Year 5
Spring 1 Newsletter

English
This half term, our focus books are 'Holes' by Louis Sachar and '50 Adventures in the 50 States' by Kate Siber.

We will be writing persuasive leaflets and letters.

RE
We will be exploring the following questions:
- What would Jesus do?
- How do Christians apply Jesus' teachings to life in the 21st century?

Maths
This half term, our maths topics are:
- Multiplication and Division
- Fractions
- Decimals and Percentages

Geography
The children will focus on learning about deserts. We will learn about what a desert's climate is like, the physical features of a desert and what life is like for people who live there.

PSHE
In PSHE this term, we will be focusing on anti-bullying.

Diary Dates
Robinwood instalment: 25.01.24
Music day: 08.02.24

Art
This term the children will be learning about Alberto Giacometti and making sculptures of figures in his unique style.

PE
Our focus sports this term are hockey and dance. Please ensure your child is wearing their PE kit on Wednesdays and Fridays.

Music
This half term, the children will be taught piano by Miss Halton. KS2 singing assemblies will take place every other week, and children are welcome to attend choir on Wednesday lunchtimes.

Science
Our focus this half term is materials. We will be learning about George Washington Carver.

Autumn 1 Homework Mat

Please complete one task per week and upload a photo or video to Class Dojo.

English Task

Write a persuasive leaflet advertising Manchester. What could people see/eat/do when they visit? Add pictures and make it as engaging as possible!

Maths Task

Practise your times tables by creating a fun game and playing it with friends/family. Focus on any you know you struggle with remembering. Feel free to bring your game into school!

Science Task

Ask your parents if there are any materials/objects in the house that you can test and categorise. You could test their absorbency, buoyancy, transparency, strength etc. Video your results and upload to Dojo!

Geography Task

Research a desert and make an informative poster or presentation to teach the rest of the class about it. Upload a video to ClassDojo of you explaining so we can learn about it too!

Art Task

Make a sculpture in the style of Giacometti (very tall, elongated limbs, no defining features) using a material of your choice. This does not need to be of a person, it could be an animal-anything! Bring it in once finished ☺

Multiplication and Division

Short Multiplication

$$2543 \times 7 = 17\,801$$

	2	5	4	3
×				7
1	**7**	**8**	**0**	**1**
1	3	3	2	

Remember to move any regrouped digits into the next column. After the next multiplication, add the regrouped number to the answer.

Long Multiplication

$$2543 \times 67 = 170\,381$$

		2	5	4	3
	×			**6**	7
	1	**7**	**8**	**0**	**1**
		1	3	3	2
1	**5**	**2**	**5**	**8**	**0**
1	3	2	1		
1	**7**	**0**	**3**	**8**	**1**
	1	1			

Before multiplying by the number in the tens column, remember to use zero as a placeholder because the 6 in 67 is 6 tens (60).

Short Division

			3	**8**	
4	1	¹5	³2	

15 ÷ 4 = 3 remainder 3

Remember to regroup any remainders and move them into the next column.

			4	**5**	**5**	**r**	**3**
5	2	2	²7	²8			

28 ÷ 5 = 5 remainder 3

If your calculation has a remainder, remember to record it in the answer using the letter **r**.

Division

$$136 \div 4 = 34$$

			3	**4**
4	1	3	6
−	1	2	0	→ **30 × 4**
		1	6
−		1	6	→ **4 × 4**
			0

Adding and Subtracting Fractions

$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$

$\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$

$\frac{1}{4} + \frac{3}{8} = \frac{2}{8} + \frac{3}{8} = \frac{5}{8}$

$\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$

To add or subtract fractions with denominators that are multiples of the same number, we must change one fraction to have the same denominator.
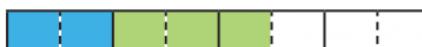
Add Fractions When the Total is Greater Than 1

$\frac{1}{2} + \frac{3}{4} + \frac{5}{8} = \frac{4}{8} + \frac{6}{8} + \frac{5}{8} = \frac{15}{8} = 1\frac{7}{8}$

Add Mixed Numbers

$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1 + \frac{5}{8} = 1\frac{5}{8}$

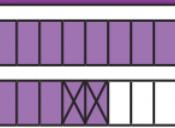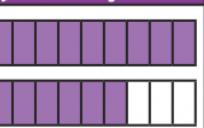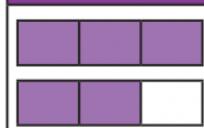$1\frac{1}{4} + \frac{3}{8} = \frac{5}{4} + \frac{3}{8} = \frac{10}{8} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$

Subtract From a Mixed Number

$1\frac{2}{3} - \frac{2}{9} = 1\frac{6}{9} - \frac{2}{9} = 1\frac{4}{9}$

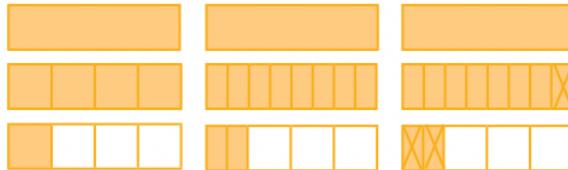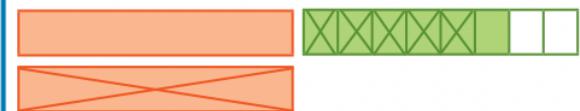| starting number	find the equivalent fraction	subtract

Subtract from a Mixed Number - Breaking the Whole

$2\frac{1}{4} - \frac{3}{8} = 2\frac{2}{8} - \frac{3}{8} = 1\frac{10}{8} - \frac{3}{8} = 1\frac{7}{8}$

Subtract Two Mixed Numbers

$2\frac{3}{4} - 1\frac{5}{8} = 1\frac{1}{8}$

$2 - 1 = 1$

$\frac{3}{4} - \frac{5}{8} = \frac{1}{8}$

Multiply Unit Fractions by an Integer

$\frac{1}{3} \times 5 = \frac{5}{3}$

Multiply Non-Unit Fractions by an Integer

$2 \times \frac{4}{9} = \frac{8}{9}$

Multiply Mixed Numbers by Integers

Convert to an improper fraction and multiply the numerator by the integer.

$2\frac{1}{4} \times 2$ = $\frac{9}{4} \times 2$ = $\frac{18}{4}$ = $4\frac{2}{4}$ = $4\frac{1}{2}$

Use repeated addition.

$2\frac{1}{4} \times 2 = 2\frac{1}{4} + 2\frac{1}{4} = 4\frac{2}{4} = 4\frac{1}{2}$

Decimals

Key Vocabulary

- tenths
- hundredths
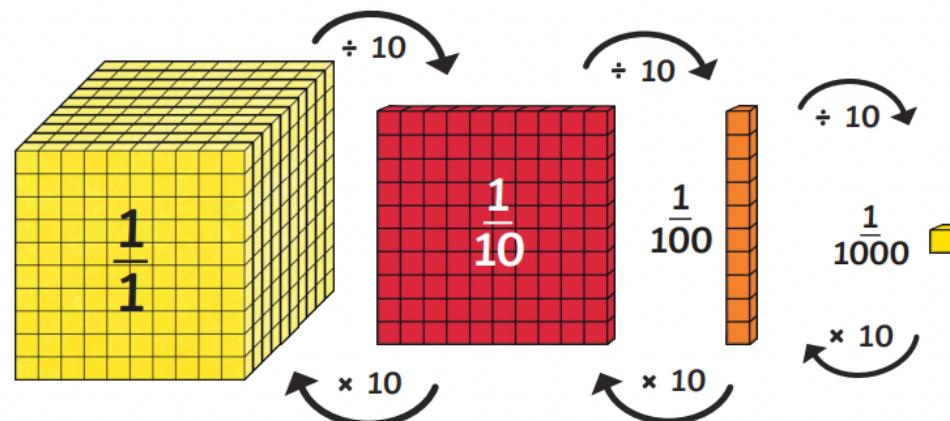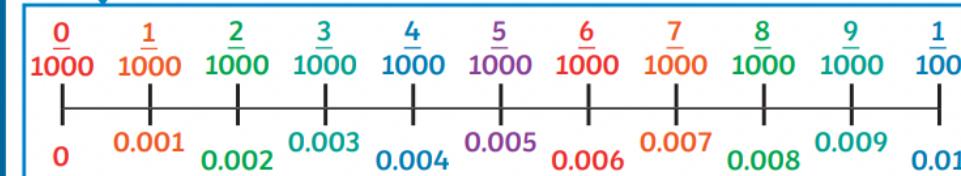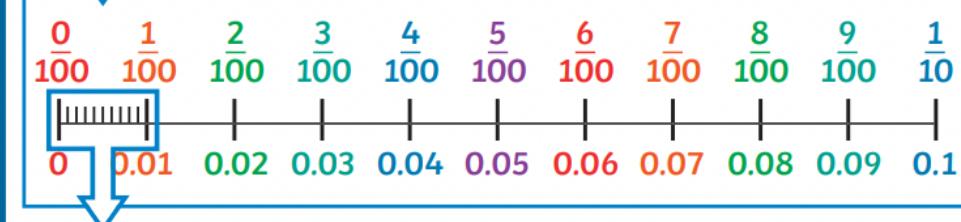- decimal tenths
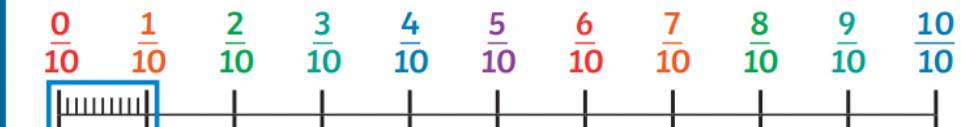- decimal hundredths
- decimal equivalents
- part-whole model
- rounding
- decimal point
- place value

Tenths, Hundredths and Thousandths

| $\frac{0}{10}$ | $\frac{1}{10}$ | $\frac{2}{10}$ | $\frac{3}{10}$ | $\frac{4}{10}$ | $\frac{5}{10}$ | $\frac{6}{10}$ | $\frac{7}{10}$ | $\frac{8}{10}$ | $\frac{9}{10}$ | $\frac{10}{10}$ |

| 0 | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |

| $\frac{0}{100}$ | $\frac{1}{100}$ | $\frac{2}{100}$ | $\frac{3}{100}$ | $\frac{4}{100}$ | $\frac{5}{100}$ | $\frac{6}{100}$ | $\frac{7}{100}$ | $\frac{8}{100}$ | $\frac{9}{100}$ | $\frac{1}{10}$ |

| 0 | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.1 |

| $\frac{0}{1000}$ | $\frac{1}{1000}$ | $\frac{2}{1000}$ | $\frac{3}{1000}$ | $\frac{4}{1000}$ | $\frac{5}{1000}$ | $\frac{6}{1000}$ | $\frac{7}{1000}$ | $\frac{8}{1000}$ | $\frac{9}{1000}$ | $\frac{1}{100}$ |

| 0 | 0.001 | 0.002 | 0.003 | 0.004 | 0.005 | 0.006 | 0.007 | 0.008 | 0.009 | 0.01 |

$\div 10$ $\div 10$ $\div 10$

$\frac{1}{1}$ $\frac{1}{10}$ $\frac{1}{100}$ $\frac{1}{1000}$

$\times 10$ $\times 10$ $\times 10$

Order and Compare Numbers with Three Decimal Places

Ones	Tenths	Hundredths	Thousandths
.	$\frac{1}{10}$ $\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{1000}$
0 .	2	1	3

Ones	Tenths	Hundredths	Thousandths
1 .		$\frac{1}{100}$ $\frac{1}{100}$	$\frac{1}{1000}$ $\frac{1}{1000}$
1 .	0	2	2

Ones	Tenths	Hundredths	Thousandths
1 1 .	$\frac{1}{10}$		$\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{1000}$
2 .	1	0	3

Decimal Numbers as Fractions

$$0.71 = \frac{71}{100} = \frac{7}{10} + \frac{1}{100}$$

$$0.37 = \frac{37}{100} = \frac{3}{10} + \frac{7}{100}$$

Multiplying and Dividing by 10, 100 and 1000

Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
	3 • 8			
3	8			

÷ 10 / × 10

Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
	0 • 3	8		
3	8			

÷ 100 / × 100

Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
	0 • 0	3	8	
3	8			

÷ 1000 / × 1000

Adding and Subtracting Decimals

0.8 + 0.001 = 0.801

1.031 - 0.23 = 0.801

0.4005 + 0.4005 = 0.801

Rounding Decimals

1 ← 1.1 1.2 1.3 1.4 | 1.5 1.6 1.7 1.8 1.9 → 2

If the tenths digit is 1, 2, 3 or 4, we round down to the nearest whole number.

If the tenths digit is 5, 6, 7, 8 or 9, we round up to the nearest whole number.

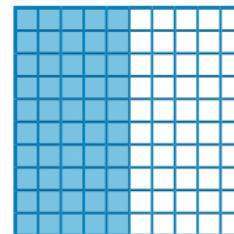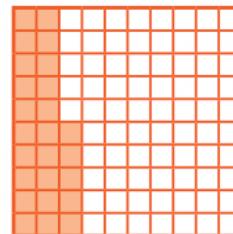1.1 ← 1.11 1.12 1.13 1.14 | 1.15 1.16 1.17 1.18 1.19 → 1.2

If the hundredths digit is 1, 2, 3 or 4, we round down to the nearest tenth.

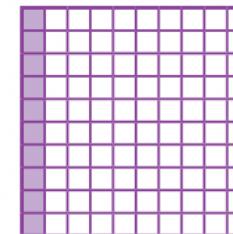If the hundredths digit is 5, 6, 7, 8 or 9, we round up to the nearest tenth.
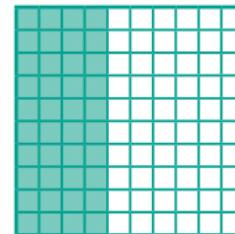
Percentage and Decimal Equivalents

$50\% = \frac{50}{100} = \frac{1}{2} = 0.5$
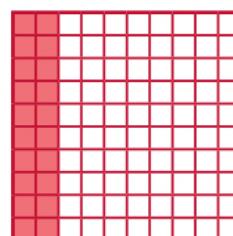
$25\% = \frac{25}{100} = \frac{1}{4} = 0.25$
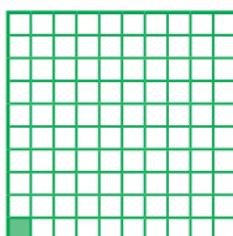
$10\% = \frac{10}{100} = \frac{1}{10} = 0.1$

$40\% = \frac{40}{100} = \frac{2}{5} = 0.4$

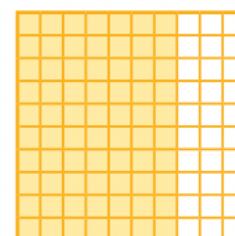$20\% = \frac{20}{100} = \frac{1}{5} = 0.2$

$1\% = \frac{1}{100} = 0.01$

$70\% = \frac{70}{100} = \frac{7}{10} = 0.7$

Crossing the Whole

0.82 + 0.63 = 1.45

2.531 - 0.6 = 1.931

Would you like to live in the desert?

Where are hot desert biomes located?

Tropic of Cancer

Equator

Tropic of Capricorn

savannah | desert | temperate deciduous forest | tropical rainforest | boreal rainforest | tundra
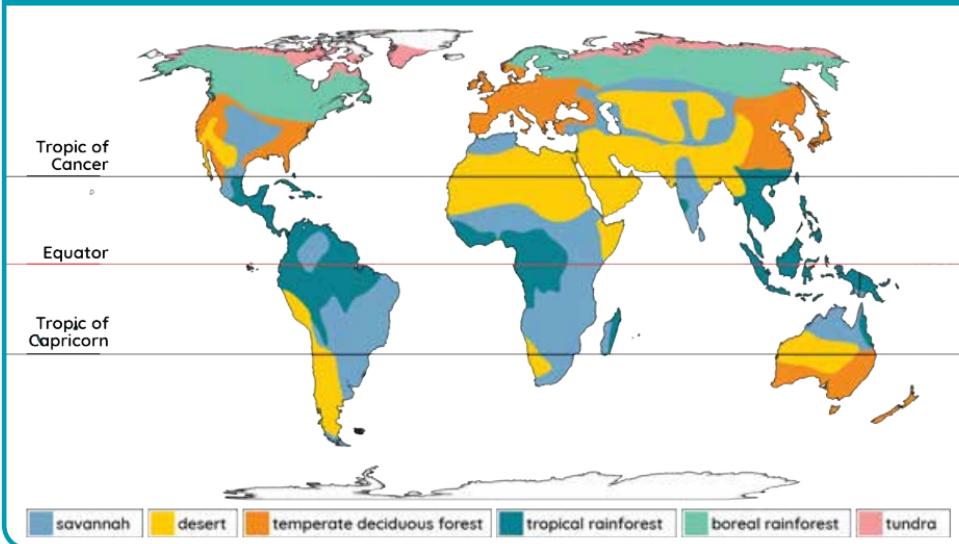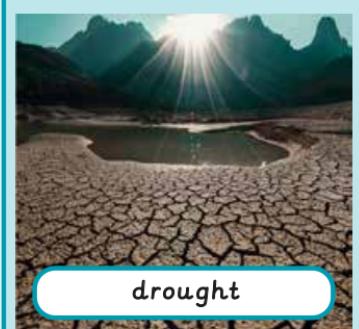
A hot desert biome is hot, dry and arid, although temperatures can drop at night and occasional heavy downpours can occur.

How do people use the Mojave Desert?

- Protecting areas of natural beauty in national parks.
- Recreational purposes like hiking or quad biking.
- Ranching and farming.
- Military bases and training.
- Mining precious resources.
- Generating renewable energy.
- Living in settlements.
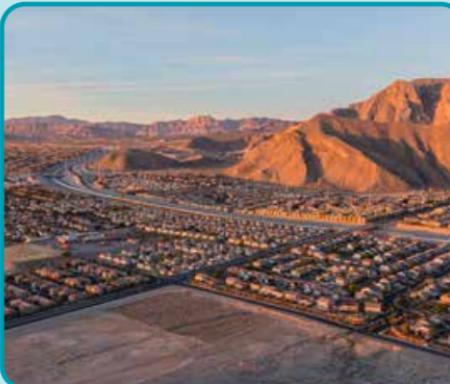
Threats and dangers:

drought

desertification

flash floods

arid	Too little rain to support lots of vegetation.
barren	Land that cannot grow vegetation.
biome	An area of the world with a similar climate and landscape, where similar plants and animals live.
climate	Long-term weather conditions in a specific region.
desert	Any stretch of land with little to no rainfall and extremely sparse vegetation and wildlife.
mining	Digging underground for precious metals and stones.
rainfall	The amount of rain falling in a place over a particular time.
ranching	Keeping animals on a large farm, particularly in the Americas.
renewable energy	Energy generated from a continuous source, such as wind or water.

Physical features in the Mojave Desert:
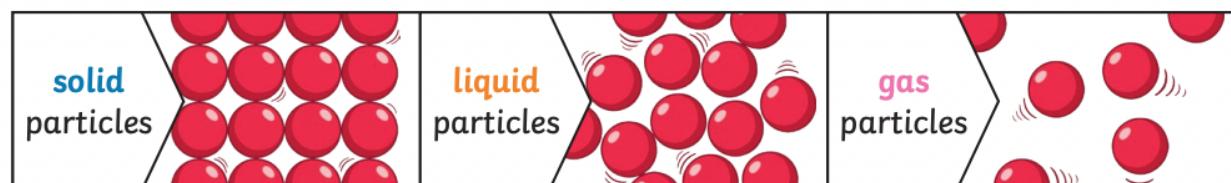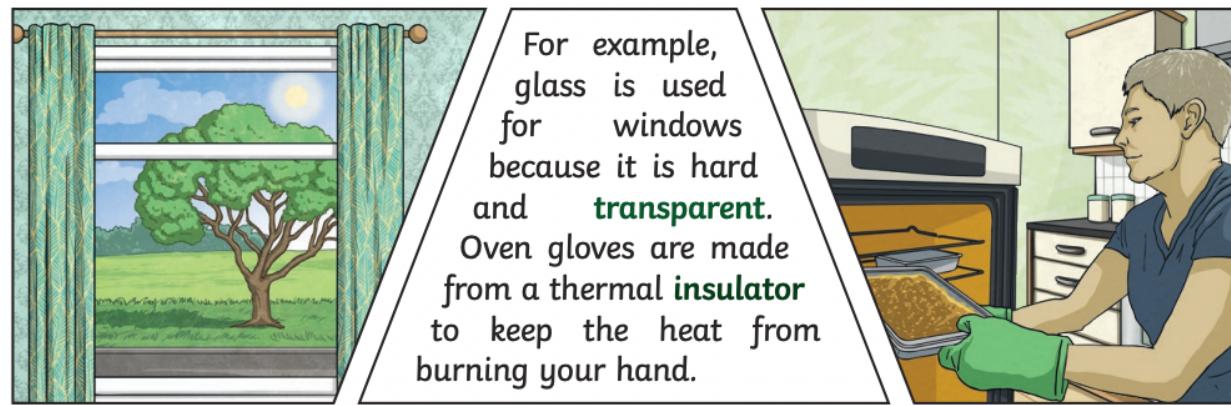

sand dune

natural arch
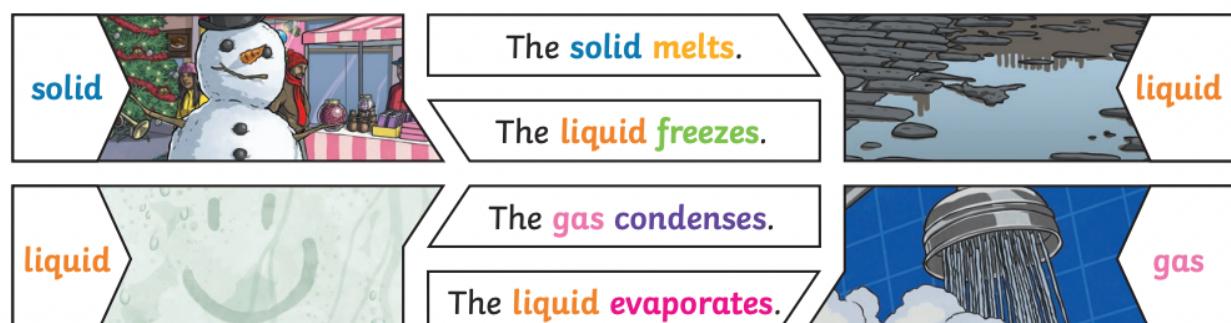

mushroom rock

mesa

salt flat

Key Vocabulary

materials	The substance that something is made out of, e.g. wood, plastic, metal.
solids	One of the three states of matter. Solid particles are very close together, meaning solids, such as wood and glass, hold their shape.
liquids	This state of matter can flow and take the shape of the container because the particles are more loosely packed than solids and can move around each other. Examples of liquids include water and milk.
gases	One of the three states of matter. Gas particles are further apart than solid or liquid particles and they are free to move around. A gas fills its container, taking both the shape and the volume of the container. Examples of gases are oxygen and helium.
melting	The process of heating a solid until it changes into a liquid.
freezing	When a liquid cools and turns into a solid.
evaporating	When a liquid turns into a gas or vapour.
condensing	When a gas, such as water vapour, cools and turns into a liquid.

Key Knowledge

Different **materials** are used for particular jobs based on their properties: electrical **conductivity**, flexibility, hardness, **insulators**, magnetism, solubility, thermal **conductivity**, **transparency**.

For example, glass is used for windows because it is hard and **transparent**. Oven gloves are made from a thermal **insulator** to keep the heat from burning your hand.

solid particles

liquid particles

gas particles

Changes of State

solid

The **solid** **melts**.

The **liquid** **freezes**.

liquid

The **gas** **condenses**.

The **liquid** **evaporates**.

liquid

gas

Key Vocabulary

| conductor	A **conductor** is a material that heat or electricity can easily travel through. Most metals are both thermal **conductors** (they **conduct** heat) and electrical **conductors** (they **conduct** electricity).
insulator	An **insulator** is a material that does not let heat or electricity travel through them. Wood and plastic are both thermal and electrical **insulators**.
transparency	A **transparent** object lets light through so the object can be looked through, for example glass or some plastics.

Key Knowledge

Reversible changes, such as mixing and dissolving **solids** and **liquids** together, can be reversed by:
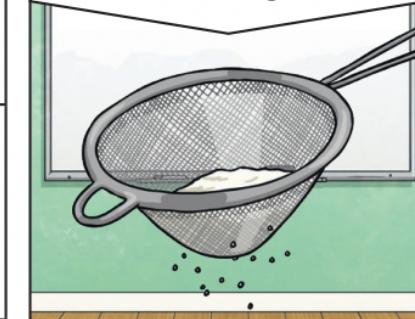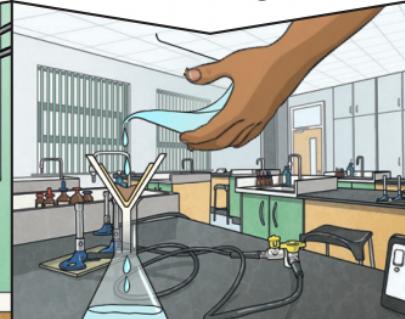
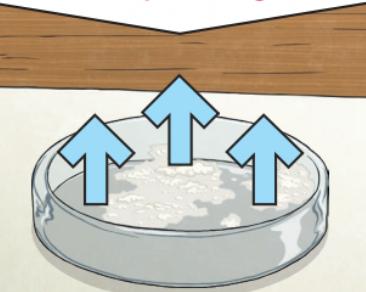| Sieving	Filtering	Evaporating
Smaller **materials** are able to fall through the holes in the sieve, separating them from larger particles.	The **solid** particles will get caught in the filter paper but the **liquid** will be able to get through.	The **liquid** changes into a **gas**, leaving the **solid** particles behind.

Dissolving

A solution is made when **solid** particles are mixed with **liquid** particles. **Materials** that will dissolve are known as soluble. **Materials** that won't dissolve are known as insoluble. A suspension is when the particles don't dissolve.

Sugar is a soluble **material**.

Sand is an insoluble **material**.

Irreversible changes often result in a new product being made from the old **materials** (reactants). For example, burning wood produces ash. Mixing vinegar and milk produces casein plastic.

To look at all the planning resources linked to the Properties and