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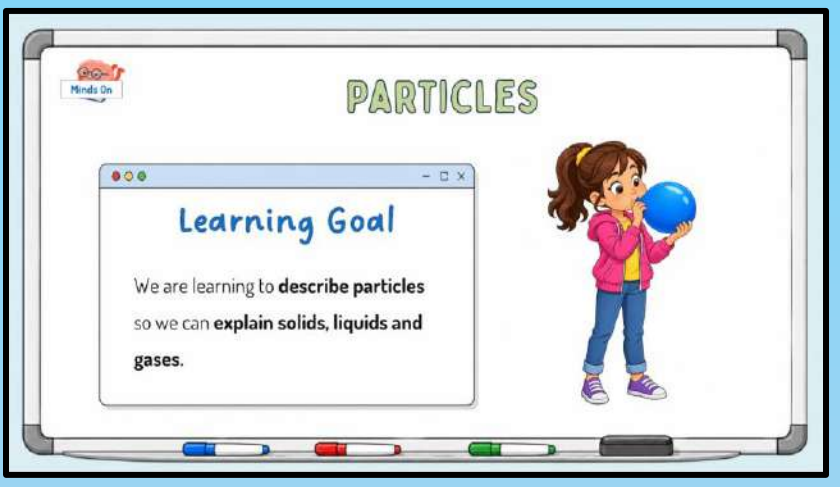
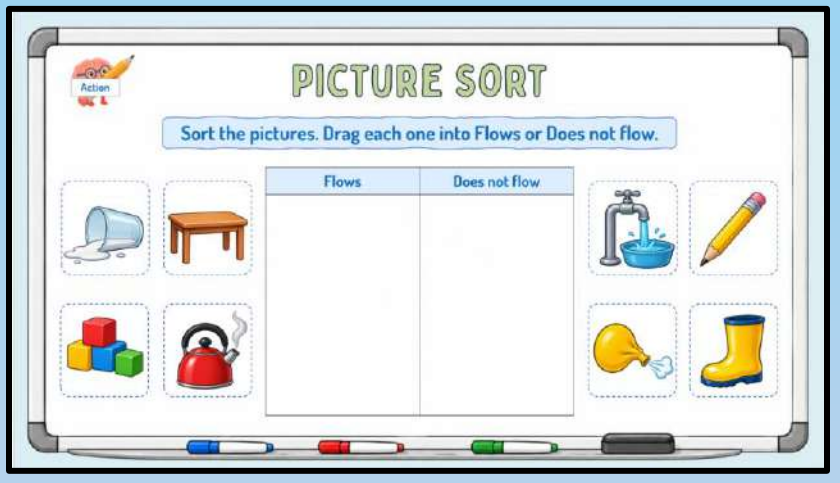
BC Science Curriculum Matter– Grade 3

3-Part Lesson Format

Part 1 – Minds On!

- Learning Goals
- Discussion Questions
- Quotes
- And More!



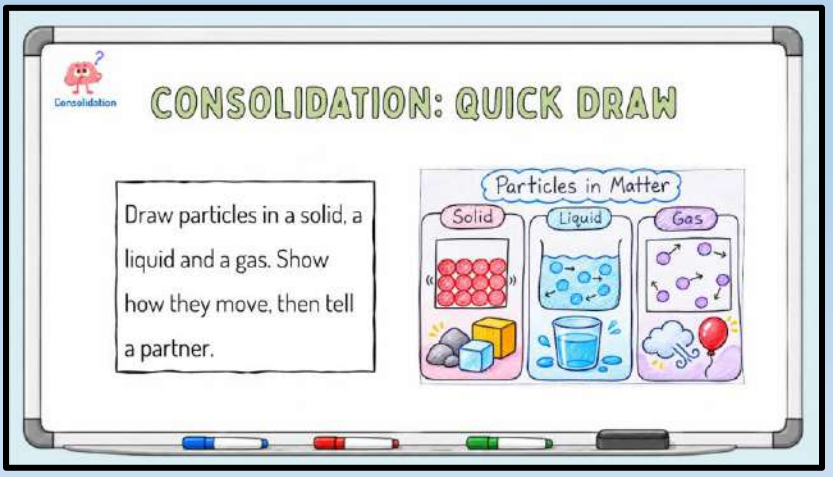


Part 2 – Action!

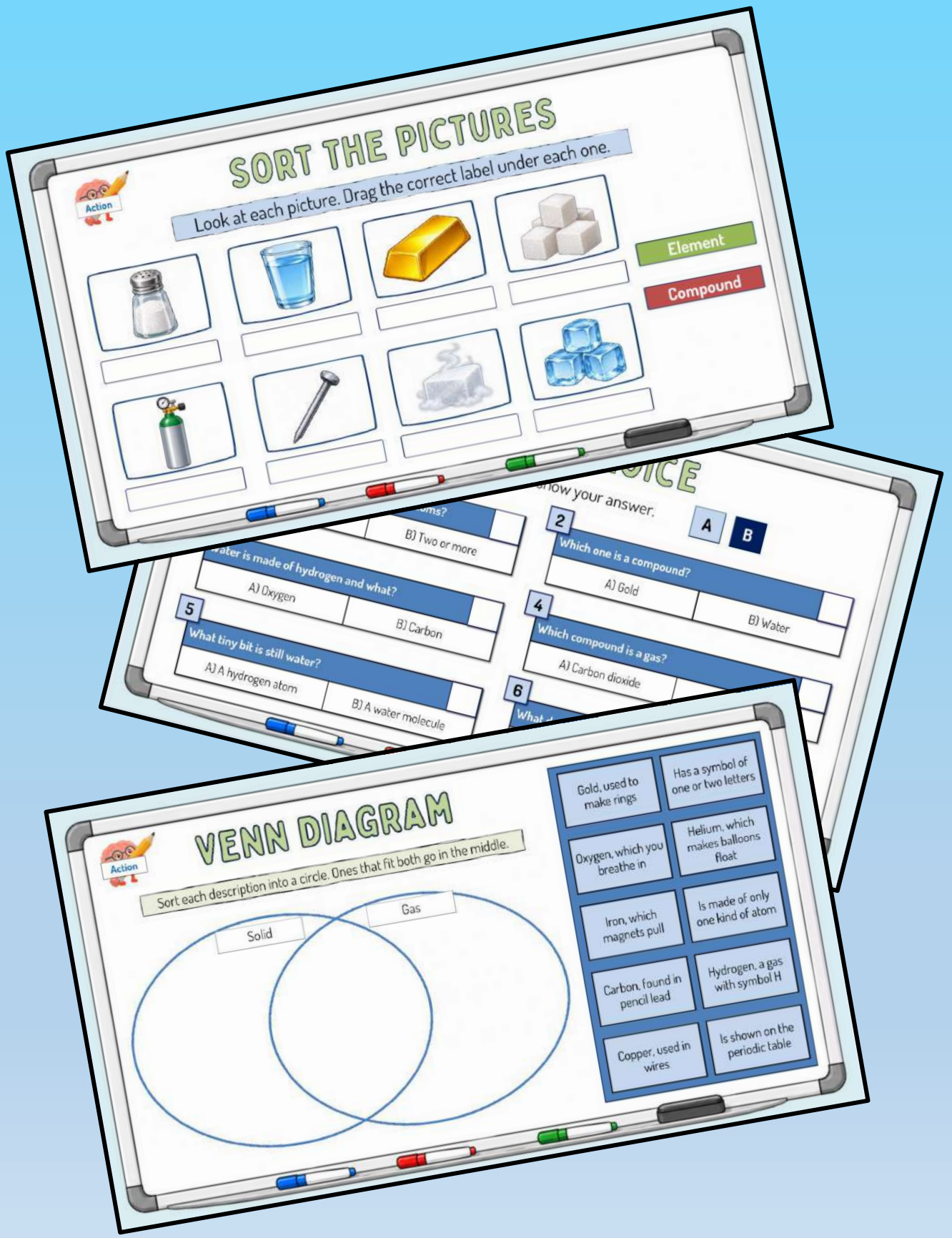
- Writing
- Matching
- Drag and Drop
- Drawing
- And More!

Part 3 – Consolidation!

- Exit Cards
- Quizzes
- Reflection
- And More!



BC Science Curriculum Matter– Grade 3



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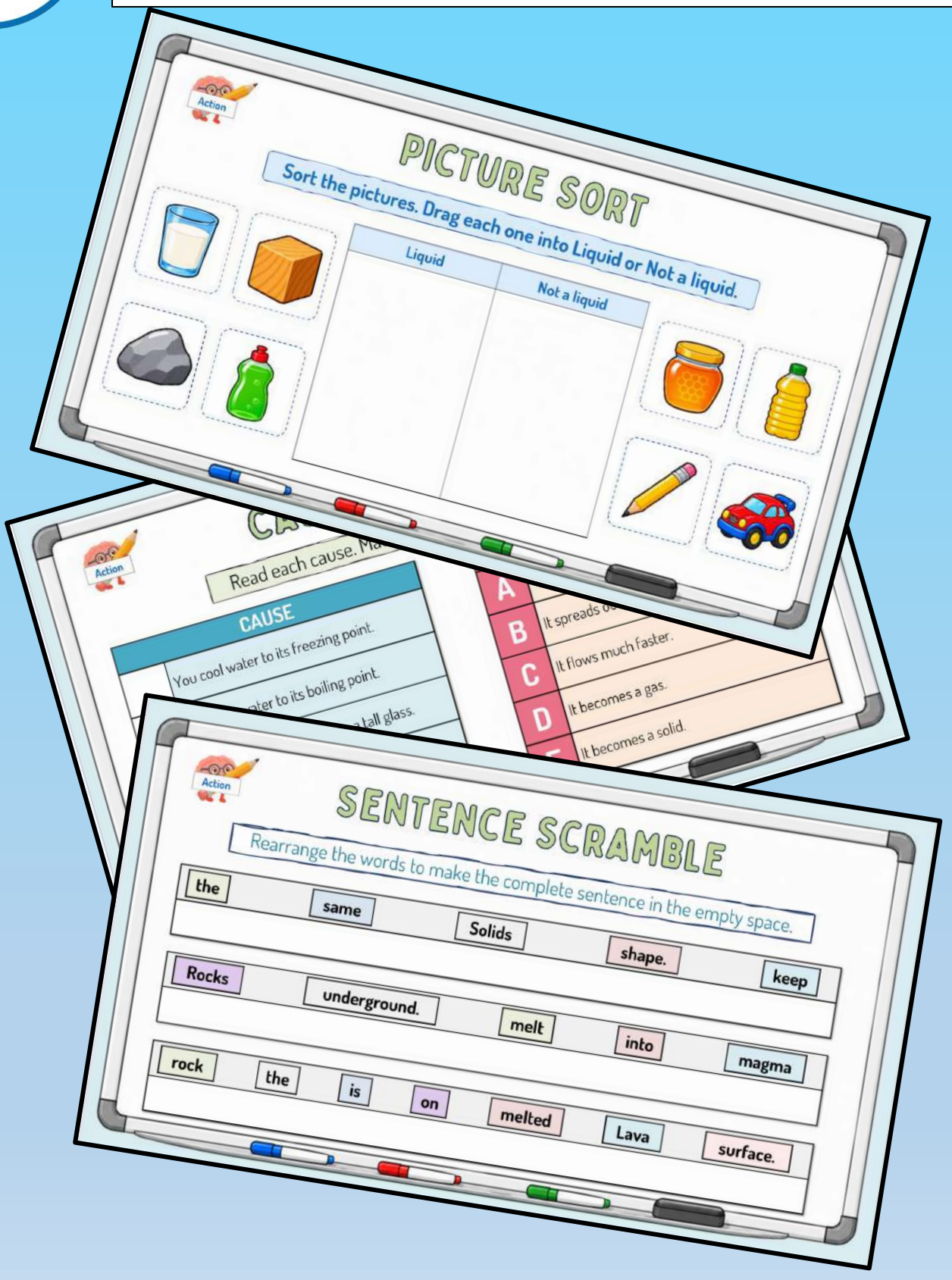

Workbook Preview

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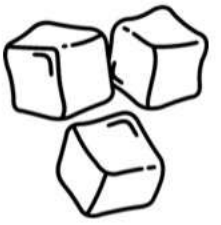
Grade 3 – Science Unit

MATTER



Big Idea: All matter is made of particles

Sample Questions

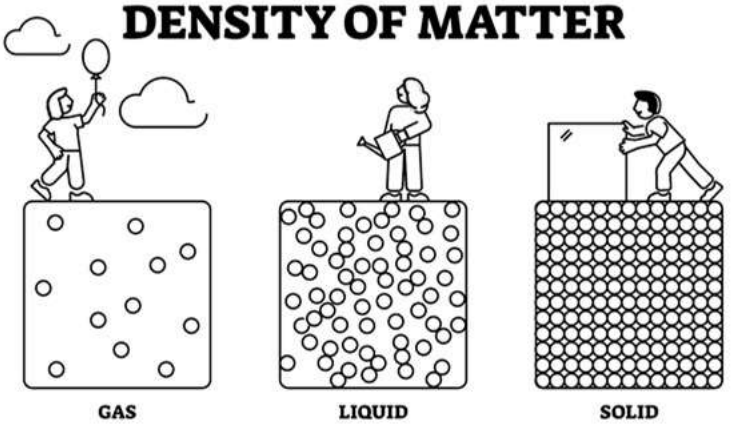
1) Why is matter known as the material of the universe?

2) How are matter and energy related?



Preview of 80 pages from this product that contains 183 pages total.

B.1		115
B.2	Atoms are building blocks of matter	6-7, 9-21, 28-29, 32, 45-48, 55-57, 59-60, 71-74, 82-86, 99-102, 110-115



MATTER



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Name: _____ 6

Curriculum Connection
B.1, B.2

What is Matter?

What is Matter?

Everything is made of matter. Look around. The desks in your classroom are made of matter, the air we breathe and the water we drink are both made of matter.

Matter is anything that has mass and takes up space.

PREVIEW

Partic

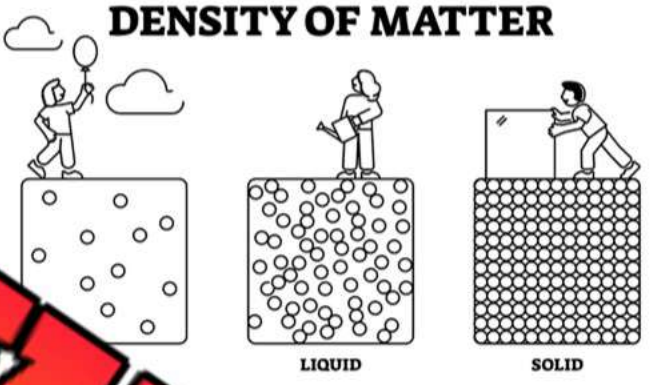
All matt is mad y particles.

When you look r, you

see the particles. You

octillion particles, or

7,000,000,000,000,000,000,000,00



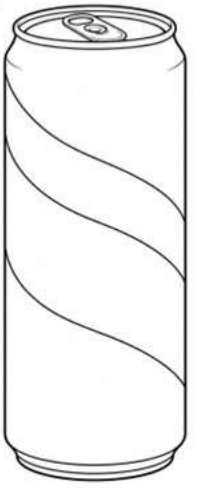


Types of Matter

Matter can be one of three types – liquid, solid, or gas

- **Liquids** – water, juice, syrup, coffee, soda
- **Solids** – food, wood, phone, clothes, sand
- **Gas** – air, oxygen, helium, steam, water vapour





Flowing

Liquids and gases flow. If you spill a liquid, it will flow and spread out. A gas also flows because it moves. Solids do not flow. If you spill a solid, like toy blocks, they will not flow.

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Name: _____ 7

Curriculum Connection
B.1, B.2

True or False

Is the statement true or false?

1) The particles in a solid are further apart than in a gas.	True	False
2) Matter is anything that has mass and takes up space.	True	False
3) Our bodies are matter.	True	False
4) Our thoughts and dreams are matter.	True	False
5) Liquid and gas flow.	True	False

Draw

xamples of each type of matter.

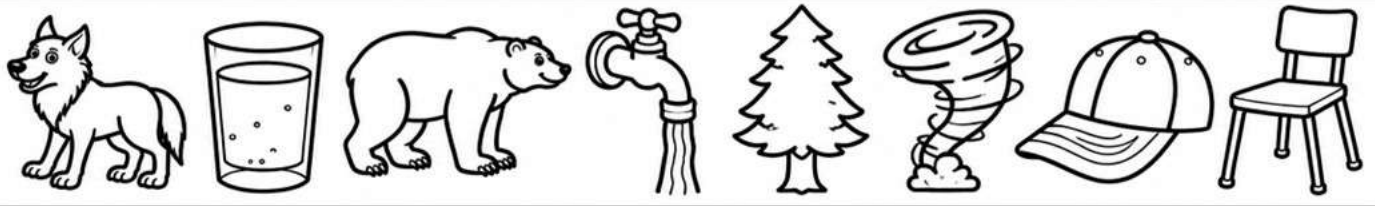
Solid	Liquid	s

PREVIEW

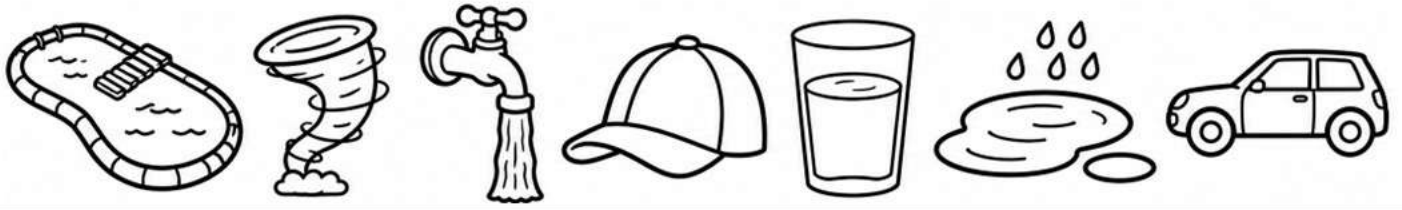
Decide

Answer the questions below.

1) Circle the solids below.



2) Circle the liquids below.

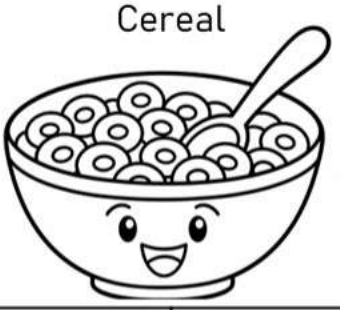


Name: _____ 8

Curriculum Connection
B.1

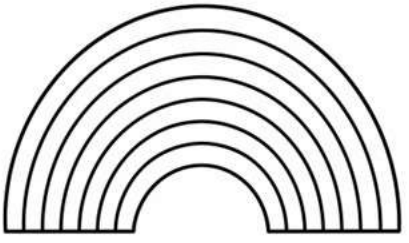
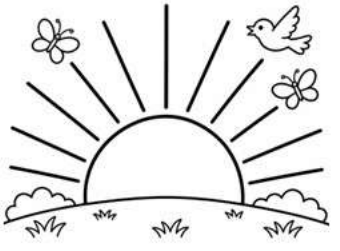
Matter – Yes or No?

Is the example matter – yes or no?

Dream	Cereal	Human
		
Yes / No	Yes / No	Yes / No

Love	Time	Idea
		
Yes / No	Ye / N	Yes / No

Flower	Dog	Table
		
Yes / No	Yes / No	Yes / No

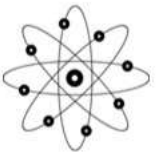
Wind	Rainbow	Sunlight
		
Yes / No	Yes / No	Yes / No

PREVIEW

Name: _____ 9

Curriculum Connection
B.2

Particles



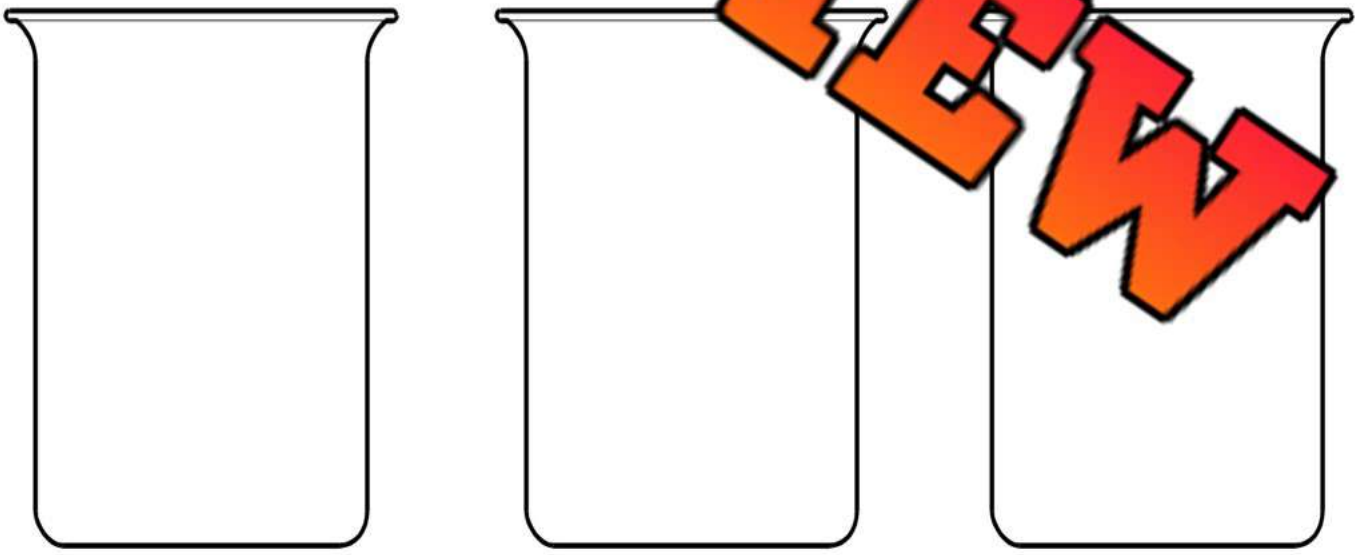
Fill in the Blanks Write the word from the word bank on each line.

Word Bank				
Small	Particles	State	Moving	Matter

All [illegible] touch are made up of _____. Particles are _____ [illegible]ces that make up _____. The particle theory states that sm[illegible]es ar[illegible] _____. They move faster based on which _____ of matter they are in.

PREVIEW

Draw Draw the Particles in Each St[illegible]atter[illegible] dots to each beaker to show its state of matter.



Gas **Liquid** **Solid**

Multiple Choice Circle the best answer.

Which particles are moving the fastest? **Gas** **Liquid** **Solid**

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Name: _____ 10

Curriculum Connection
B.2

Atoms: The Smallest Building Blocks

Everything Is Made of Atoms

Look around you. Your desk, the air in the room, and the water in the Fraser River are all matter. All matter is built from **atoms**, the tiny pieces that make up everything. An atom is a **building block**, a small part that joins with many others to make som bigger, just like a brick in a wall.

PREVIEW

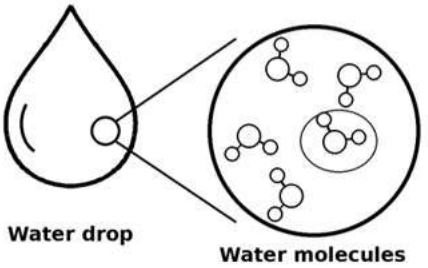
Far T aall to S

Atoms are so nd of thousands of them, side by side, wou cross hair. A school **microscope**, a tool that y thin k bigger, cannot show even one atom. tist special microscopes to make picture oms. Even a speck of dust holds **billions** of them, and a billion is a thousand millions.

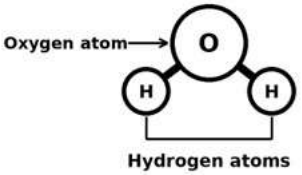


Inside a Drop of Water

From a drop to molecules to atoms



One water molecule



Hydrogen atoms

2 hydrogen atoms + 1 oxygen atom

Model enlarged to show detail

Atoms of One Kind

Scientists have found 118 di en of atoms. A group of atoms that are a the same kind is called an **element**. You will learn more about elements soon. Atoms are everywhere:

- **In the air** — atoms float all around you
- **In water** — one drop holds more than a billion billion
- **In you** — your body is built from atoms too

Name: _____ 11

Curriculum Connection
B.2

Finish the Sentence

Complete each sentence below.

1) An atom is called a building block because...

2) We cannot see single atoms with our eyes because...

3) Your de[illegible]the air and the water in a river are alike because...

True or [illegible]

Is [illegible]ment true or false?

1) A school mic[illegible] can s[illegible]gle atom.	True	False
2) A drop of water ho[illegible] atoms.	True	False
3) Scientists have found 11[illegible] of a[illegible]	True	False
4) Atoms of one kind make an elemer[illegible]	True	False
5) Scientists use special microscopes [illegible] make p[illegible]es o[illegible]ms.	True	False
6) Hundreds of thousands of atoms fit acros[illegible]hair.	True	False
7) A tiny speck of dust holds just a few atoms.	[illegible]rue	False
8) Your body is not made of atoms.	[illegible]	False

Making Connections

Think of something you build with, like blocks or [illegible]s it like atoms? How is it different? Write at least three senten[illegible]

PREVIEW

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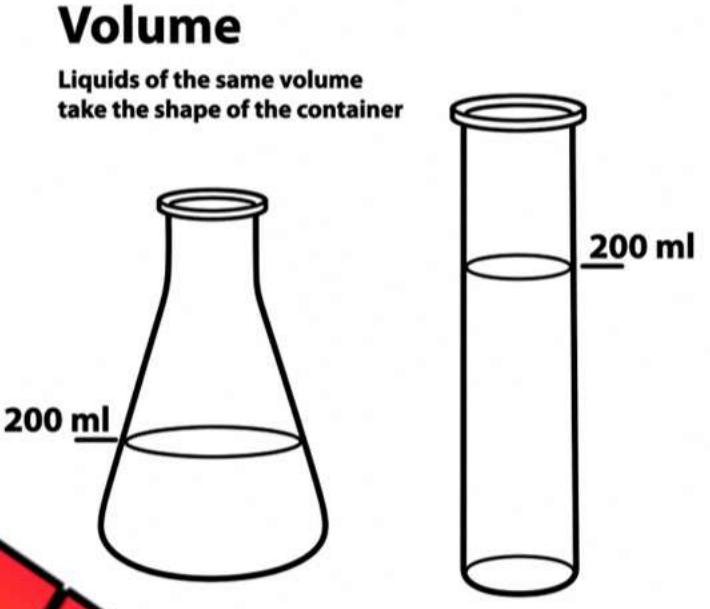
Name: _____ 19

Curriculum Connection
B.1, B.2

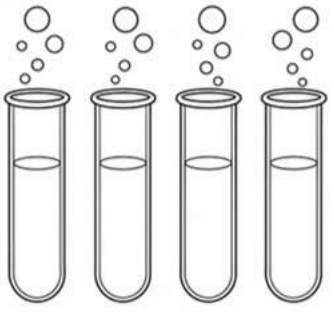
All About Liquids

Liquids

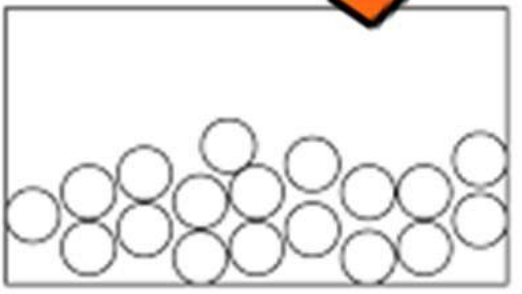
A **liquid** is a form of matter that can be poured. When you pour a liquid, it will always take the shape of its container. ...ur liquids into cups when w... The liquid will alwa... the sh... cup you are using. The ... of liquid is water.



Liquids all have w... take up space. Liquids have a def... volu... if you put 1 cup of water into a bowl or into a tall glass, it takes up t... am... space. The volume of a liquid refers to how much space the liquid tak...



Liquids can chang... eir ... Liquids can be made into solids when you co... to th... ezing points. Liquids can be turned into gases w... n y... e ... heir boiling point. The freezing and boiling po... fo... liquid is different.



PREVIEW

Properties of Liquids

- Do not have a definite shape
- Take the shape of their container
- Fill the bottom of a container or spread when they are not contained
- Maintain the same volume in different containers
- Are difficult to compress or squeeze because the particles are close together

Name: _____ 20

Curriculum Connection
B.1, B.2

Fill in the Blanks

Write the missing word on the line

1) Liquids will always take the shape of their _____.

2) The most common form of liquid is _____.

3) Liquids can change their states of _____.

4) Liquids turn into solids when they are _____

(cool)

5) Liquids fill the _____ of their container, not the top.



PREVIEW

What Happens?

Circle what happens.

1) You cool water to its freezing point.	
A) It becomes a gas	B) It becomes a solid
2) You heat water to its boiling point.	
A) It becomes a solid	B) It becomes a gas
3) You pour 1 cup of juice into a tall glass.	
A) It is still 1 cup	B) It becomes ...
4) You spill milk on the table.	
A) It stays in a tall pile	B) It spreads out

Making Connections

What does this reading remind you of in your life?

_____

_____

_____

_____

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Curriculum Connection
B.1, B.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ | Mark

Is the statement true (T) or false (F)?

1) Liquids have weight and take up space.	T / F
2) A liquid has a definite shape.	T / F
3) 200 mL of water takes up the same space in any container.	T / F
4) Heating a liquid to its boiling point turns it into a gas.	T / F
5) Every liquid freezes at the same temperature.	T / F

Name: _____ | Mark

Is the statement true (T) or false (F)?

1) Liquids have weight and take up space.	T / F
2) A liquid has a definite shape.	T / F
3) 200 mL of water takes up the same space in any container.	T / F
4) Heating a liquid to its boiling point turns it into a gas.	T / F
5) Every liquid freezes at the same temperature.	T / F

Name: _____ | Mark

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3) 200 mL of water takes up the same space in any container.	T / F
4) Heating a liquid to its boiling point turns it into a gas.	T / F
5) Every liquid freezes at the same temperature.	T / F

PREVIEW

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Name: _____ 22

Curriculum Connection
B.1

Liquids Used At Home

Using Liquids At Home

We need liquids to survive. Since our body is made of mostly water, we need to drink water as we sweat and lose water. Juice, milk, and pop are made of mostly water. Check out the other uses of liquids below.



- ✓ **Soap** – [illegible] our hands, bodies, dishes, and clothes
- ✓ **Oil** – [illegible] and using in machines
- ✓ **F**[illegible] honey, [illegible] auce, and peanut butter are used to cook with and eat
- ✓ **Glue** – liq[illegible] ed [illegible] things together

Think Think [illegible] me. Explain how you use them.

Liquid	[illegible] You Use It

Draw Draw a picture of two liquids you can buy in a store.

PREVIEW

Name: _____ 23

Curriculum Connection
B.1

Flowing Liquids

Characteristics of Liquids

We have learned that liquids flow. Peanut butter is a liquid that flows slowly. If you tip it upside down and leave it, it ... our out slowly over a long ti...

Flows Slow	Flows Fast
Honey	Oil
Peanut Butter	Water
Shampoo	Vinegar
Mayonnaise	Apple Juice

... flows ... er. If you tip a glass of water over, it will flow fast and ...

Heated liqui... fast ... liquids. If you put peanut butter in the mi... it will ... uch faster. Hot water flows faster than cold ...



PREVIEW

Flow Does the liquid flow fast ... slow?

1) Milk	Fast	Slow
2) Glue	Fast	Slow
3) Mayonnaise	Fast	Slow
4) Honey	Fast	Slow
5) Yogurt	Fast	Slow

6) ...	...st	Slow
7) Juice	...	Slow
8) Frozen Smoothi...	...	...low
9) Milkshake	...	Slow
10) Oil	Fast	Slow

Draw Draw a picture of a liquid that flows fast and one that flows slowly.

Fast	Slow

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Name: _____ 24

Curriculum Connection
B.1

Experiment - Flowing Liquids

Research Question — What are we testing?

Which liquids will flow the fastest, and which will flow the slowest?



Materials — What do we need for our experiment?

- Sm[illegible]ar pla[illegible]e
- Small candi[illegible]
- Various liquids wate[illegible] hone[illegible]n syrup, etc.
- Stopwatch (optional)

PREVIEW

Method — How do we complete the experi[illegible]t?

1) Fill each of the cups full of the different liquids.
2) Drop a candy into the first liquid. Use the stopwatch to time h[illegible]t[illegible] to drop to the bottom of the cup.
3) Repeat this step for all liquids.
4) Record the length of time for each liquid on the Observations page.

Hypothesis — Which liquid will flow the fastest and the slowest?

Fastest _____

Slowest _____



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Name: _____ 25

Curriculum Connection
B.1

Observations Record how long the candy takes to sink to the bottom.

Liquid	Prediction (seconds)	Actual time (seconds)

Diagram Dra[illegible] yo[illegible]periment. Draw the cup, and small candy flowing throug[illegible]quid.

PREVIEW

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Name: _____ 26

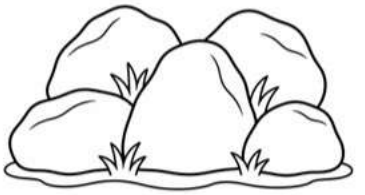
Curriculum Connection
B.1

All About Solids

All About Solids

Solids are a form of matter. Unlike liquids, solids don't flow or pour. Solids have a shape that stays the same. The particles in solids are packed tightly together so they cannot move. This makes solids hard to squeeze.

Soli[illegible]not flow. They cannot be poured. Solids can be changed into liquids by heati[illegible] o[illegible] have probably seen ice melt into water. When we take ice out of th[illegible]zer, the[illegible] room is warmer than the ice. This means the air is heating the ic[illegible]lt i[illegible]ich will turn it into water.



Natural Solids vs [illegible]n Ma[illegible]o

When you look outside, [illegible] ar[illegible] many [illegible]l solids. Rocks, trees, and ice are all example[illegible] nat[illegible] A **natural solid** is a solid that humans did not make. A **human mad**[illegible] is a s[illegible] did make. Examples of human made solids are roads, schools, and b[illegible].

PREVIEW

Examples Write some examples of natural and [illegible]n made s[illegible]

Natural Solid	Huma[illegible]

Multiple Choice Circle the best answer.

1) Solids are a form of_____ .	Matter	Food
2) Solids have tightly/loosely packed molecules.	Tightly	Loosely
3) When air heats ice, the ice will _____.	Freeze	Melt
4) Which is an example of a natural solid?	Grass	School
5) Which is an example of a human made solid?	Bus	Rock

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Name: _____ 27

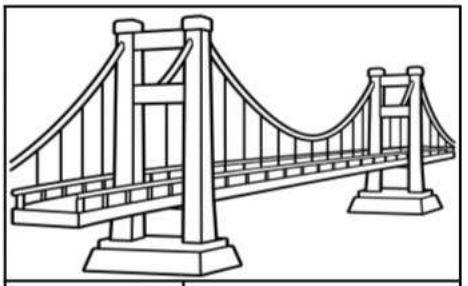
Curriculum Connection
B.1

Natural vs Human-Made Solids

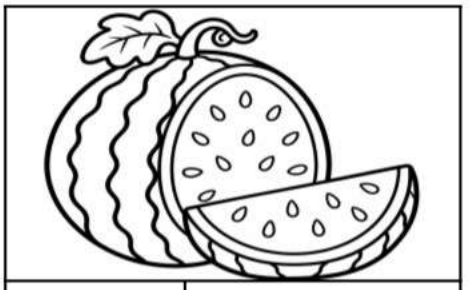
Directions Circle whether the solid is human-made or natural?



Natural	Human-Made



Natural	Human-Made



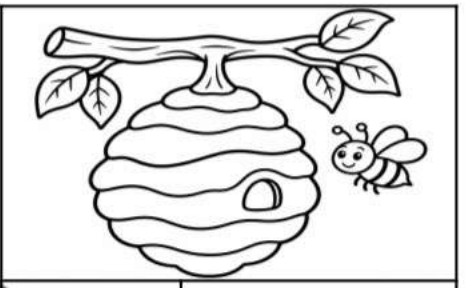
Natural	Human-Made



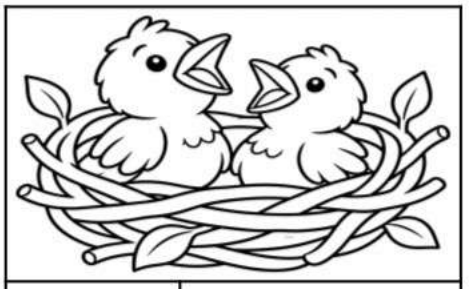
Natural	Human-Made



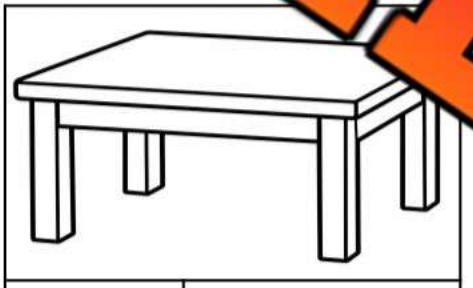
Natural	Human-Made



Natural	Human-Made



Natural	Human-Made



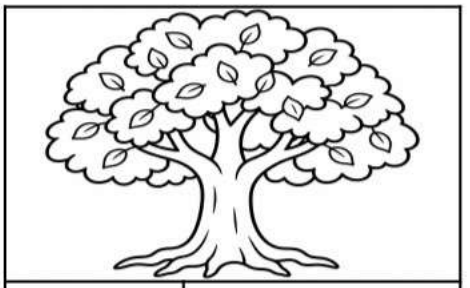
Natural	Human-Made



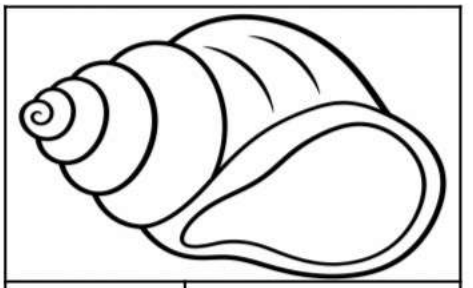
Natural	Human-Made



Natural	Human-Made



Natural	Human-Made



Natural	Human-Made

PREVIEW

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Name: _____ 28

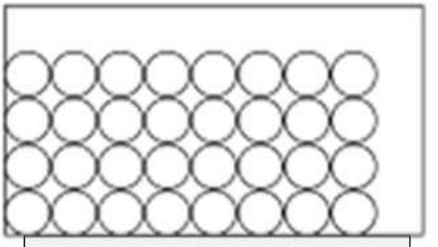
Curriculum Connection
B.1, B.2

Characteristics of Solids

All About Solids

Solids can have a lot of different characteristics. Many solids are hard like your desk, the walls and floors. Solids can also be soft, like a cotton ball. Some solids like play dough and clay can be molded so you can change their shape.

They [illegible] still solids. When you break a solid, it stays [illegible] one piece. When you break a cookie, [illegible] and crumbs, but it will not become a liq[illegible]



The particles do not move or spread out to fit the container

PREVIEW

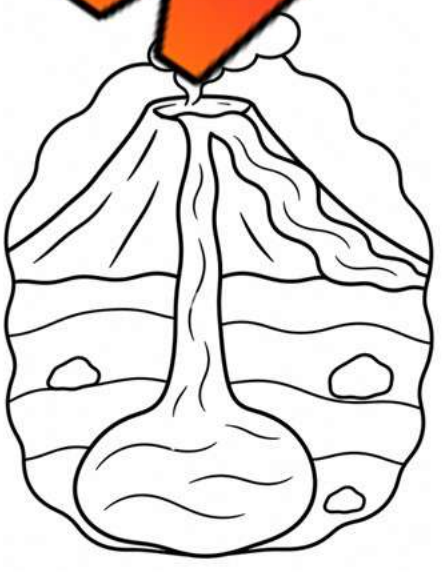
Therefore, solids:

- Can't be poured
- Holds their shape unless an outs[illegible]ce act[illegible]it (example – cuts it)
- Has a definite shape (do not take the sha[illegible]eir c[illegible])
- Is difficult to squeeze as the particles are a[illegible]d[illegible]t
- Is dense because there are many particles packe[illegible]to[illegible]
- Can be described in many ways, including hard, soft, rough, [illegible]nd

Solids Can Melt

When a solid is heated to its melting point, it will turn into a liquid. Some solids, like ice, will change into a liquid at room temperature. Other solids, like rocks, will need to be heated at very high temperatures to melt.

Rocks will melt under the ground in magma. Magma is melted rock. When magma comes up to the surface through a volcano, it is called lava.



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Curriculum Connection
B.1, B.2

True or False

Is the statement true or false?

1) When you break a solid into pieces, it becomes a liquid.	True	False
2) When a solid melts, it becomes a liquid.	True	False
3) A solid takes the shape of its container.	True	False
4) Solids can be strong, weak, soft, or hard.	True	False
5) Rocks can melt into liquids.	True	False
6) Rocks can't melt because they are too hard.	True	False

PREVIEW

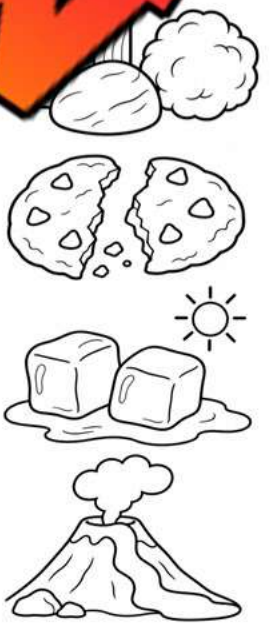
Visu

hat you pictured while reading. Explain the picture.

Check the Solid

Put a check (✓) beside each of

☐	Holds its own shape
☐	Can be poured
☐	Takes the shape of its container
☐	Has a definite shape
☐	Its particles are packed tightly and don't move around
☐	Spreads out when it is spilled
☐	Can be hard, soft, rough or smooth
☐	Stays in solid pieces when it is broken
☐	Fills the bottom of its container



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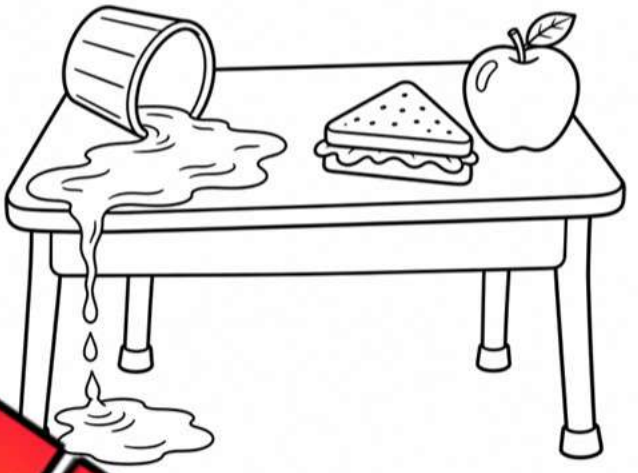
Curriculum Connection
B.1

Flow - Difference Between Solids and Liquids

Liquids

A liquid will always flow from high to low. This is because gravity is pulling everything towards the centre of the Earth. If you spill milk on your desk, it will flow to the lowest point on your desk and onto the floor.

Liqu[illegible]will always **flow**. When a liquid flows, it [illegible]e liquid moves towards the lowe[illegible]a is flat, the liquid wi[illegible]flow a[illegible]out[illegible]n the flat surface.



Some liquids fl[illegible] Honey does not flow as mu[illegible]ate[illegible] you poured water and honey into diff[illegible]ps, t[illegible]ter cup would fill up faster.

Solids

If you spill your lunch onto your desk, it will st[illegible]he[illegible]sandwich and snacks are solids and solids do not flow. When trying[illegible]e ou[illegible]mething is a solid or a liquid, you need to think about whether it flows or not[illegible]ay seem like a solid, but it's a liquid. A spoonful of peanut butter wi[illegible]flo[illegible]he spoon.

PREVIEW

Rhyming | Write a rhyming word

Word	Rhyming Word
Flow	
Will	
Flat	

Word	Rhyming Word
Not	
Land	
Cup	

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Curriculum Connection
B.1

Solid or Liquid?

Solid or Liquid? Circle whether the picture is a solid or a liquid



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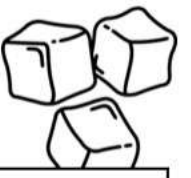
Curriculum Connection
B.1, B.2

Activities - Solids and Liquids



Word Search

Find the words from the word bank.

Matter	Solid	Liquid	Freezing	Melting
Ice	Water	Rain	Flow	Particles

V	K	E	B	M	M	G	B	J	B	F	S	F	F	P	D	Z	B	I
R	E	[illegible]	O	D	A	T	F	E	H	I	A	K	J	J	K	O	I	
V	[illegible]	N	[illegible]	Q	T	Y	R	A	I	N	F	L	O	W	B	Z		
T	D	O	[illegible]	K	G	T	J	S	D	V	Y	R	L	F	T	Z		
U	K	E	N	[illegible]	E	G	N	I	Z	E	E	R	F	W				
L	B	F	D	N	L	[illegible]	A	R	T	I	C	L	E	S	L	S		
R	W	X	I	R	K	O	[illegible]	E	V	M	J	J	J	M				
J	A	V	U	D	H	M	S	G	[illegible]	E	H	V	M	W	S			
S	W	W	Q	X	L	R	K	R	T	[illegible]	J	K	X	V				
N	A	P	I	S	T	D	K	Z	R	M	E	[illegible]	J	S	U			
Q	Q	F	L	A	Z	D	Y	W	V	U	N	Z	[illegible]	A	Y			

PREVIEW

Word Scramble

Unscramble the words from the word bank.



MITNELG		FEIZERNG	
NAIR		METTAR	
LUQIID		WETAR	
PLERITCAS		SODLI	
CIE		LOFW	

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Curriculum Connection
B.1

Mass: How Much Matter?

What Is Mass?

Everything around you is **matter**, which is anything that takes up space and has mass. **Mass** is the amount of matter inside an object. A rock, a pencil and a hummingbird are all matter, but each holds a different amount.



Ma[illegible]h same as size. A big bag of popc[illegible]oks lar[illegible]a small bag of sugar, yet the sugar l[illegible]ss [illegible]use more matter is packed

Measuring Mass

We find mass with a **balance**, a tool [illegible] pans that compares one object with another. When t[illegible]ans hang level, both sides hold the same mass. S[illegible]sts [illegible]in these units:

- **Gram (g)** — a small unit; a paperclip has a [illegible]abou[illegible]
- **Kilogram (kg)** — a bigger unit equal to 1000 gra[illegible]

Nickel — a Canadian nickel has a mass of about 4 g



Small and Mighty

A rufous hummingbird that spends its summer in British Columbia has a mass of only a few **grams**. It is still matter, just a very small amount. A 1 kg bag of sugar holds hundreds of times more matter than that tiny bird.

PREVIEW

Name: _____ 34

Curriculum Connection
B.1

Define

What do the terms below mean?

Matter	
Mass	
Balance	

PREVIEW

Draw

Dra[illegible]ct w[illegible]ittle mass and a small one with lots. Label both.

1		2	

Questions

Answer the questions below.

1) Which has more mass, a big bag of popcorn or a small bag of sugar? Why?

2) How are matter and mass connected? Use an example from the text.

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Curriculum Connection
B.1

Colouring Sheet Colour the balance. Which side has more mass?



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Curriculum Connection
B.1

Story: The Rising Water Level

The Pebble Test

Priya and Grandpa walked along a pebbly beach on Vancouver Island. Priya filled her pockets with smooth grey stones.

"How much space does one stone take up?" she asked.

Back at the cabin, Grandpa set out a clear measuring cup. Priya poured in water until it reached the 200 mL line. That height was the **water level**, the top surface of the water.

She dropped one stone in. It began to **sink**, which means to drop to the bottom. The water level rose to 220 mL.

"The stone **displaced** the water," said Grandpa. "To displace means to push something out of its place. The stone took up space, so the water has to move up."

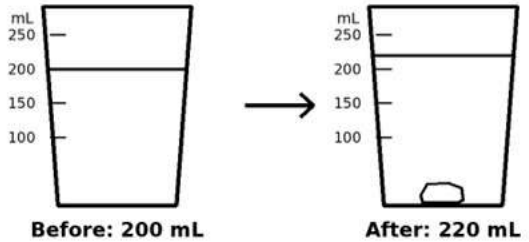
"So the stone has a volume of 20 mL," said Priya, "because 220 minus 200 is 20."

Next, Priya tried a bigger stone. This time she filled the cup to the very brim. Plop! Water began to **overflow**, which means to spill over the edge. It ran across the table.

Grandpa laughed and passed her a towel. "Leave some room next time," he said.

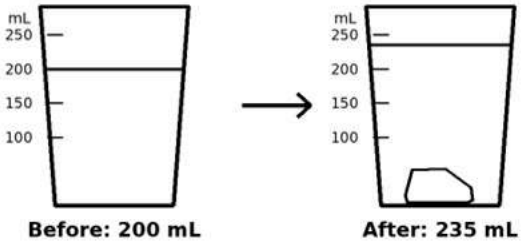
PREVIEW

Small stone



220 mL − 200 mL = 20 mL

Large stone



235 mL − 200 mL = 35 mL

Priya started again with 200 mL. The big stone raised the level to 235 mL. "Thirty-five!" she cheered.

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Curriculum Connection
B.1

Questions Answer the questions below using evidence from the text.

1) Why does the water level go up when a stone sinks?

2) How did Priya find out the volume of the small stone?

PREVIEW

Will It Overflow? The cup is full. Will the water spill over? Circle Yes or No.

1) 200 mL of water + a 20 mL stone	Yes	No
2) 240 mL of water + a 20 mL stone	Yes	No
3) 200 mL of water + a 35 mL stone		No
4) 230 mL of water + a 15 mL stone		No
5) 245 mL of water + a 10 mL stone	Yes	No
6) The cup is full to the brim + any stone	Yes	

Be the Scientist Fill in the missing numbers in Priya's chart for a 400 mL container.

Stone	Water level before	Water level after	Volume of the stone
Small stone	200 mL	220 mL	_____
Big stone	200 mL	235 mL	_____
Flat stone	200 mL	_____	10 mL
Mystery stone	200 mL	260 mL	_____
Round pebble	_____	315 mL	15 mL

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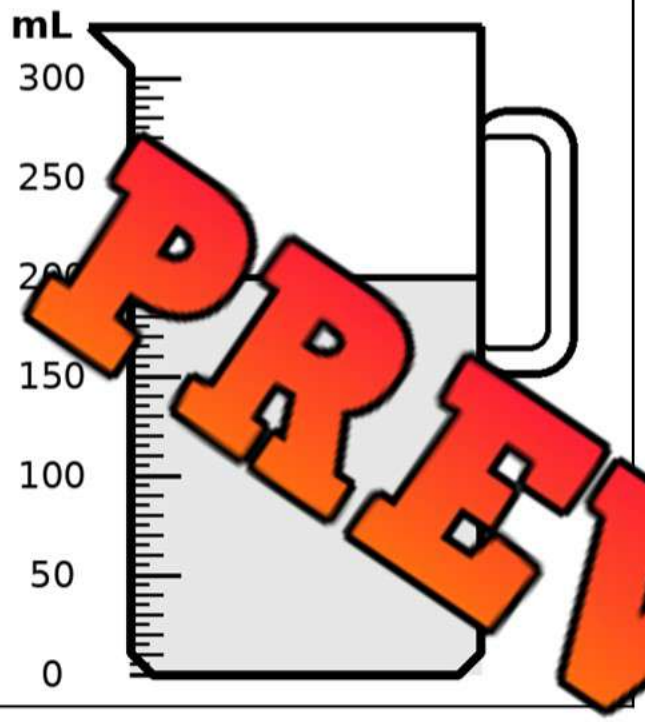
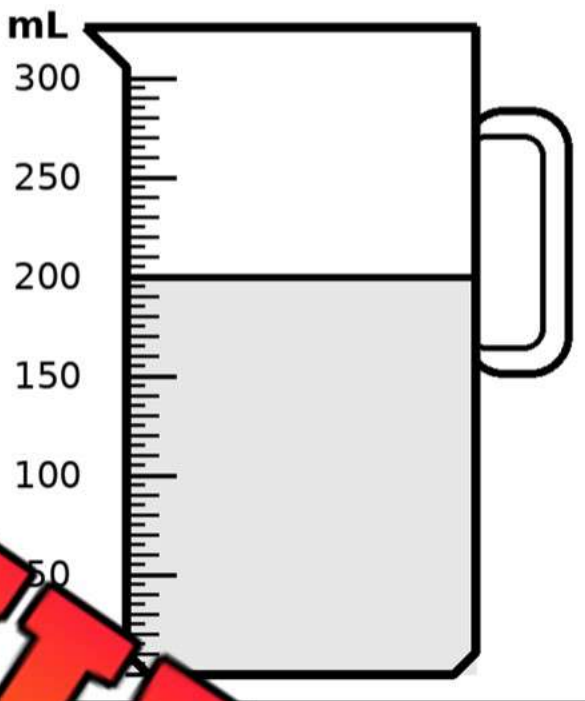
Curriculum Connection
B.1

Draw the Water Line	Each cup starts with water, then a stone is dropped in. Draw a line on the cup to show the new water level.

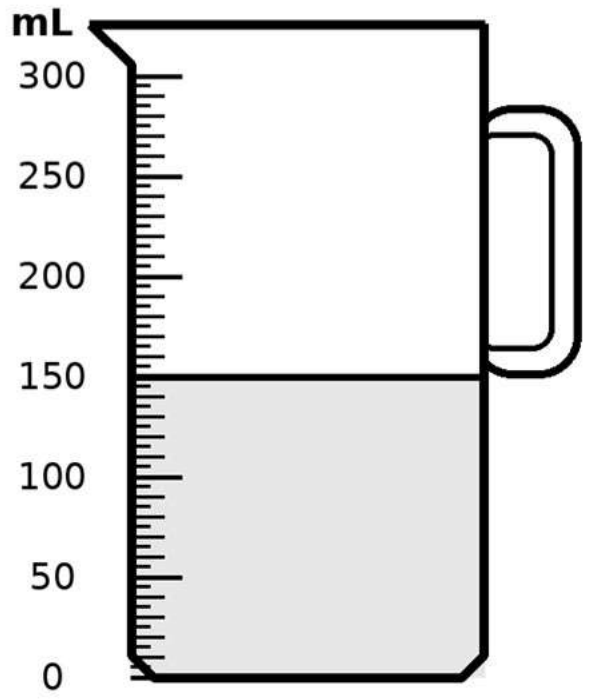
1) Starts at 200 mL. The stone takes up 20 mL.



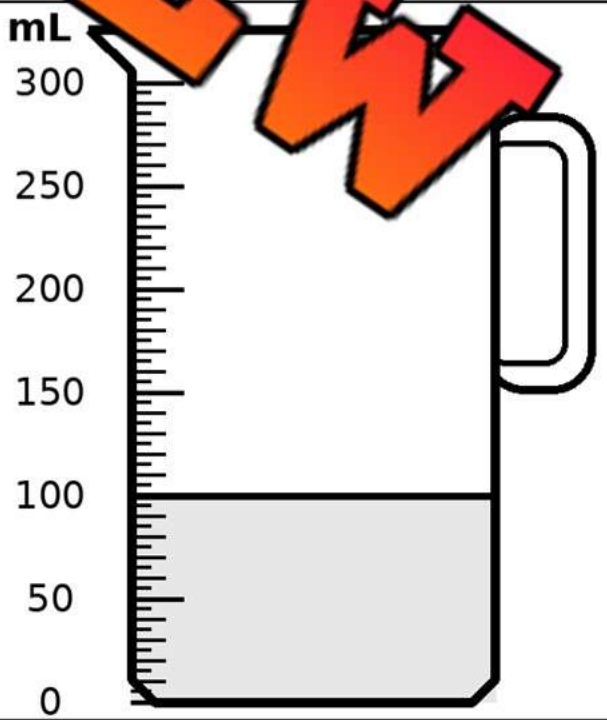
2) Starts at 200 mL. The stone takes up 35 mL.



3) Starts at 150 mL. The stone takes up 50 mL.



[illegible]rts [illegible] stones go in, and e[illegible] up 20[illegible]



PREVIEW

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Curriculum Connection
B.1, B.2

FAQ: Is Sand a Solid or a Liquid?

Matter Detectives — Your Questions About Tricky Materials!
Hi! We are the Matter Detectives. Here are the questions kids ask us most about sand, jelly and slime.

Is sand a solid or a liquid?

Sand is a solid made of **grains**, tiny hard bits of rock about 0.06 to 2 millimetres wide. Grains **pour**, meaning flow out when tipped, but each grain stays hard and keeps its

What is a state of matter

A **state of matter** is a form matter takes: solid, liquid or gas. Scientists do not guess. They test how matter acts, and the results show its state.

How do scientists decide

They check **shape**, the outline an object keeps. A solid keeps its own shape. A liquid takes its cup's shape, with a flat top. A gas spreads out to fill any space.

Why does sand pour if it is solid?

Grains do not lock together, so they slide and roll past one another when tipped. A heap of sand stays heaped, but water goes flat. Flour is similar: tiny hard specks that pour.



Is jelly a solid or a liquid?

Jelly holds lots of water inside a stretchy net of gelatin, a protein. The net keeps jelly in one shape on a plate, so it acts like a solid.

What about toothpaste and slime?

Some materials are in between. Toothpaste squeezes out of its tube yet holds its shape on your brush. Slime flows slowly when left alone but can hold a ball briefly. Scientists study how they act.

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Curriculum Connection
B.1, B.2

Multiple Choice

Circle the best answer.

1) What is sand made of?			
Tiny liquid drops	A thick liquid	Tiny solid grains	A cloud of gas
2) About how wide is one grain of sand?			
0.06 to 2 mm	10 to 20 cm	1 to 2 metres	5 to 10 km
3) Which one of these is a state of matter?			
Gra	Shape	Balance	Liquid
4) How do s find a state of matter?			
Lool	Test how it acts	Weigh it only	Read its label
5) What s a sin sand do?			
Flows like w	prea flat	Keeps its shape	Turns to gas

Scenario

A friend tip a cu a bucket and says, "Sand is a liquid!" What could yo fri its grains? Use the word shape.

Spot the Myth

One paragraph below is wrong. Circle it a

A — Jelly holds a lot of water, but a net of gelatin keeps it in one sha so it acts like a solid when it sits on a plate.

B — If a material can pour, it must be a liquid. That means sand is a liquid, because it pours out of a bucket just like water does.

C — Flour pours from a bag, but each speck is a tiny hard grain, so flour is a solid made of many small pieces that slide past.

PREVIEW

Name: _____ 47

Curriculum Connection
B.1, B.2

Colouring Sheet Colour the sand. Does it pour like a liquid?



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Curriculum Connection
B.1

Lab - Testing the Dissolving Process

Part 1 How fast will it dissolve?

Does the size of a solid affect how fast it dissolves into the liquid? Consider the following two scenarios?

Option 1: You put an Alka-Seltzer tablet into water.
Option 2: You crush the tablet into powder and add it to the water.

Hypothesis: Which scenario will allow the solid to dissolve faster into a mixture?

Part 2

Does the size of the solid affect how it will fizz in the liquid? If we performed the same scenarios as above, which solid will allow the fizz to continue longer?

Hypothesis: Which scenario will allow the fizz to continue longer?

Materials What materials will we need?

- Two beakers
- Stopwatch
- 2 Alka-Seltzer tablets
- 2 cups of water (250ml)



Procedure What are the steps to do to complete this lab?

1) Fill two beakers with 1 cup of water each.
2) Crush one Alka-Seltzer tablet into powder.
3) Add the tablet and powder to different cups of water at the same time.
4) As soon as the Alka-Seltzer hits the water, press start on the stopwatch.
5) Watch the beakers closely. Record when the powder and tablet fully dissolve.
6) Leave the stopwatch going and wait for the solutions to stop fizzing. Record when this happens for both beakers.

PREVIEW

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Curriculum Connection
B.1

Observations

Record what you saw below.

Scenario	Whole Tablet	Powder
Fully Dissolved		
Fizz Stopped		

Results

Answer the questions below.

1) Were your [illegible] incorrect? Explain.

2) What is the solid in this experiment?

3) What is the liquid in this experiment?

4) Is this a mixture? Explain.

5) When have you made a mixture like this before? Explain.

PREVIEW

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Curriculum Connection
B.1

Experiment - Gelatin

Research Question — What are we testing?

What will we see about the changing states of matter when we make gelatin?

Materials — What do we need for our experiment?

- Electri
- Clea
- Me ng cups
- Stirrin spoon
- Gelatin pac ere urs – green and red)
- Water
- Ice cubes



Method — How do we co ete ?

1) Empty 1 packet of red gelatin powder into ar b
2) Empty 1 packet of green gelatin into ano lea
3) Following the directions on the gelatin packet, t r w the required amount of boiling water to each bowl.
4) Stir each bowl and watch what happens to the gelatin pow .
5) Add cold water to the red gelatin.
6) Add ice cubes to the green gelatin so you can compare cold water to ice.
7) Stir both bowls until the ice cubes have melted in the green bowl and the red bowl mixture is well mixed.
8) Observe and record what state of matter is in the bowls.
9) Set both bowls into a refrigerator and check them in 1 hour 2 hours and 3 hours. Observe and record the state of matter in each bowl at the 1-hour, 2-hour and 3-hour time.

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Curriculum Connection
B.1

Hypothesis Will the gelatin turn into a solid? Which mixture will change faster?

Observation Circle which state of matter the gelatin is.

Time P	Observations – Red Jello	Observations – Green Jello
After	lid or Liquid	Solid or Liquid
After 2 hours	Solid uid	Solid or Liquid
After 3 hours	Liqu	Solid or Liquid

Results Answer the questions

1) Was your hypothesis correct or wrong? Ex

2) Did using ice cubes have an effect on the gelatin? Explain.

3) After you stir in the hot water, is the gelatin a liquid or a solid?

Liquid	Solid

4) Does gelatin end as a liquid or solid?

Liquid	Solid

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Curriculum Connection
B.1, B.2

Same Size, Different Mass

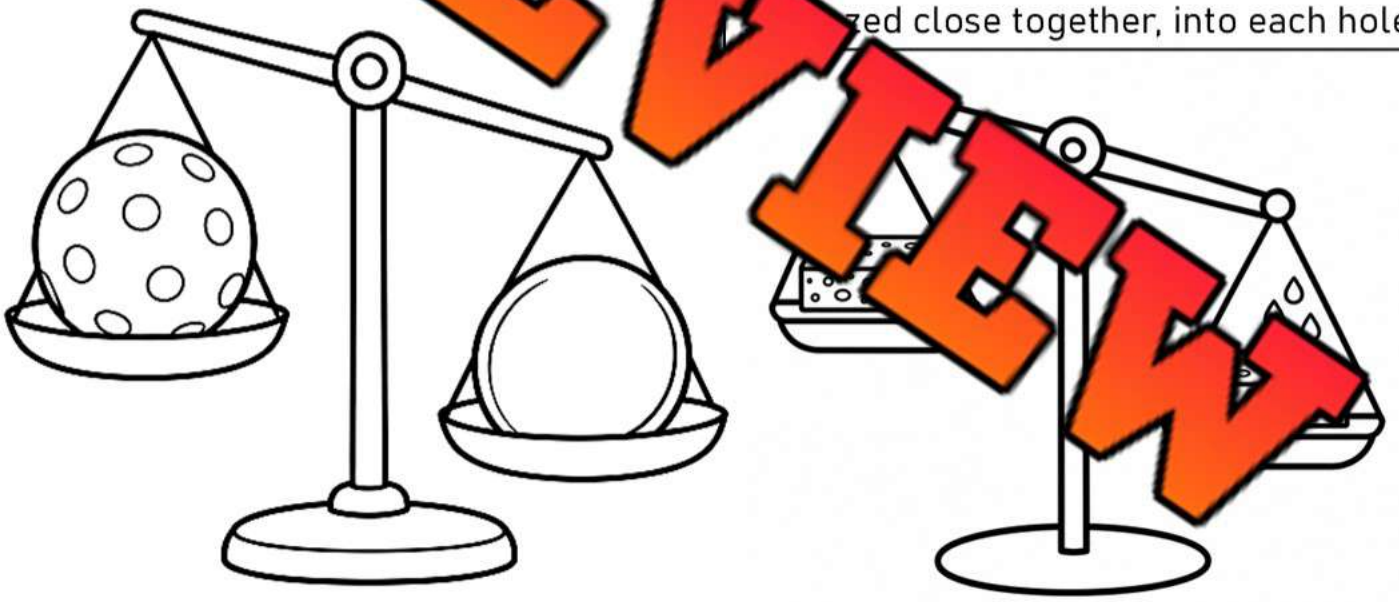
Case 1: Two Balls

A Grade 3 class in Kamloops compares two balls the same size, each about 4 centimetres (4 cm) across. One is foam and one is steel. The foam ball has a mass of only a few grams, while the steel ball has a mass of about 160 grams. The steel ball is **heavy for its size**, which means it holds a lot of mass in a small space.

Case 2: Two Sponges

Next, the class weighs a dry sponge, soaks it in water, and weighs it again. The soaked sponge has much more mass, yet it is about the same size. Before, its holes held air. Now they hold water, which has hundreds of times more mass than air in the same space. More **particles**, the tiny bits that make up all matter, are **packed tightly**, squeezed close together, into each hole.

PREVIEW



What This Teaches Us

Size does not tell us mass. Two objects can fill the same space but hold different amounts of matter. Something heavy for its size has a high **density**, which is how much mass is packed into a space. Steel and a soaked sponge are dense. Foam and a dry sponge are not, because they are mostly air. To compare objects fairly, check mass and size together.

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B.1, B.2

True or False

Is the statement true or false?

1) Soaking a sponge makes it lose mass.	True	False
2) A soaked sponge is heavier than a dry sponge.	True	False
3) The size of an object alone tells its mass.	True	False
4) Air holds more mass than water in the same space.	True	False
5) A dry sponge has air in its holes.	True	False
6) The ste[illegible] has less mass than the foam ball.	True	False

Tip th[illegible]

B[illegible]jects are the same size. Circle the one that makes its side [illegible]nce go down.

[illegible]ll	Steel ball
Soaked [illegible]	Dry sponge
Balloon full of [illegible]	Balloon full of water
Empty juice box	Full juice box
Golf ball	[illegible]-pong ball
Ice cube	[illegible]llow

PREVIEW

Questions

Answer the questions below.

1) Why does the steel ball have more mass than the foam ball, [illegible]y are the same size?

2) Why does a sponge get heavier when it is soaked?

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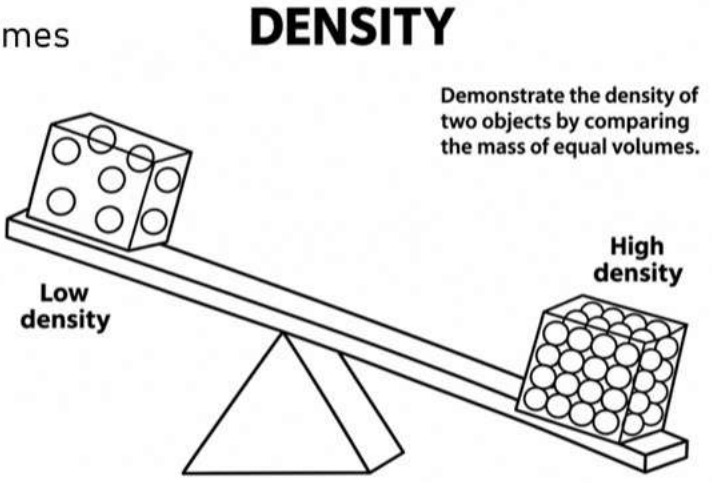
Curriculum Connection
B.1, B.2

Sink or Float

Sink or Float?

When we mix a solid with a liquid, sometimes the solid dissolves so we can't see it. Other times, the solid sinks or floats. For exam[illegible]and will sink in water. This is go[illegible]se if sand floated, our b[illegible]ess!



PREVIEW

Density of Sol[illegible]

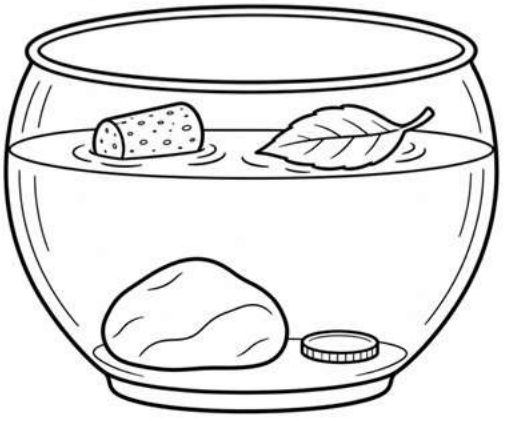
Solids will sink or [illegible]beca[illegible]ot [illegible]density. Remember that solids are made of particles. **Density** is how [illegible]v packed [illegible]rticles are. A high dense solid has very tightly packed particles, like a [illegible]k or [illegible]e heavy compared to their size.

A solid with a low density has l[illegible]y packe[illegible]cles. This makes the solid light compared to its size. Examples of solids [illegible]a low [illegible]are plastic water bottles, paper, leaves, feathers, and sponges.

Density of Water

Water is made of particles as well. So, water has a density too. [illegible]y isn't high or low, it's somewhere in between.

Why Do Solids Sink Or Float?



If a solid has a higher density than water, it will sink. It weighs too much compared to its size, so it cuts right through the water to the bottom.

If a solid has a lower density than water, it will float. When something floats, we say it is **buoyant** (BOY + UNT). A piece of Lego is buoyant. A brick is not buoyant.

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Curriculum Connection
B.1, B.2

True or False

Ice floats in water. Are the statements below true or false?

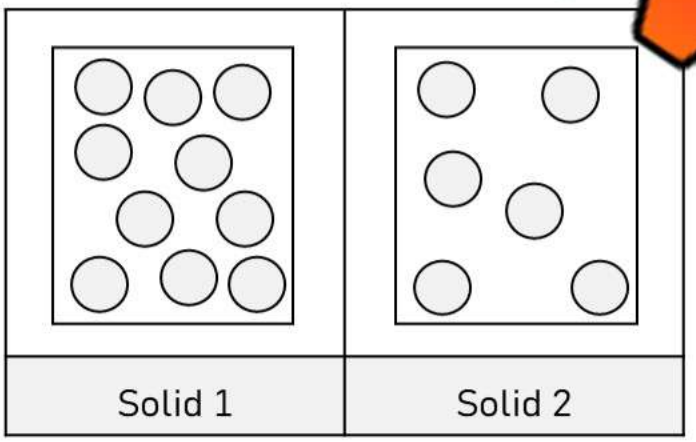
1) Ice is buoyant in water.	True	False
2) Ice has a higher density than water.	True	False
3) Ice is not buoyant in water.	True	False
4) Really big ice cubes will sink in water.	True	False
5) One cup of ice weighs more than one cup of water.	True	False
6) Ice has a lower density than water.	True	False
7) Ice is buoyant because it is light for its size.	True	False
8) Ice particles are packed more loosely than water particles.	True	False

PREVIEW

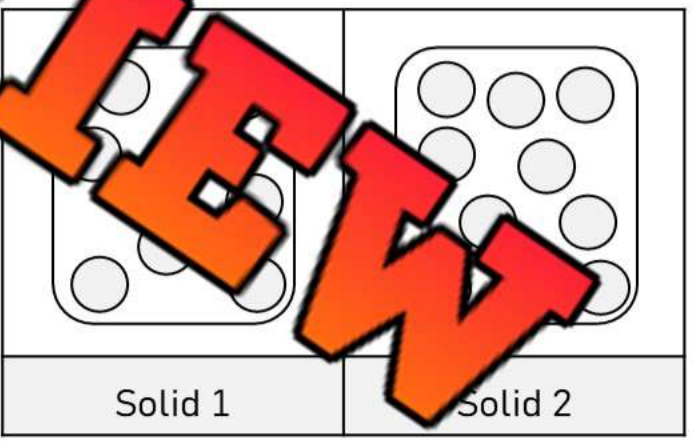
Density

Which of these has the higher density?

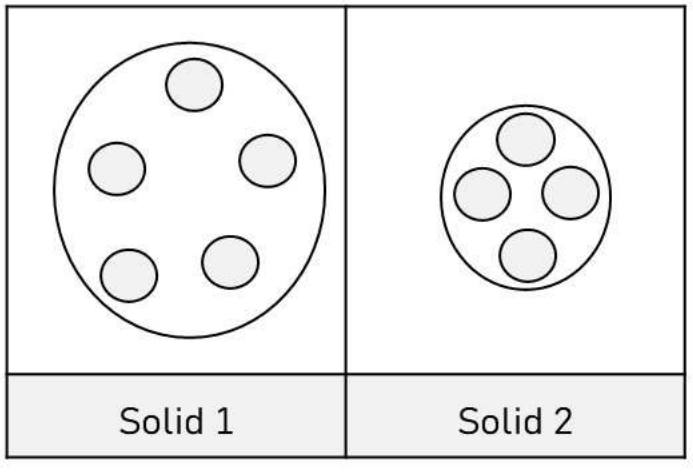
The particles in the solids below are the same size. Circle which solid has a higher density.



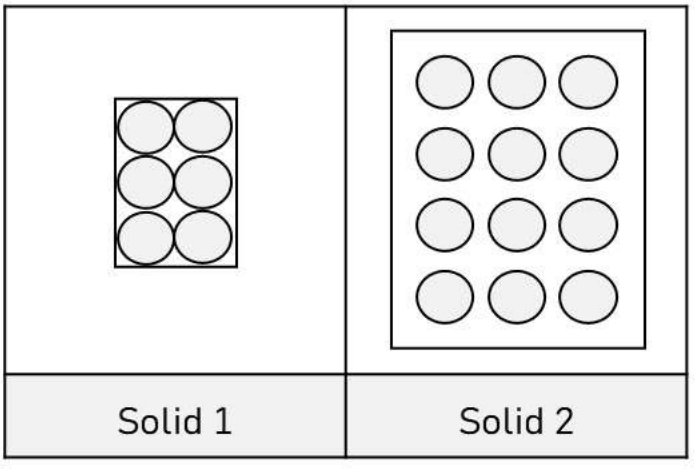
Solid 1 | Solid 2



Solid 1 | Solid 2



Solid 1 | Solid 2



Solid 1 | Solid 2

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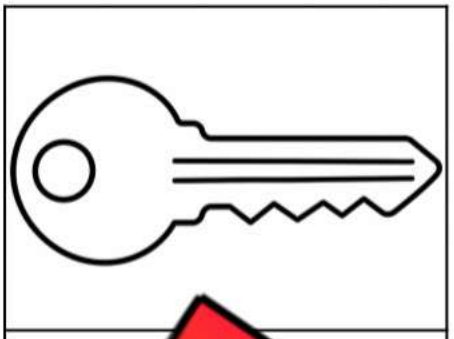
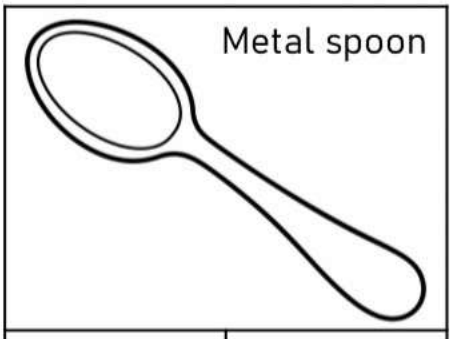
Name: _____ 61

Curriculum Connection
B.1

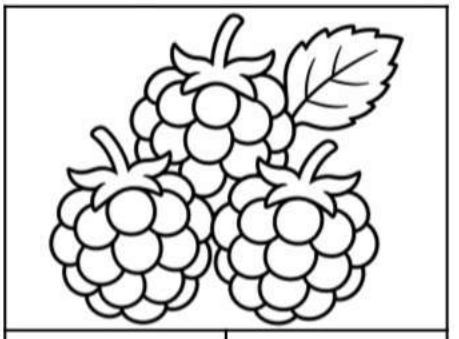
Sink or Float? Will the object sink or float? Circle your answer.



Sink | Float



Sink | Float



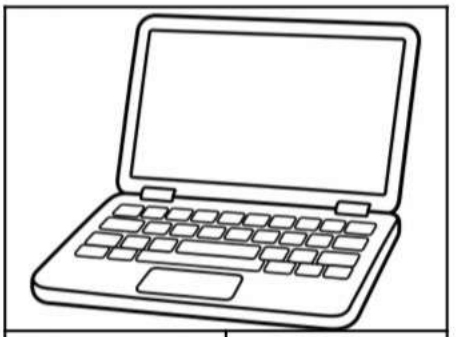
Sink | Float



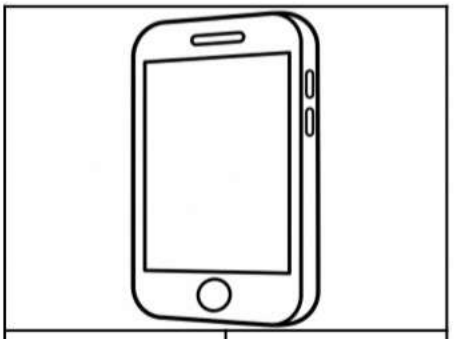
Sink | Float



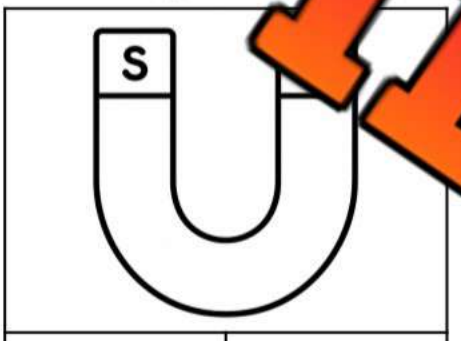
Sin | Flo



Sink | Float



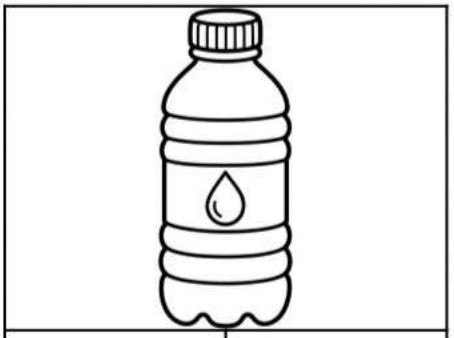
Sink | Float



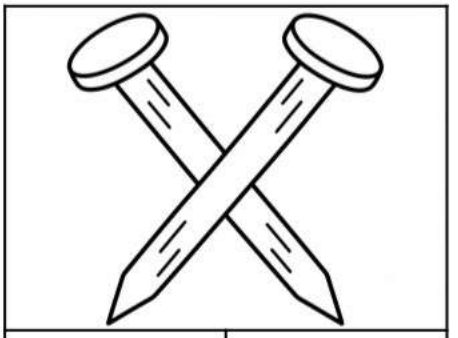
Sink | Float



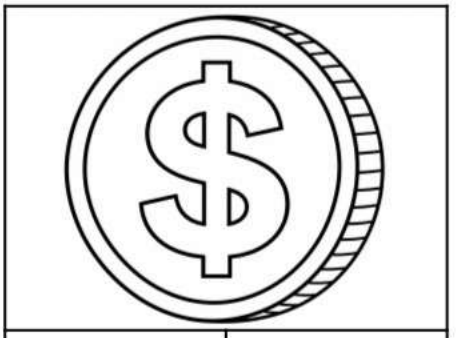
Sink | Float



Sink | Float



Sink | Float



Sink | Float

PREVIEW

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Name: _____ 62

Curriculum Connection
B.1

Experiment - Buoyancy of Water

Materials

What do we need for our experiment?



- ❑ 3 clear cups or glasses that can fit an egg
- ❑ 1-3 eggs – one will work if you take the egg out each ti
- ❑ 8 tabl of salt and sugar
- ❑ W
- ❑ Spoo to stir

PREVIEW

Procedure

H we experiment?

1) Fill the 3 cups with wate
2) Label the cups: saltwater, contro sugar
3) Put 8 tablespoons of salt into the saltwa . Stir lve the salt.
4) Put 8 tablespoons of sugar into the sugar w r t lve it.
5) Put the egg in the control water. Record if the egg an
6) Put the egg in the sugar water. Record if the egg is buoyan
7) Put the egg in the saltwater. Record if the egg is buoyant.

Hypothesis

Will the egg be buoyant in each water? Rank them.

Fluid	Buoyancy	
Water	Yes	No
Sugar Water	Yes	No
Saltwater	Yes	No

Fluid	Rank 1 = most buoyant, 3 = least buoyant
Water	
Sugar Water	
Saltwater	

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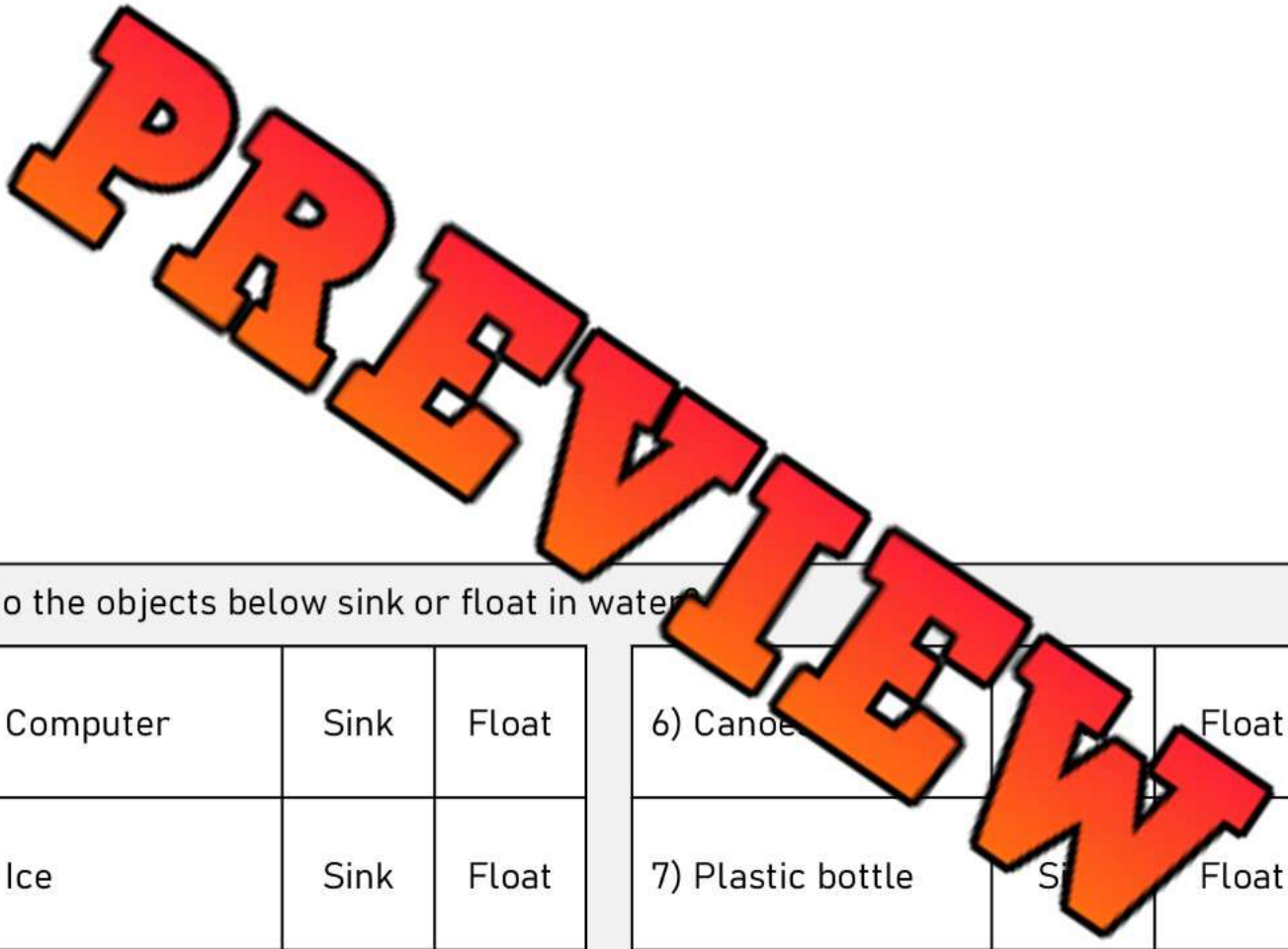
Name: _____ 63

Curriculum Connection
B.1

Research - Floating Objects

Research Learn more about floating objects.

1) Write 10 objects that float below



2) Do the objects below sink or float in water?

1) Computer	Sink	Float
2) Ice	Sink	Float
3) Sand	Sink	Float
4) Leaves	Sink	Float
5) Rocks	Sink	Float

6) Canoe		Float
7) Plastic bottle	Si	Float
8) Basketball	Sink	Float
9) Golf ball	Sink	Float
10) Hockey puck	Sink	Float

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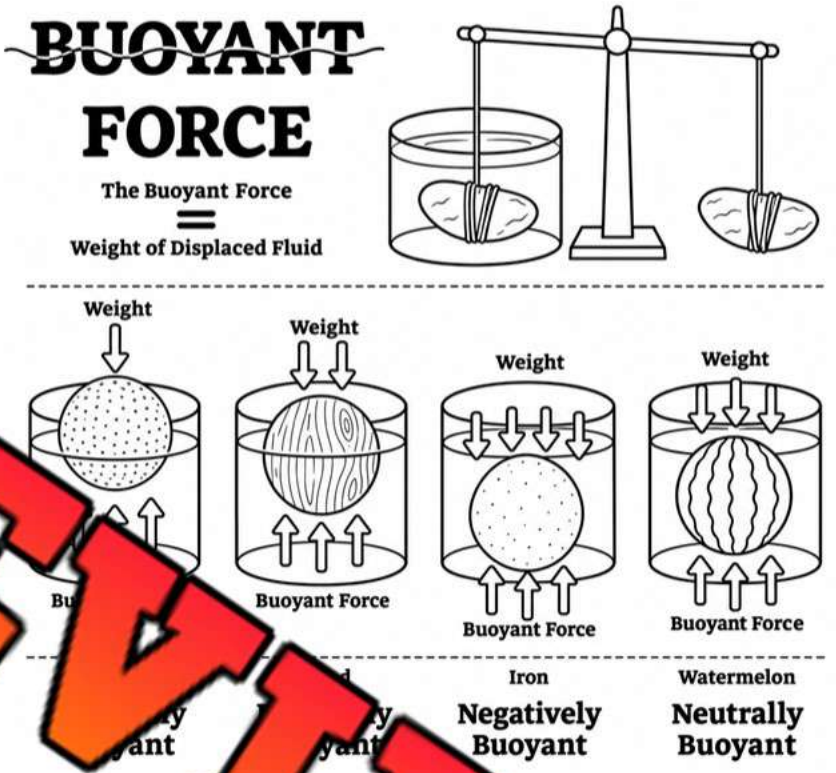
Curriculum Connection
B.1

Scuba Divers

Types of Buoyant Forces

Buoyancy is being able to float in water. A basketball is buoyant in water. A rock is not buoyant in water.



PREVIEW

Positively Buoyant

If an object ca... positively buoyan... e diagram, the cork is pos... buoyant and so is the wood.

Negatively Buoyant

An object is negatively buoyant if it sinks in w... In t... e iron (metal) is negatively buoyant because it sinks.

Neutrally Buoyant

A neutrally buoyant object does not sink or float. Instead, it stays balanced at the same level in a fluid. A watermelon is neutrally buoyant because it stays in the middle of the water.



Scuba Divers

Scuba divers wear gear to make them neutrally buoyant. They change the weight of their scuba suits.

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Name: _____ 65

Curriculum Connection
B.1

Questioning Write two questions you have after reading the text.

1)	
2)	

Questions Answer the questions below.

1) How d[illegible] a diver become neutrally buoyant?

2) What type of things do you think s[illegible]r?

PREVIEW

True or False Is the statement true or false?

1) A basketball is positively buoyant.	True	False
2) A rock is positively buoyant.	True	False
3) A watermelon is neutrally buoyant.	True	False
4) A scuba diver wants to be negatively buoyant.	True	False
5) A cork is positively buoyant.	True	False
6) A neutrally buoyant object stays at the same water level.	True	False

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Curriculum Connection
B.1

Colouring Page - Scuba Diving

Colour Colour the scuba diver below.



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Curriculum Connection
B.1

Direction Code the scuba diver to pick up the treasure. Avoid the seaweed! Draw arrows showing the diver's first move, second move...



1	2	3	4	5	6	7	8	9	10

11	12	13	14	15	16	17	18	19

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Name: _____ 69

Curriculum Connection
B.1

Experiment - Buoyancy in Different Fluids

Materials

What do we need for our experiment?



- ❑ 3 cups or beakers
- ❑ 3 different fluids (water, corn or maple syrup, molasses, oil)
- ❑ 5 different objects with differing densities (stone, paper clip, cork, potato chip, ping pong ball, tangerine)

Procedure

we complete the experiment?

1) Fill each cup with the fluid
2) Drop each object into each fluid and record whether it was buoyant or not.
3) Answer the questions on the results page.

Hypothesis

Which objects will be buoyant in the fluids we are using?

	Fluid 1	Fluid 2	Fluid 3
Object 1			
Object 2			
Object 3			
Object 4			
Object5			

PREVIEW

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Curriculum Connection
B.1

Observations

Fill in the table below based on your observations

	Fluid 1	Fluid 2	Fluid 3
Object 1			
Object 2			
Object 3			
Object 4			
Object 5			

PREVIEW

Results

Answer the questions below.

1) Was your hypothesis correct? Did anything surprise you? Explain.

2) What would happen if you poured each of these liquids into one jar? Explain.

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Name: _____ 71

Curriculum Connection
B.1, B.2

Case Study: Cedar Canoes of British Columbia

Cedar Carvers of the Coast



For thousands of years, nations along the BC coast have carved canoes from Western red cedar. Haida carvers on Haida Gwaii and Nuu-chah-nulth carvers near Tofino still do th[illegible]y. Some Haida canoes are more than 15 metr[illegible]rs choose cedar because of its **prop**[illegible]erial looks and acts.

PREVIEW

Why Cedar Work[illegible]

- **Light for its size** — [illegible]k of c[illegible]s about one third the mass of a same-sized block of water, [illegible]oat[illegible]
- **Grain** — the lines the wood fi[illegible]ake; in [illegible]they run straight along the trunk, so carvers can follow them smo[illegible]
- **Rot-resistant** — natural chemicals in [illegible]sto[illegible]t cause rot, so it lasts outdoors in the rain.

Carving and Shaping



A carver hollows out a log and leaves the walls thin. In the traditional method, hot rocks dropped into water make steam that softens the wood, and wooden sticks push the sides wider. Near Tofino, on Tla-o-qui-aht territory, carver Joe Martin chooses each tree carefully and cuts it in fall or winter to disturb less wildlife. Cedar and hot water are both matter: they have mass, take up space and are built from atoms too small to see.

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Name: _____ 72

Curriculum Connection
B.1, B.2

Two Choices

Circle the best answer.

1) What lets carvers cut cedar smoothly?	Straight grain	Thick bark
2) What makes wood rot?	Sunlight	Fungi
3) What stops cedar from rotting?	Natural chemicals	Paint
4) What softens the wood for shaping?	Ice	Steam
5) When do[illegible]s the carver cut the tree?	Fall or winter	Summer
6) What p[illegible]e canoe sides wider?	Ropes	Wooden sticks

Quest[illegible]

Answ[illegible]estions below using evidence from the text.

1) Name two p[illegible]r[illegible] of ce[illegible] tell why each helps a canoe.

2) Why would a wood that is heavy for its size [illegible]p[illegible]

PREVIEW

Word Scramble

Unscramble the words from the word bank.

Word Bank

Cedar	Water	Floats	Grain	Property
Trunk	Haida	Fibres	Carver	Canoe

PORPYTRE		RNAGI	
ERDCA		AENCO	
ATSFLO		VERCAR	

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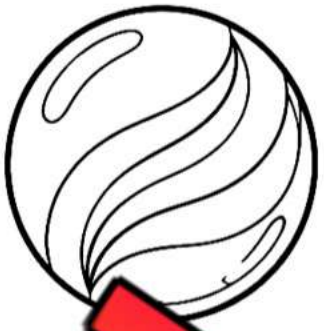
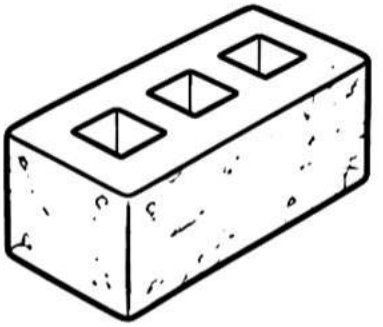
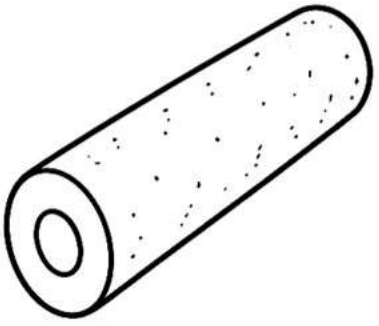
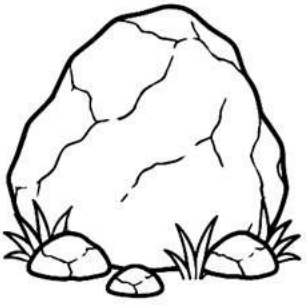
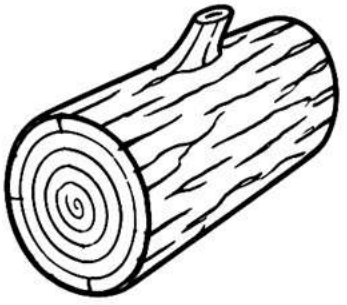
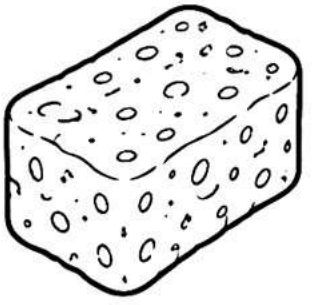
Name: _____ 73

Curriculum Connection
B.1, B.2

Colour Colour the things that are light for their size.

 Gla ble	 Feather	 Brick
 Cork	 S nchor	 Gold ring
 Pool noodle	 Metal key	Foam ball
 Big boulder	 Cedar log	 Dry sponge

PREVIEW

Curriculum Connection
B.1, B.2

Exit Cards

Cut Out Cut out the exit cards below and have students complete them at the end of class.

Name: _____ Mark

Check every true statement about cedar and matter.

	Cedar is made of atoms.
	Cedar is light for its size.
	Cedar sinks in water.
	Cedar's grain runs straight.
	Cedar rots fast in the rain.
	Steam softens wood for shaping.
	Hot water takes up no space.
	You can see cedar's atoms.

Name: _____ Mark

Check every true statement about cedar and matter.

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	Steam softens wood for shaping.
	Hot water takes up no space.
	You can see cedar's atoms.

PREVIEW

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Name: _____ 75

Curriculum Connection
B.1

Activity - Making a Floating Boat

Introduction — What are we making?

Can you make a tinfoil boat that floats and can hold weights inside?

Materials — What do we need for our experiment?

- Alumi[illegible]ast 30 cm long per boat
- Sciss[illegible]- opti[illegible]
- Tape - optiona[illegible]
- Weight – pieces of cla[illegible]s marbl[illegible]



PREVIEW

Method — How do we complete th[illegible]imen[illegible]

1) Design your boat by deciding what shape [illegible]be.
   a) Will it have a flat or pointed bottom?
   b) Will it be long and narrow like a canoe or
   c) Will it be more square?
2) Fold the tinfoil several times until you have a thicker material.
3) Fold up the outsides of your boat's walls.
4) Make the walls high enough so they do not let water in.
5) Fill a bowl with water to test your boat in.
6) See if your boat floats on its own. Then add weights. How many weights can your boat hold?



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Name: _____ 76

Curriculum Connection
B.1

Plan Answer the questions below about your plan.

1)) Will your boat have a flat bottom or a pointed bottom?

2) Will your boat be long and narrow or more of a square shape?

3) Draw a [illegible] for your boat below.

PREVIEW

Results Answer the questions below.

1) Did your boat float on its own?

2) How many weights did your boat hold?

3) What could you do better if you make another boat?

_____

_____

_____

Curriculum Connection
B.1

Solids that Absorb or Repel Water

Solids that Absorb or Repel Water

When a solid gets wet, it will either absorb or repel water. Some solid materials repel water well and others absorb water well. **Repel** means that water does not get into the solid very well. **Absorb** means water gets into the material.

Solids Th b Water

In life s d solids that will suck in water and hold it. For example, if we spil lk, we id that will absorb the milk and pick up the milk. Below ar xampl lids that absorb liquids.

- Sponge
- Napkin
- Paper towel
- Face cloth
- Sock
- Cotton ball



PREVIEW

Solids that Repel Water

There are also times when we need solids that will repel water. For example, an umbrella repels the rain that falls on it. If an umbrella absorbed water, it would get heavy and might start dripping on you. Below are some examples of solids that repel water.

- Raingear – raincoat or rubber boots
- Steel or metal
- Wax paper
- Styrofoam
- Plastics



Name: _____ 78

Curriculum Connection
B.1

True or False

Is the statement true or false?

1) Repel means to let water in.	True	False
2) Absorb means to let water in.	True	False
3) Rocks absorb water.	True	False
4) Rubber boots repel water.	True	False
5) A sponge absorbs water.	True	False

Absorb or Repel

Write A if the solid absorbs water. Write R if it repels water.

1) A Sponge		5) A Plastic Cup	
2) A Raincoat		6) A Cotton Ball	
3) A Paper Towel		7) A Metal Spoon	
4) A Sock		8) Rubber Boots	

The Right Solid for the Job

Circle the best solid for each job.

1) You spill milk on the table.	Paper Towel	Plastic Bag
2) You walk to school in the rain.	Cotton Shirt	Raincoat
3) Your face is wet after washing.	Face Cloth	Towel
4) You want to keep a sandwich dry.	Wax Paper	Napkin
5) You need to jump in puddles.	Rubber Boots	Socks
6) Juice spills on the kitchen floor.	Sponge	Steel Tray

Making Connections

What does this reading remind you of in your life?

_____

_____

_____

PREVIEW

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Name: _____ 79

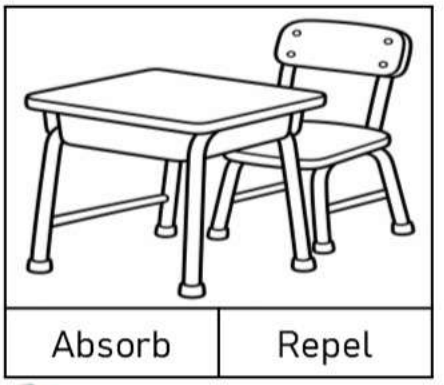
Curriculum Connection
B.1

Absorb or Repel?

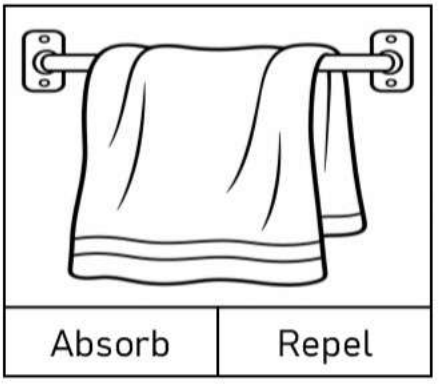
Absorb or Repel?	Will the object absorb or repel water? Circle your answer.



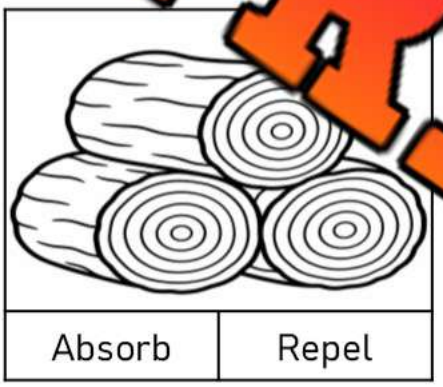
Absorb | Repel



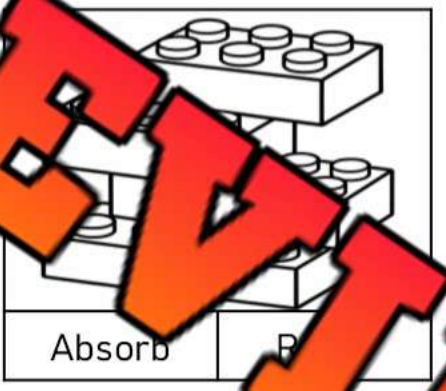
Absorb | Repel



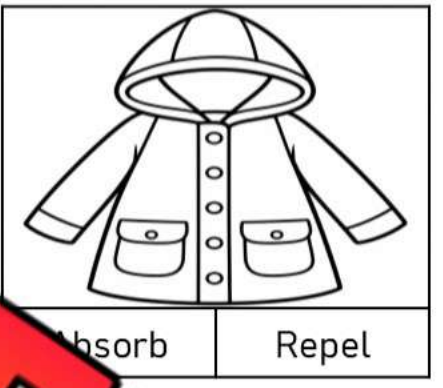
Absorb | Repel



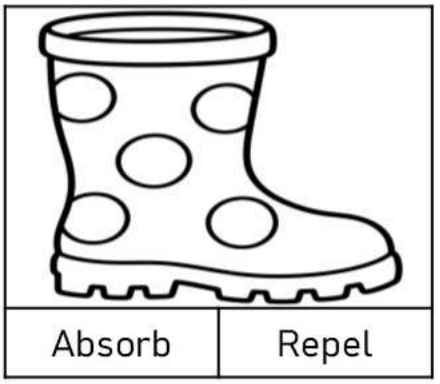
Absorb | Repel



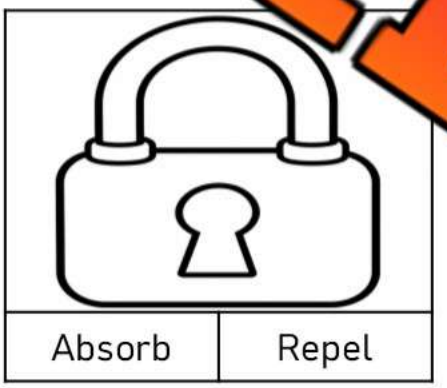
Absorb | Repel



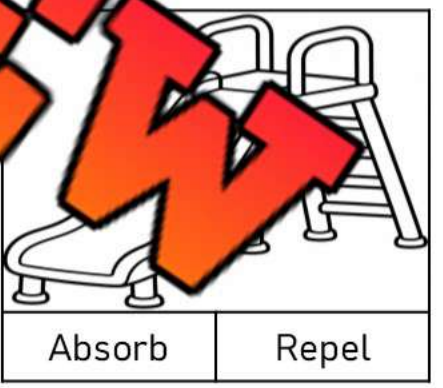
Absorb | Repel



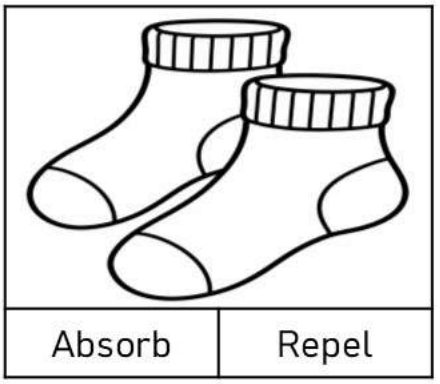
Absorb | Repel



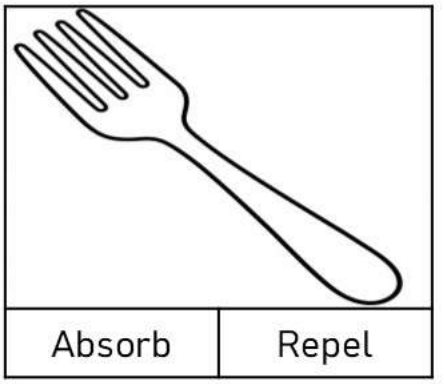
Absorb | Repel



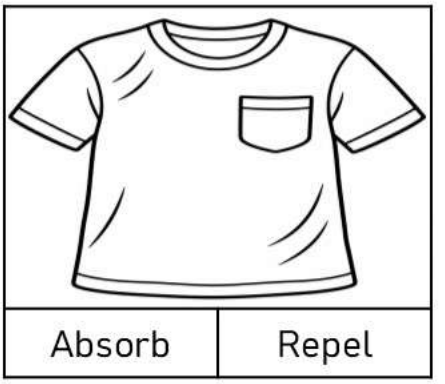
Absorb | Repel



Absorb | Repel



Absorb | Repel



Absorb | Repel

PREVIEW

Name: _____ 80

Curriculum Connection
B.1

Experiment - Absorb or Repel

Research Question Which solids absorb or repel water?

Which materials will absorb water, and which materials will repel it? Today, we will test the materials below.

Hypothesis Will the material repel or absorb water?

Write a[illegible]nder the material.

Ston[illegible]	[illegible]	Sock	Hand Towel	Glass or Plastic Cup	Cardboard

PREVIEW

Materials What do we need for o[illegible]

1) Spray bottle filled with water
2) Materials to test
    1) Stone
    2) Rubber band
    3) Sock
    4) Hand towel
    5) Plastic or glass cup
    6) Cardboard



Method How do we complete the experiment?

1) Students should predict whether each solid material will repel or absorb water.
2) Working in groups or as a whole class demonstration, spray each material.
3) Notice after you spray if the water soaks into the material or if it stays on the outside.
4) Write down whether the material absorbed or repelled the water.

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Name: _____ 81

Curriculum Connection
B.1

Observations

Did the material absorb or repel water?

Write absorb or repel under the material.

Stone	Rubber Band	Sock	Hand Towel	Glass or Plastic Cup	Cardboard

Results

Answer the questions below.

What surprised you about the results?

What material is rain gear made of?

Why do we need rain gear that repels water?

Why do we need socks that absorb water?

PREVIEW

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Name: _____ 85

Curriculum Connection
B.1, B.2

All About Gases

All About Gases

One form of matter than we cannot see is a gas. The air we breathe is a mixture of gases, mostly oxygen and nitrogen. Even though we can't see a gas, we know it is there. We might smell a gas like vinegar when we open the bottle. We might even feel it, like when we feel wind, which is moving air.

Examples of gases are steam also called water vapor, carbon dioxide, helium and oxygen.



How Gases Act

- Gases flow faster than liquids
- Gas particles are far apart
- Gases do not hold their shape

PREVIEW

Yes/No Circle the best answer.

1) Can we see most gases?	Yes	No
2) Can gases hold their shape?	Yes	No
3) Do gases flow?	Yes	No
4) Do gases flow faster than liquids?	Yes	No
5) Is air a gas?	Yes	No

Draw Draw examples of 2 different gases.

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Name: _____ 87

Curriculum Connection
B.1

Does Air Have Any Weight

Research Question

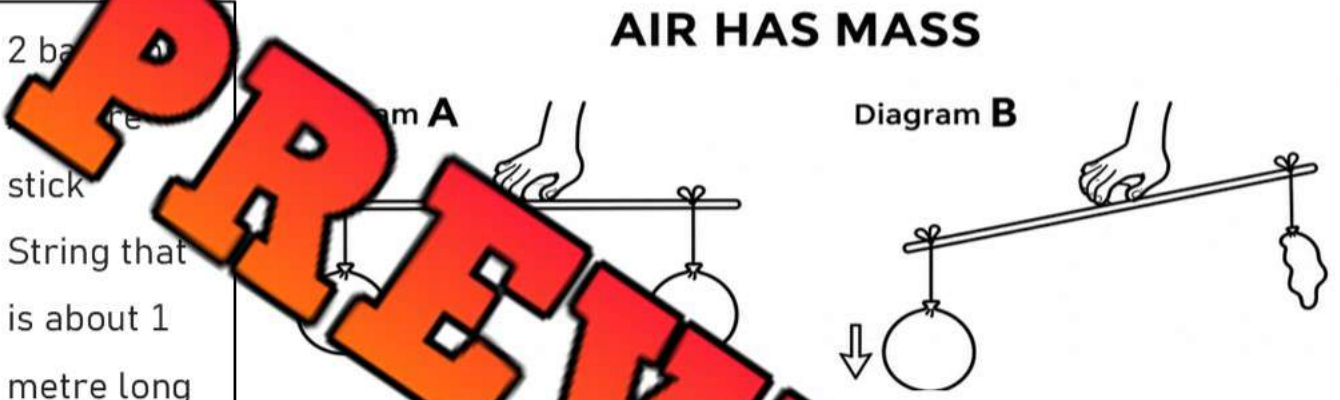
What are we testing?

Does air have any weight?

Materials

What do we need for our experiment?

- 2 ba
- re
  stick
- String that is about 1 metre long



PREVIEW

Procedure

How do we do the experim

1) Blow up the 2 balloons to the same size.
2) Cut two 15-centimetre-long pieces of string
3) Attach a balloon to opposite ends of the metre stick using the 15 string pieces.
4) Tie the left-over string around the centre point of the metre stick.
5) Hold the string up and observe the balloons.
6) Make a hole in one of the balloons letting the air out.
7) Observe what happens.

Name: _____ 88

Curriculum Connection
B.1

Hypothesis

What do you think will happen?

Results

Answer the questions below.

1) Which balloon weighs more?



2) How do you know one balloon is heavier than the other?

3) Draw a diagram of the experiment. Label the popped balloon and the blown-up balloon.

PREVIEW

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Curriculum Connection
B.1

All About Air

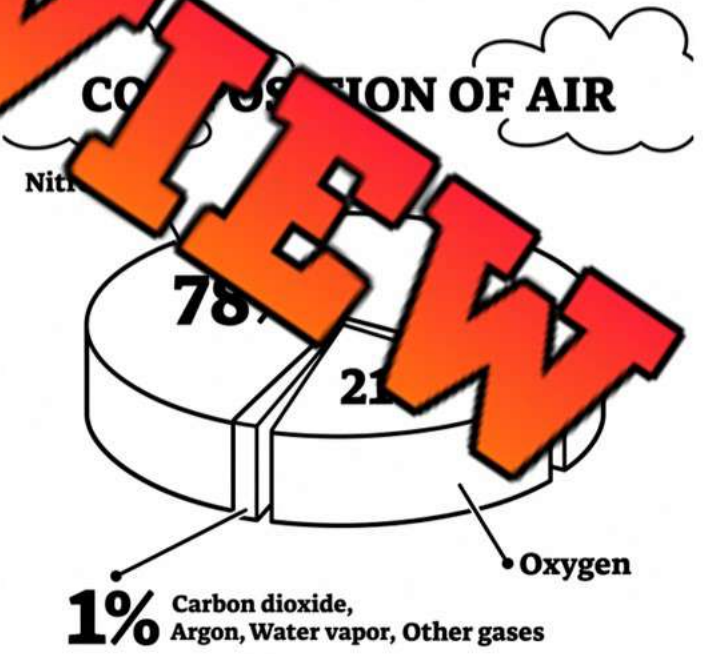
All About Air

Everything around you is matter. The air you breathe is matter. The juice you drink is matter. The chair and desk in the classroom are both matter. They are all different kinds of matter. Matter can be liquid, solid or gas.

Air is matter in the form of a gas. We cannot see air, but it is all around us. Air covers the earth in a layer that is several kilometres deep. This layer is called the earth's atmosphere. If you go to outer space, you leave the atmosphere and won't have air to breathe.

Air is made of several different kinds of gases. Air is made of:

- Nitrogen → 78 percent
- Oxygen → 21 percent
- Carbon Dioxide
- Water Vapour
- Argon
- Rare gases



Properties of Air

- We cannot feel air unless it is moving, like on a windy day
- We cannot see clean air
- Air has no colour, unless it is dirty
- We cannot smell air unless it is polluted. Clean air has no smell
- Air is a gas and a fluid. We know this because planes can fly through the air!

PREVIEW

Name: _____ 90

Curriculum Connection
B.1

True or False

Is the statement true or false?

1) Air is matter.	True	False
2) Our air is made mostly of oxygen.	True	False
3) Our bodies are matter.	True	False
4) We cannot see or smell clean air.	True	False
5) Air is a[illegible]	True	False

Searc[illegible]

[illegible] the answers to the questions below.

1) What are th[illegible]ates o[illegible]r? _____, _____, _____

2) Name the two mai[illegible]r _____, _____

3) Can we see clean air? _____

4) What kind of air can we see? _____

5) What layer on earth has air in it? _____

Results

Answer the questions below.

1) What is the atmosphere?

_____

_____

2) Which gas makes up most of the air?

3) How can you tell if air is dirty or polluted?

_____

_____

PREVIEW

Name: _____ 91

Curriculum Connection
B.1

Blog Post: Is Air Matter?

5 Ways to Show Air Is Matter

Date: October 27, 2026, **Author**: Ms. Nadia Reyes. 4-minute read

Is air really there? You cannot see it, but air is a **gas**, a kind of matter with no shape of its own that spreads out to fill its container. Matter is anything that has mass and **takes up s**. Try these five tests to prove that air is matter.

1) **Blow a balloon:** A **balloon** is a stretchy rubber bag. When you **inflate** it, h air, it stretches bigger. The air inside must make room.



2) **Push a Cup** ater: y paper towel into a cup and press it upsi a ater. The towel stays dry because the cup is r, nnot take that space.
3) **Feel the Wind Push:** Wind is air t ving shes sailboats along English Bay and bends tree branches. Mov g air ca sh h cause air has mass, just like other matter.
4) **Weigh the Air:** Pump extra air into a flat socce set it alance. It has a little more mass than before. A litre of air has ass.
5) **Blow Bubbles With a Straw:** Blow through a straw into a gl ubbles rise up. Each bubble is air pushing water out of its way, so air ta p space.

PREVIEW

Comments



Nina - October 27, 2026

I tried the cup test at home and my paper towel stayed dry!

Like Reply 1d ago



Owen - October 28, 2026

Cool, Nina! Did you tilt the cup? I bet bubbles came out.

Like Reply 1hr ago

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Curriculum Connection
B.1

Questions Answer the questions below using evidence from the text.

1) What happens to a balloon when you inflate it? Explain why.

2) Why is [illegible]alled a gas? Use the word matter in your answer.

Draw Draw the [illegible] bubbles and water.

Finish the Sentence Complete each sentence below.

1) The paper towel stays dry in the cup because...

2) If a cup is already full of air, then...

PREVIEW

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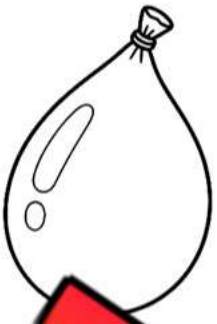
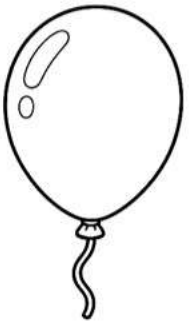
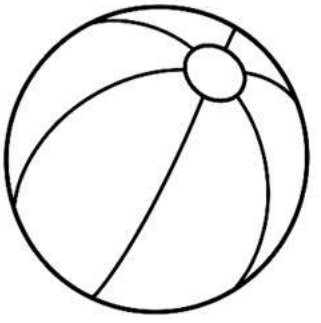
Curriculum Connection
B.1

Colour Colour the things that are filled with air.

 Wat…oon	 Glass Of Juice	 Soap Bubble
 Bowl Of Soup	 …ire	 Sandbag
 Inflated Balloon	 Soccer Ball	 Bucket Of Sand
 Air Mattress	 Jar Of Marbles	 Beach Ball

PREVIEW

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Name: _____ 95

Curriculum Connection
B.1

Is Air Everywhere?

Research Question What are we testing?

How do we know that air is all around us?

Materials What do we need for our experiment?

- A l
- A empt ttle with a narrow neck
- Water



Bottle straight in

Procedure How do we do t exp

1) Fill the bowl with water.
2) Observe the bottle- Is there anything in it?
3) Turn the bottle upside down and push the bottle straight down into the water.
4) Observe what happens - Does any water enter the bottle?
5) Tilt the bottle slightly while it is under water.
6) Observe what happens – Do you notice any bubbles or water entering the bottle?



Tilting the Bottle

PREVIEW

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Curriculum Connection
B.1

Hypothesis — What do you think will happen?

1) Will water go into the bottle when you push it straight down?	
A) Yes	B) No
2) Will bubbles come out when you tilt the bottle?	
A) Yes	B) No

Results — What happened?

1) Did th[illegible] the bottle when the bottle went in straight down?	
[illegible]	B) No
2) Did the wat[illegible] bot[illegible] when you tilted the bottle underwater?	
[illegible]	B) No
3) Did you see air bub[illegible] ou[illegible] e bottle?	
A) Yes	B) No
4) How do we know there is air in the [illegible] when [illegible]e the bubbles?	
_____	
_____	
_____	

PREVIEW

Conclusion — What did we learn? Fill in each blank with a word fr[illegible] box.

water	space	all	air	bubbles

1) The bottle looked empty, but it was full of _____.

2) Air takes up _____, so the water could not get in.

3) When we tilted the bottle, the air came out as _____.

4) When the air left, _____ moved in to take its place.

5) This shows that air is _____ around us, even when we can't see it.

Name: _____ 97

Curriculum Connection
B.1

Experiment - Air Compression

Research Question

Can we compress air?

Can we compress the air inside a reusable water bottle by squeezing the end of the bottle while the lid is on? The same amount of air will still be in the bottle, but the bottle will be smaller. What will happen when we release the bottle's lid?

Hypothesis

Will the air inside get compressed? What will happen with the lid?

Materials

What you

- Empty plastic water bottle (reusable bottle th ist)

Procedure

What to do



1) Make sure the bottle is with air.
2) Tighten the lid so no air can escape ant to make sure the air inside gets compressed, instead of escaping out of the lid.
3) Twist the bottle's larger end on the opposite side of the lid. Twist until the bottle is about half of the size that it was before
4) CAREFULLY loosen the lid. MAKE SURE NO ONE IS NEAR THE BOTTLE'S LID. DO NOT POINT THE BOTTLE AT ANYONE.
5) If nothing happened, try again by blowing air back into the bottle, inflating it again.

PREVIEW

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Curriculum Connection
B.1

Draw two diagrams:

1. The squeezed bottle with the lid on. Label the compressed air.
2. The opened bottle. Label the lid flying, the air direction using arrows

PREVIEW

Results Answer the [illegible]s b[illegible]

1) What is air compression? What do[illegible]ean to [illegible]ess air?

2) Was your hypothesis correct? Was the air compressed inside[illegible]low do you know?

3) Why did the bottle lid go flying through the air? If you squeezed the bottle more, would the lid have flown further?

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Name: _____ 101

Curriculum Connection
B.1, B.2

Experiment - Power of Air Pressure

Research Question Is air pressure strong enough to hold water?

If we fill a cup 1/4 full of water, will a card hold the water in the cup when it is tipped upside down? The air pressure inside of the cup will be less than the air pressure outside of the cup.

Hypothes Will the water spill or will the card hold the water in place?

PREVIEW

Materials What you nee thi

- Water
- Cup
- Card that is large enough to cover the opening o the cup



Procedure What to do



1) Fill the cup one quarter full of water.
2) Put the card over top of the opening of the cup.
3) Walk over to a sink (or do this outside).
4) Tip the cup upside down – Did the card hold the water in the cup or did it spill?
5) If the water spills, try it again using less water.

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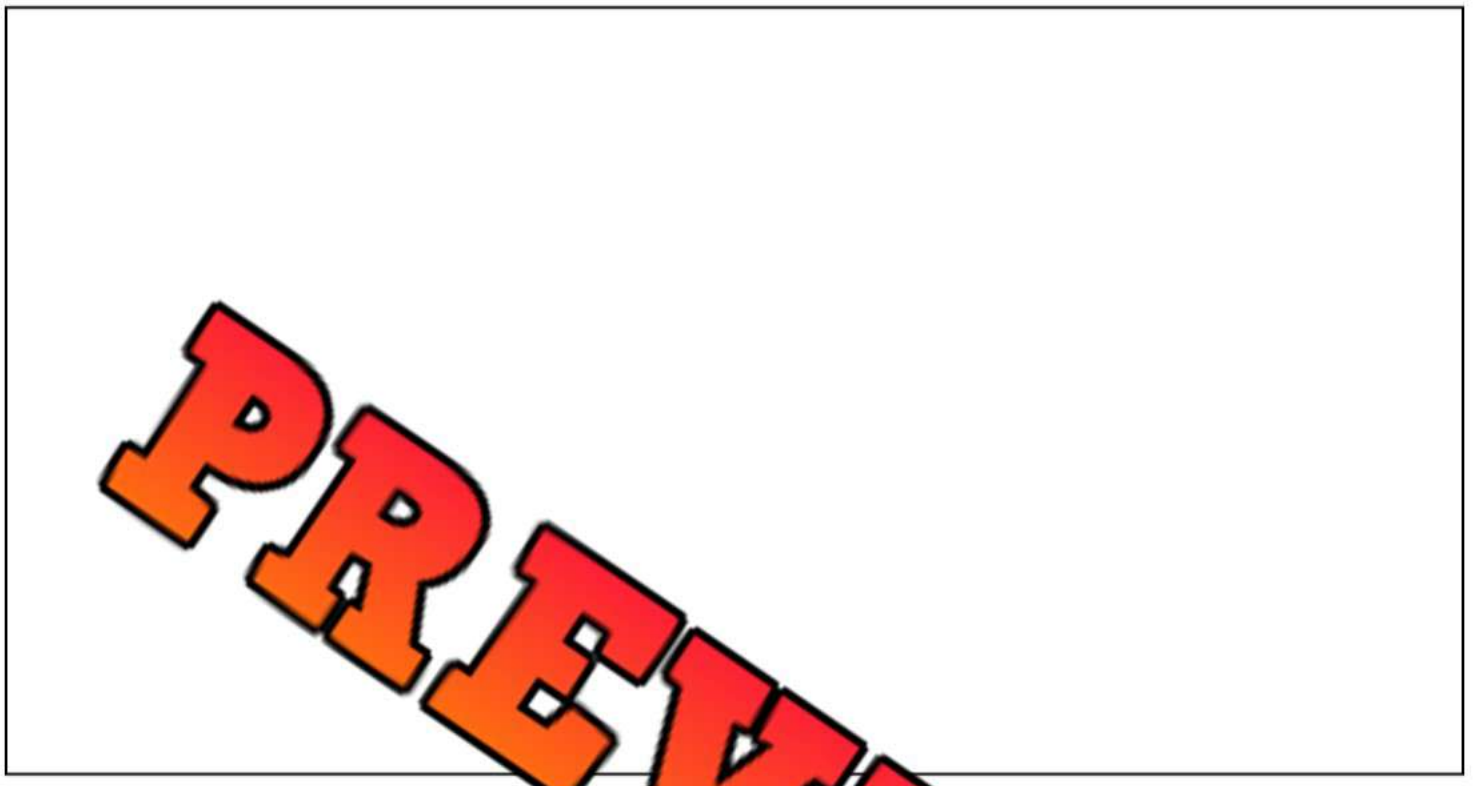
Curriculum Connection
B.1, B.2

Diagram

Draw it. Small arrows = low pressure, large = high



PREVIEW

Results

What happened during the experi

1) Was your hypothesis correct? Did the wate or

2) Why wouldn't the water fall out of the cup?

3) When have you ever seen air pressure in action, like in this experiment?

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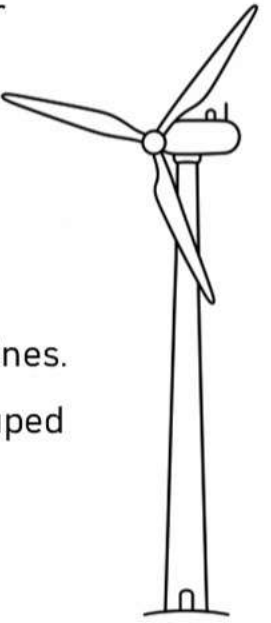
Name: _____ 105

Curriculum Connection
B.1

Wind Power

Windmills

Wind can be used to make power. The first windmills were built over a thousand years ago. Farms often had windmills to power a few farm machines. People in the Netherlands built windmills to pump water off ded fields. Windmills were also used to grind grain.



Wind Tu

Toda ave lar nore efficient windmills called wind turbines. Several wind be on open flat land. Windmills grouped together are calle **ind f** the large wind turbine the wind needs to blow ove etres

Making Energy

Wind is matter because it is made of ut the can do work, so it has energy. Wind can spin a wind turbine to mak ficity electricity to run our computers, televisions, and even our lights.

PREVIEW

Questions Answer the questions below.

1) Is wind matter? What is it made of?

2) Why does wind have energy? What can it do?

3) Draw a windfarm in the box.

Name: _____ 107

Curriculum Connection
B.1

Activity - Making a Pinwheel

Research Question What are we learning more about?

Can you make a pinwheel that moves as the wind blows?



Materials What will you need for the activity?

- ❑ A sq… about 15 cm by 15 cm
- ❑ P… in or thi…
- ❑ Pencil wit…
- ❑ Clay or play do…
- ❑ Scissors

Procedure How will you com… e acti…

1) Fold the square paper from one corner t… opp… …(diagonal)
2) Unfold and then fold the paper from the other t… its o… e corner.
3) Unfold the paper. It should now have two diagonal folds in …
4) Cut the diagonal lines from each corner about 2/3 of the way to… the centre.
5) Bring the edges towards the middle and poke the pin through the centre. Ask an adult for help.
6) Push the pin through the eraser on the top of the pencil.
7) Test your pinwheel. Does it spin?
8) Take your pinwheel outside or put it next to a fan. Does the moving air spin the pinwheel?

PREVIEW

Name: _____ 108

Curriculum Connection
B.1

Observations

What happened with your pinwheel?

1) Did your pinwheel work?

2) Put your pinwheel in a non-windy spot. Count in one minute how many times it spins around.

3) Put your pinwheel in a windy spot. This could be in front of a fan. Count in one minute how many times it spins around.

PREVIEW

Results

Answer the questions now that you have completed the activity.

1) Is your pinwheel matter? Explain why or why not.

2) What is moving your pinwheel – matter or energy? Explain why it is moving.

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Name: _____

Unit Test

Matter

Total	/

Mark	/

1) Which of the following is an example of matter?

a) Daydreaming

b) An Idea for a new computer

c) Talking to someone

d) Your de

2) Which of the following is an example of a liquid?

a) Table

b) Honey

c) Wood

d) Rock

3) Which lowing is an example of a so

a) Ket

b) Honey

c) Melted Butter

d) Shoes

4) Cereal and milk is what type of mixture?

a) Solid – solid

b) Solid – liquid

c) Liquid – liquid

d) None of the above

5) Which state of matter belo kes shape of its container?

a) Liquids

b) Solids

c) Rock

d) All of the above

is a liquid but can also be a olid a

a) W

b)

c) Stea

d) Vapour

7) When snow turns to rain, it is a...

a) Solid staying a solid

b) A liquid turning into a solid

c) A solid turning into a liquid

d) A liquid staying a liquid

8) Which state of m ow?

a) Liquids

b) Solids

c) Gas

d) All of the above

9) A rock sinks in water, so it is

a) Buoyant

b) Not buoyant

c) Floating

d) None of the above

10) Does a towel absorb or repel water?

a) Absorb

b) Repel

PREVIEW

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Fill in the Blanks

Write the missing word on the line.

Mark	/

Word Bank				
Gas	Dissolves	Nitrogen	Natural	Human-Made
Solid	Liquid	Flow	Mixture	Particles

1) Honey is a _____ that flows.

2) Water [illegible]r is water as a _____.

3) Suga[illegible] _____ in water.

4) Wood[illegible] an ex[illegible] _____.

5) A tree is a _____ solid because no one makes trees.

6) A school is a _____ solid.

7) Air is made of oxygen and _____.

8) All matter is made up of _____

9) Cereal and milk make a _____

10) All liquids _____

PREVIEW

Solid or Liquid

Circle whether it is a solid or liquid.

Mark	/

1) School	Solid	Liquid
2) Glue	Solid	Liquid
3) Grain of Sand	Solid	Liquid
4) Oil	Solid	Liquid
5) Yogurt	Solid	Liquid

6) Juice	Solid	Liquid
7) Houses	Solid	Liquid
8) Rocks	Solid	Liquid
9) Milkshake	Solid	Liquid
10) Shampoo	Solid	Liquid

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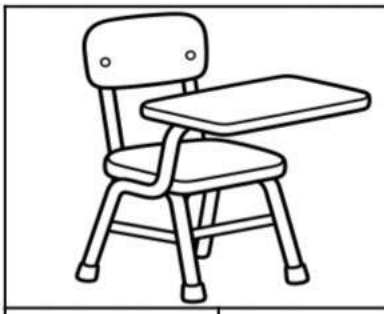
Absorb or Repel?

Will the object absorb or repel water? Circle your answer.

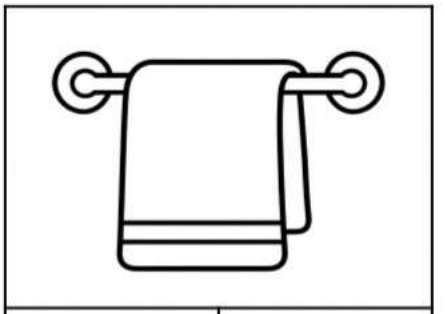
Mark /



Absorb | Repel



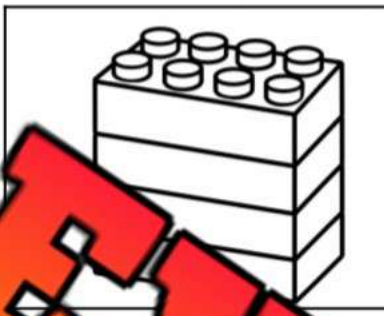
Absorb | Repel



Absorb | Repel



Absorb | Repel



Absorb | Repel



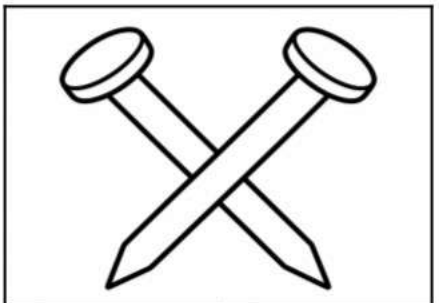
Absorb | Repel

PREVIEW

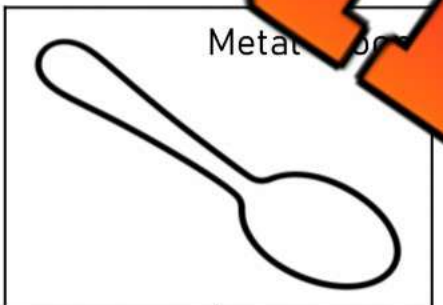
Sink or Float?

Will the object sink or float? Circle your answer.

Mark /



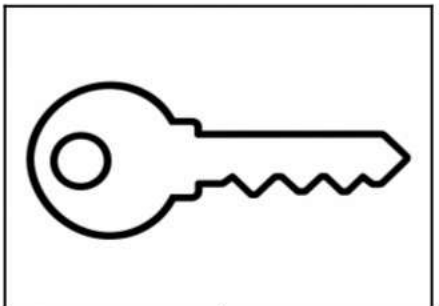
Sink | Float



Sink | Float



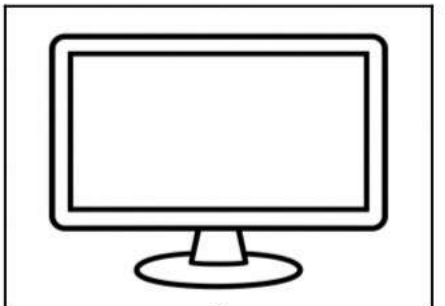
Sink | Float



Sink | Float



Sink | Float



Sink | Float

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