter is everything that has mass and occupies space. Solids keep their shape. A mixture is a combination of two or more substances that do not dissolve. Sea water is a solution.*

Materials

- Worksheet.
- Clear plastic cups, water, balloons, salt, a small spoon.
- (Optional) Experiment 1: sand, instant coffee, flour, sugar, warm water.
- Experiment 2: warm water, a saucer, salt.

Warm-up

Categories

- Draw a table with four rows and four columns on the board and ask the pupils to copy it in their notebooks. Write the following categories in the four cells in the top row: *food, drink, clothes* and *classroom objects*. Tell the pupils to try to write words in each of the four categories which contain the letter you call out. Do an example on the board, eg, E: *bread, water, trousers, rubber*. Call out several letters. How many pupils manage to produce a word for each category?

Completing the Worksheet

Activity 1

- Write on the board some of the words the pupils wrote in the warm-up activity. Explain that all these things (*bread, water, trousers, rubber*; etc) are all matter. Write *matter* on the board and explain that *matter is everything that has got mass and occupies space* (make sure pupils understand what this means). Elicit some other examples of things that are made up of matter.

- Write on the board the following words: *water, plastic, air, milk, paper, water vapour*. Then draw three columns and write *solids, liquids* and *gases* at the top of the three columns. Ask the pupils *Which are solids? (Plastic and paper.) Which are liquids? (Water and milk.) Which are gases? Air and water vapour.*

Explain that *matter exists in three states: solid, liquid and gas*. Ask the pupils to give you some more examples of each state and write them on the board in the appropriate columns: solids – wood, glass, books, etc; liquids – coke, orange juice, coffee, etc; gases – nitrogen, oxygen, etc.

- Read the text in Activity 1 with the class. Explain that *solids keep their shape, they do not flow and you can cut them*. Use a piece of paper or card to demonstrate these properties. *Liquids don't keep their shape, they take the shape of the container they are in*. Demonstrate by pouring some water into a plastic cup. *Liquids flow. You can't cut liquids*. *Gases don't keep their shape. They fill the space they're in*. Demonstrate by blowing up a balloon. *Gases flow*. If possible, open a window. *You can't cut gases*.
- The children complete the table. Check answers.

Answers:

	SOLIDS	LIQUIDS	GASES
SHAPE	✓	✗	✗
FLOW	✗	✓	✓
CUT	✓	✗	✗

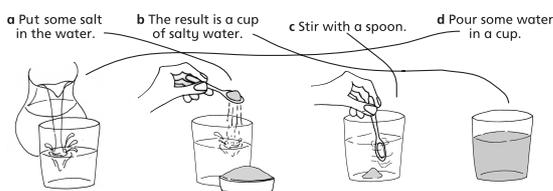
Activity 2

- Show the pupils a clear plastic cup, some water and salt. Perform the actions in Activity 2 (in the correct order), explaining what you are doing as you go:
 - Pour some water in a cup.
 - Put some salt in the water.
 - Stir with a spoon.
 - The result is a cup of salty water.

Ask *What happens to the salt?* Explain that *the salt disappears, it dissolves in the water. You can't see the salt in the water.* Explain that *when a substance dissolves in a liquid it makes a solution.* Write the word *solution* on the board. *Sea water is a solution.*

- Look at the first part of Activity 2 with the class. Tell the pupils to order the sentences by matching them to the pictures; then they complete the short text about solutions.

Answers:



Sea water is a **solution** because you can't see the **salt** in the water. The salt dissolves in the water.

Activity 3

- Ask the pupils to name as many different kinds of fruit as they can. Invite one of them to the front of the class to draw a fruit on the board. Encourage the other pupils to guess what kind of fruit it is. Invite some more pupils to draw different fruits on the board. Ask them if they like fruit. *What's your favourite fruit? Do you eat fruit in the morning? Ask What can you make with fruit?* Elicit or provide *fruit salad*. Write *fruit salad* on the board and ask the pupils to explain how to make fruit salad (eg, *Peel some fruit, cut it into small pieces and mix them together in a bowl*). Ask a pupil to draw some fruit salad on the board using the fruit they drew before. Ask the class *Can you see the different fruits in the bowl?* Yes. Explain that *when we combine two or more substances and they do not dissolve, they make a mixture.* Write the

word *mixture* on the board. *Fruit salad is a mixture. You can see the different fruits.*

- Look at Activity 3 with the class. Ask them to draw pictures and write the names of their fruits and then complete the short text about mixtures.

Answers: Fruit salad is a **mixture** because you can see the different **fruits**.

Extension activities

Experiment 1

Show the pupils four clear plastic cups, some warm water and some instant coffee, sugar, flour and sand. Go through the vocabulary with the class. Invite some pupils to pour some water into the plastic cups. Show them the sugar and ask *What happens when you mix water and sugar? Can you see the sugar in the water?* Demonstrate by adding some sugar to the water and stirring until the sugar dissolves. Show the pupils the plastic cup and ask them *Can you see the sugar?* No. *Sugar forms a solution.* Write on the board *Sugar forms a solution.* Follow the same procedure with sand, instant coffee and flour (instant coffee forms a solution; flour and sand don't). *Flour and sand form a suspension.* Explain that *some solids dissolve in water and some solids don't.*

Experiment 2

Show the pupils some warm water, a plastic cup, a saucer, a spoon and some salt. Go through the words with the class. Pour some warm water into the plastic cup. Add a spoonful of salt and stir until the salt dissolves. Pour the solution into the saucer and leave it in a sunny or warm place. Ask the pupils what they think will happen? Check with the class what happens in the following few days (the water evaporates and the salt remains in the saucer). Explain that this is how we get salt from the sea.