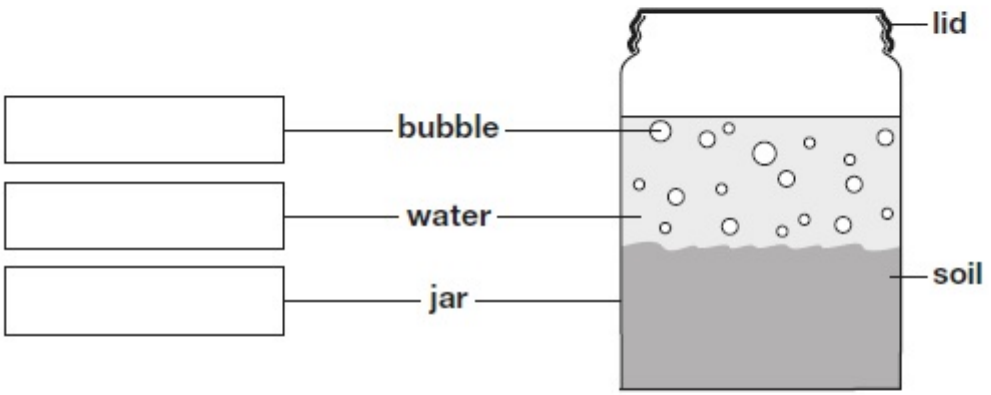
(a) Tom puts some soil and water in a jar with a lid.

He sees bubbles rising to the surface.

Complete the labels. Write **solid**, **liquid** or **gas** in each box.



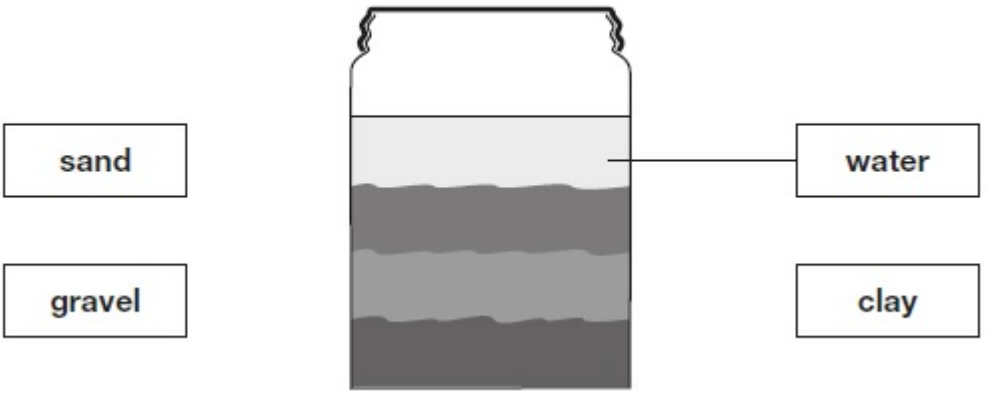
(b) Tom shakes the jar and then leaves it to stand.

After a day, the soil in the jar has separated into layers: sand, gravel and clay.

The gravel particles are the heaviest.

The clay particles are the lightest.

Draw **THREE** lines to match each label to the correct layer in the jar.
One has been done for you.



Citrines

1. Sort these items into solid, liquid or gas by drawing lines to the correct state of matter.

A wooden chair	•	
The bubbles in my lemonade	•	• **Solid**
Orange juice	•	
Tomato ketchup	•	• **Liquid**
A piece of chocolate	•	
The helium inside my balloon	•	• **Gas**

2. If you put something in a container, how would you tell if it was a liquid?

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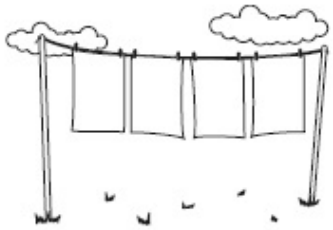
3. Write **true** or **false** for these statements:

Statement	**True or False?**
Gases can be squashed	
Solids can change shape on their own	
Gravity keeps liquids at the bottom of a container	
Gases don't weigh anything	

Emeralds

(a)

Kate wants to test how much time it takes for four different types of fabric to dry.



1. She soaks the different types of fabric in water.
2. She hangs the fabrics on a washing line outside.
3. She measures how much time it takes for the fabrics to dry.

Kate's results are shown in the table below.

Fabric type	silk	cotton	nylon	polyester
Drying time (minutes)	60	100	50	35

Which fabric dried the fastest?

_____

(b) Kate carried out a fair test.

Read the four statements below.

1. Use fabrics that cost the same amount of money.
2. Use fabrics that are the same size.
3. Hang the fabrics up at the same time.
4. Hang the fabrics in the same place.

Which of these things would have helped make Kate's test fair?
Tick **ONE** box.

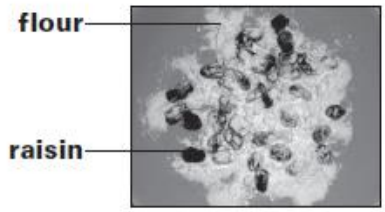
1 only	☐	1 and 3 only	☐
2 and 4 only	☐	2, 3 and 4 only	☐

(c) Drops of water fall from the bottom of very wet washing hanging on a washing line.

Write **true** or **false** for each of the statements about the drops of water.

The drops…	**True** or **False**?
form because liquids can flow.	_____
may change shape as they fall.	_____
form because the water becomes warm.	_____

(a) Sophie and her dad are cooking in the kitchen. Sophie spills some flour onto some raisins.



Tick **ONE** box to show the equipment Sophie could use to separate the flour from the raisins quickly.

Wooden spoon ☐

Sieve ☐

Weighing scales ☐

Filter ☐

(b) Sophie thinks of some things you can do in the kitchen.
The activities cause the materials to change.

Complete the table by writing **solid**, **liquid** or **gas** in each box to show how the materials change. One box has been done for you.

Activity	Before	After
Baking a cake	liquid	
Melting butter		
Making ice cubes		

(c) Write **yes** or **no** in each row of the table to show if the activity causes are **reversible** change.

Activity	Does the activity cause a reversible change? Yes or no?
Baking a cake	
Frying eggs	
Dissolving sugar	
Burning candles on a birthday cake	
Making ice cubes	

Amethysts

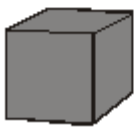
(a) Megan has three cups.
There is a solid in one cup, liquid in another, and gas in another.

Megan writes a description of what is in each cup.

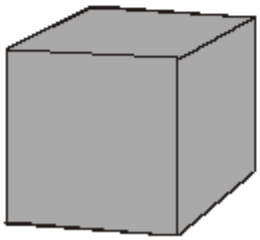
Draw **THREE** lines to match solid, liquid and gas to the best description of what is in each cup.

	Description
solid	I cannot see anything inside the cup.
liquid	I cannot pour the material out of the cup.
gas	When I move the cup, the material changes shape.

(b) Megan's teacher says gases spread out to completely fill up any container.



A small container of gas.



All of the gas from the small container can fill up a big container.

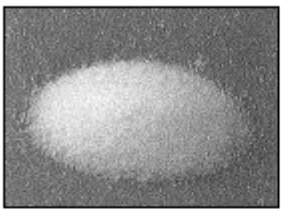
Write **yes** or **no** in each row to complete the table.

	Do they spread out to **completely fill up** any container?
Gases	yes
Liquids	
Solids	

Amethysts

(a) Class 6B have these materials.

Citric acid powder



Bicarbonate of soda powder

Water

Tick **ONE** box in each row to show whether each material is a solid, a liquid or a gas.

Material	Solid	Liquid	Gas
Citric acid powder			
Bicarbonate of soda powder			
Water			

(b) The teacher mixes citric acid powder with water. The powder dissolves.

Explain fully how the children could separate the mixture to get the citric acid powder back.

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