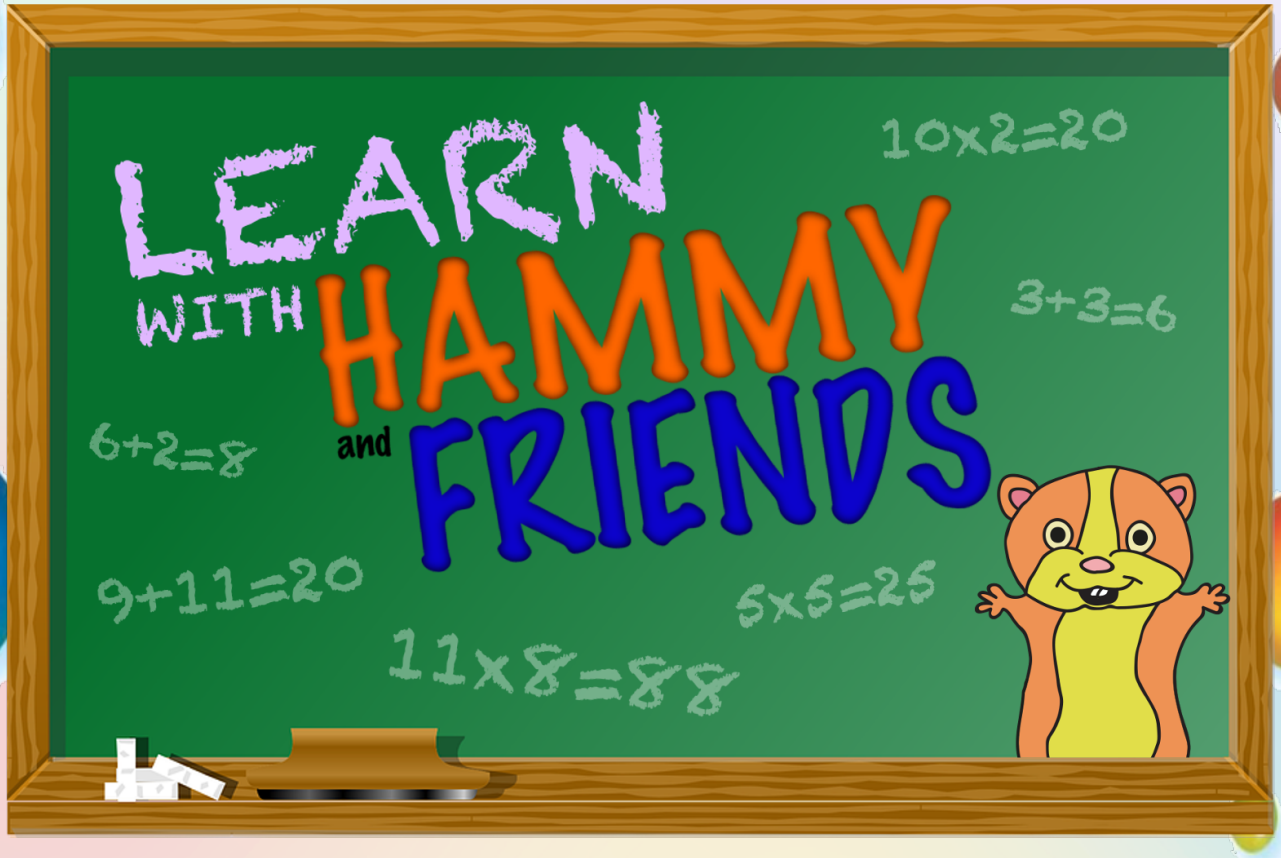
KEY STAGE 2



THIS BOOKLET BELONGS TO:

Contents

Basic Algebra	
Fractions, decimals and percentages	
Angles	
Measurements	
Data handling	
Test time	
Science:	
Animals	
Microorganisms	
Life cycles and reproduction	
Food chains	
Plants	
Human body	
Materials	
States of matter: solids, liquids and gases	
Forces of motion	
Electricity	
Space	
Light and sounds	
Experiments	

Spelling

How many words can you spell correctly? Ask your parents to read them and you write them.

1. Accident	17. Favourite	33. Popular
2. Address	18. February	34. Possible
3. Appear	19. Grammar	35. Probably
4. Believe	20. Guide	36. Quarter
5. Bicycle	21. Heard	37. Regular
6. Breath	22. Heart	38. Remember
7. Breathe	23. Height	39. Separate
8. Business	24. Imagine	40. Straight
9. Calendar	25. Increase	41. Surprise
10. Centre	26. Interest	42. Though
11. Certain	27. Knowledge	43. Thought
12. Decide	28. Library	44. Various
13. Describe	29. Medicine	45. Weight
14. Difficult	30. Minute	46. Woman
15. Eight	31. Occasion	47. Worrier
16. Extreme	32. Opposite	

Write your spellings here…

1.	16.
2.	17.
3.	18.
4.	19.
5.	20.
6.	21
7.	22.
8.	23.
9.	24.
10.	25.
11	26.
12.	27.
13.	28.
14.	29.
15.	30.

31.	46.
32.	47.
33.	
34.	
35.	
36.	
37.	
38.	
39.	
40.	
41	
42.	
43.	
44.	
45.	

Punctuation

Carefully read through all the types of punctuation below as you will be tested on the next page.

. **Full Stop** – this is used at the end of a sentence.

, **Comma** – marks a pause between parts of a sentence.

? **Question Mark** – marks the end of a sentence that is asked as a question.

! **Exclamation Mark** – marks the end of a sentence that expresses strong emotion.

' **Apostrophe** – shows possession.

‘ ’ **Speech Marks** – Anything said as a speech.

Punctuation

Carefully read through all the types of punctuation below as you will be tested on the next page.

: **Colon** – this is used after a sentence to introduce list, quote or definition.

; **Semi-Colon** – this is used to separate two main clauses that are closely related but could stand on their own as sentences.

– **Dash** – this is used to separate elements within a sentence and indicates emphasis or interruption.

... **Ellipsis** – this indicates that one or more words are missing

( ) **Brackets** – this encloses additional related information.

“ ” **Quotation Marks** – this indicates quotes or direct speech.

Punctuation

Here's a paragraph from one of Hammy's books, but it has no punctuation. Can you correct all the mistakes?

the party was full of animals There was a badger a fox a rabbit a mouse a lizard a tortoise a caterpillar a duck an alligator an elephant a queen bee a penguin a giraffe an iguana a jaguar a kangaroo a newt and an otter. I couldn t believe my eyes.

I don't want to sound rude, but what is this party for I asked.

There are 24 mistakes. Did you spot them all?

Prefixes and Suffixes

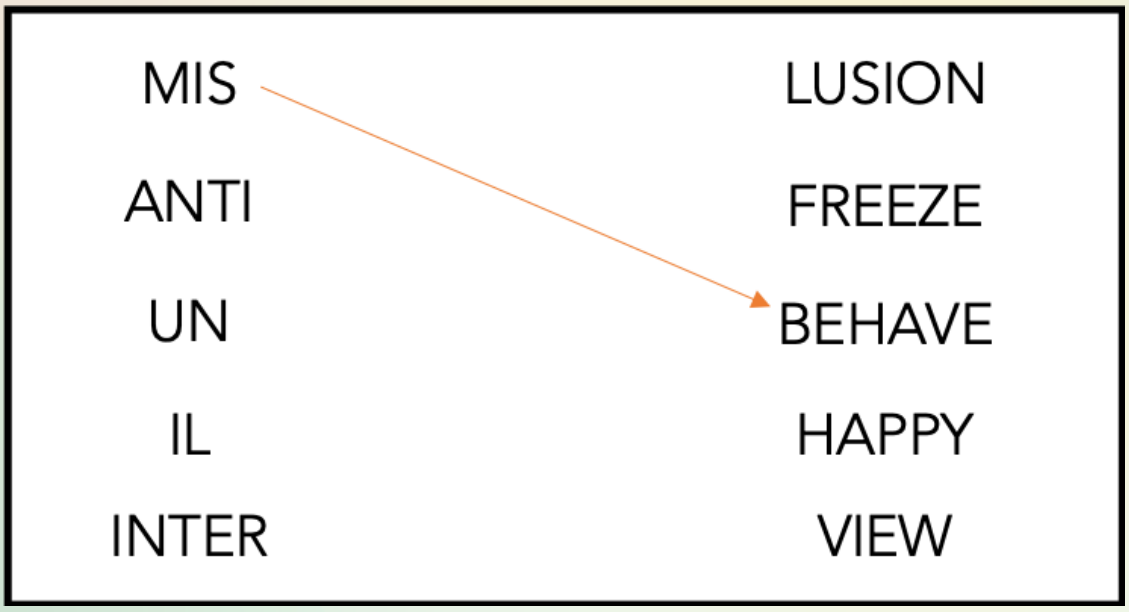
What are they?

PREFIXES

A prefix is a syllable that is put in front of a base word. They sometimes make a word that's opposite of the base word.

Example of prefixes and a base word:
DISagree
UNkind
ANTIclockwise
INcorrect

Match the prefixes to a base word…



Prefixes and Suffixes

What are they?

SUFFIXES

A suffix is a group of letters added to the end of a word to change its meaning.

Example of suffixes:
careLESS
fellowSHIP
joyLESS

Now add the suffix ly or ed to make a new word.

Careful_____ Fluster_____

Kind_____ Cherish_____

Painful_____ Calm_____

Adjectives, Verbs and Nouns

What is a…?

ADJECTIVE

An adjective is a word that describes a noun.

VERB

A verb is a ‘doing’ word.

NOUN

A noun is a person, place or a thing.

Now, it’s time for you to use and identify adjectives, verbs and nouns…

Adjectives, Verbs and Nouns

Sort out all the words into the correct columns.

bed	tall	green	make
fish	watch	dog	fly
horse	cry	car	blue
ride	smoky	sing	school

ADJECTIVE	VERB	NOUN

Pronouns and Adverbs

What are they?

PRONOUNS

A pronoun is a word that can be used instead of a noun. For example: I, she, he, you, me, most etc…

Fill in the correct pronoun in the following sentences:

1. Mum and _____ went to the cinemas yesterday. (I, we, us

2. This is my dad's favourite chocolate so I will put _____ in my basket and buy it for _____. (them, it, him, her)

3. The teacher gave more homework to _____. (them, it, we, they)

Pronouns and Adverbs

What are they?

ADVERBS

An adverb is simply a word that describes a verb. For example; He ate his breakfast quickly. They can come before or after a verb too.

Circle the adverbs in the following sentences:

1. We finally got our grades from the test.

2. We danced merrily around the playground.

3. We ran to the park quickly.

4. My mum cares for me deeply.

5. I almost ate a rotten apple.

Sentences

Your task: write 3 descriptive sentences.

Alliteration

Alliteration is when words start with the same letter/sound. For example; *Sally the snake slithered slowly.*

Your task: Write three sentences using alliteration.

Metaphors and Similes

What are they?

METAPHORS

A metaphor is used to describe one thing as being something else.

SIMILES

A simile is a comparison between two things using the words *like* or *as*.

YOUR TASK: Complete the following metaphors and similes by choosing the correct words.

shaking	giant
quietly	hair
slept	flaming
sun	erupting

Metaphors and Similes

1. The girl was _____ like a leaf.

2. The boy _____ like a log.

3. The children crept as _____ as mice.

4. The icicle shone like the _____.

5. The sun was a _____ golf ball in the sky.

6. The bear was a furry _____.

7. The teacher was an _____ volcano, exploding with lava.

8. Her _____ was a silky blanket.

Onomatopoeia and Personification

What are they?

ONOMATOPOEIA

Onomatopoeia is a word that sounds like what it means. For example; thud, crash, bang etc…

YOUR TASK: match the words to the correct onomatopoeia word.

balloon	roar
train	pop
bee	zoom
drinking	tick tock
clock	buzz
lion	slurp

Onomatopoeia and Personification

What are they?

PERSONIFICATION

Personification is when you give human qualities or actions to an object, animal or idea.

YOUR TASK: circle the personification in the following sentences.

1. The sun stretches its warmth across the land.

2. The chair danced as the baby bounced back and forth.

3. The darkness wrapped its arms around me.

Now, write you own using the word below…

Tree

_____

_____

Synonyms and Antonyms

What are they?

SYNONYMS

Synonyms are words with the same or similar meaning, such as; happy, cheerful and merry.

ANTONYMS

Antonyms are words with opposite meanings, such as; angry and peaceful.

SYNONYM	WORD	ANTONYM
scorching	hot	cold
	over	
	buy	
	man	

You can use a thesaurus to find synonyms and antonyms for words.

Types of text

There are many different types of text in the world of literature.

Fiction: made up stories.

Non-Fiction: stories that are made up of facts.

Poems: short verses that sometimes rhyme.

Play: a script of a performance.

YOUR TASK: see next page…

TEST: creative writing

You're now going to spend 30 minutes to write a creative **fiction** story. Think of a beginning, a middle and an end.

Use this space to plan your story… also ask your grown up for some lined paper.

Well done… you have completed your English section. Now, let's move on to **Maths**…

Numbers: place value

What is place value?

- We use place value headings like 10, 100, 1000. These help us see which numbers are bigger than others.

Such as; the number 3292 is made up of… 3 thousands, 2 hundreds, 9 tens and 2 ones.

Thousands	Hundreds	Tens	Ones		1/10th	1/100th
3	2	9	2			
		3	4	.	2	

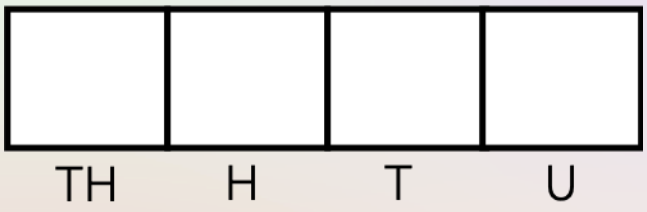
Using the grid above is easy to work out a question… 34.2x10 – to work this sum out all you would have to do is move each digit ONCE to the left, making the answer 342 (3 hundred, 4 tens and 2 ones.)

PLACE VALUE CHALLENGE

Arrange the digits to make a number to the given criteria.

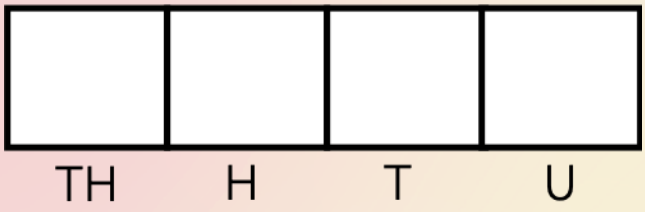
1. A number between 560 and 600

5, 2, 7, 9



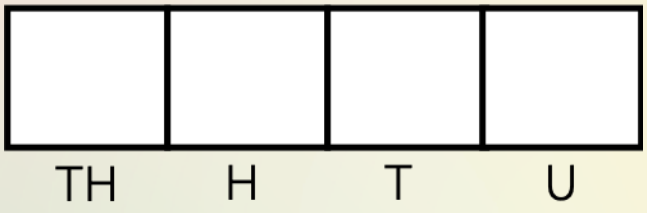
2. A number between 400 and 420

1, 4, 3, 8



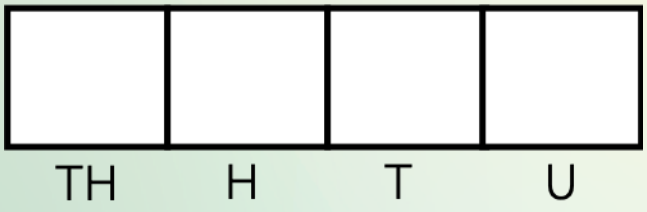
3. A number between 1000 and 1100

1, 4, 0, 3



4. A number between 250 and 300

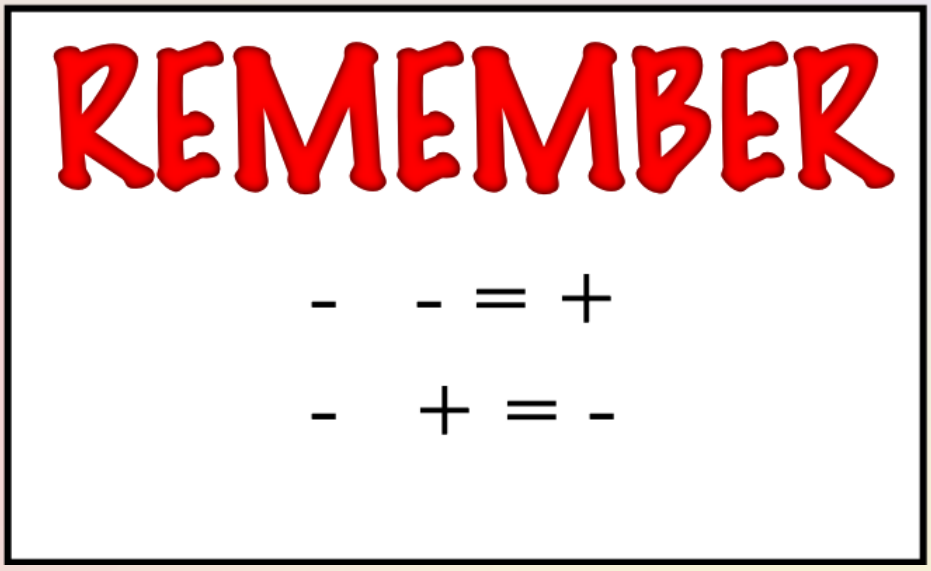
2, 2, 7, 6



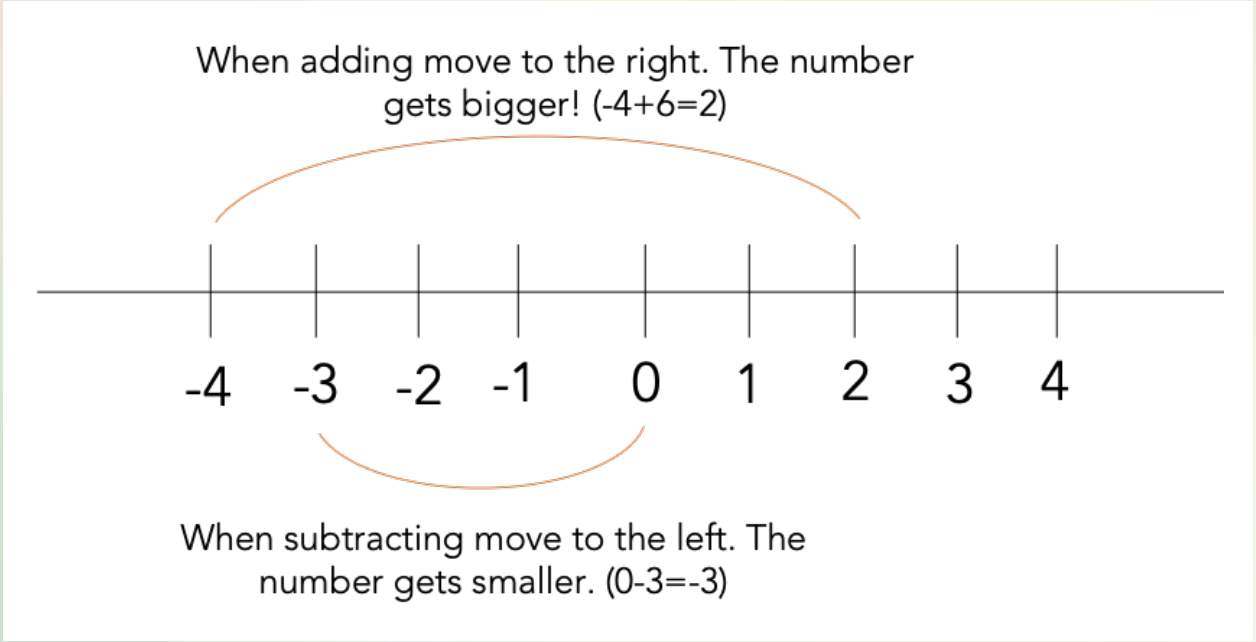
Numbers: negative numbers

Numbers don't stop at 0, you can continue counting backwards, which creates negative numbers, such as; -1, -2, -3 etc…

When working out sums always remember:



The bigger the negative number the smaller it is.



Numbers: negative numbers

Work out the following sums. You can draw a number line to help if you want to.

1. 0 + (-7) =_____

2. (-3) + 2 = _____

3. 2 + (-8) =_____

4. (-7) + 1 = _____

5. 6 - 9 = _____

6. (-3) + 7 = _____

7. (-3) + (-1) = _____

Numbers: factors

Factors are numbers that divide exactly into another number.

For example:
The factors of 4 are: 1, 2 and 4
1x4=4
2x2=4

YOUR TASK: to find the factors of the numbers.

1. 15 - _____, _____, _____, _____

2. 25 - _____, _____, _____

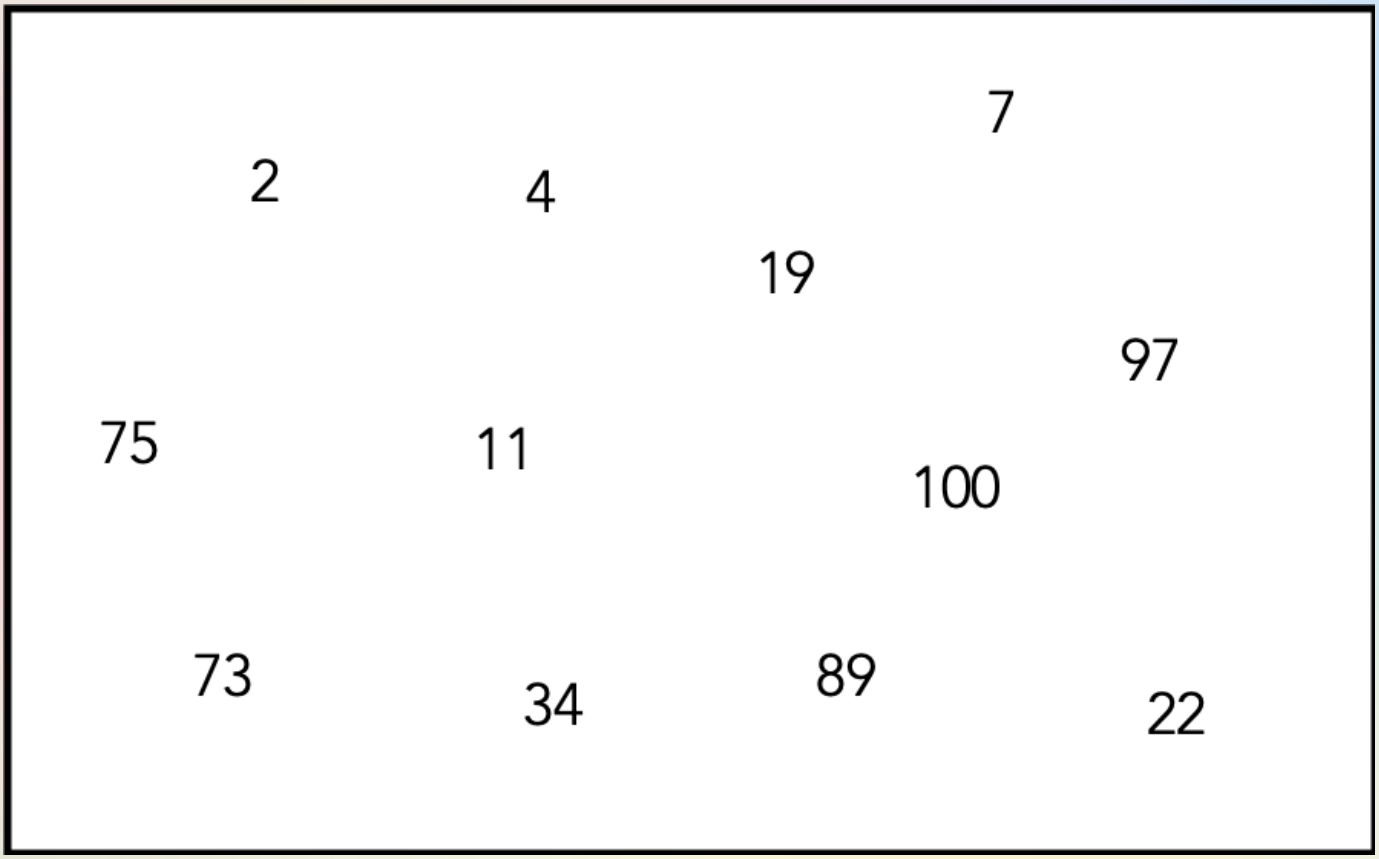
3. 27 - _____, _____, _____, _____

4. 18 - _____, _____, _____, _____, _____, _____

Numbers: prime numbers

Prime numbers are numbers that are divisible by itself and 1.

Can you spot the prime numbers below?



Numbers: squared and cubed numbers

Squared numbers are numbers that are multiplied by itself.

Cubed numbers are numbers that are multiplied by itself 3 times.

Find the squared and cubed numbers:

1. $2^2 = 2x2 = 4$

2. $3^2 = 3x3 =$ _____

3. $4^2 =$ _____ = _____

4. $5^2 =$ _____ = _____

5. $2^3 = 2x2x2 =$ _____

6. $3^3 = 3x3x3 =$ _____

7. $4^3 =$ _____ = _____

Times Tables

Let's learn all the times tables together!

ONE TIMES TABLES
1x1=1
2x1=2
3x1=3
4x1=4
5x1=5
6x1=6
7x1=7
8x1=8
9x1=9
10x1=10
11x1=11
12x1=12

TWO TIMES TABLES
1x2=2
2x2=4
3x2=6
4x2=8
5x2=10
6x2=12
7x2=14
8x2=16
9x2=18
10x2=20
11x2=22
12x2=24

THREE TIMES TABLES
1x3=3
2x3=6
3x3=9
4x3=12
5x3=15
6x3=18
7x3=21
8x3=24
9x3=27
10x3=30
11x3=33
12x3=36

FOUR TIMES TABLES
1x4=4
2x4=8
3x4=12
4x4=16
5x4=20
6x4=24
7x4=28
8x4=32
9x4=36
10x4=40
11x4=44
12x4=48

FIVE TIMES TABLES
1x5=5
2x5=10
3x5=15
4x5=20
5x5=25
6x5=30
7x5=35
8x5=40
9x5=45
10x5=50
11x5=55
12x5=60

SIX TIMES TABLES
1x6=6
2x6=12
3x6=18
4x6=24
5x6=30
6x6=36
7x6=42
8x6=48
9x6=54
10x6=60
11x6=66
12x6=72

SEVEN TIMES TABLES
1x7=7
2x7=14
3x7=21
4x7=28
5x7=35
6x7=42
7x7=49
8x7=56
9x7=63
10x7=70
11x7=77
12x7=84

EIGHT TIMES TABLES
1x8=8
2x8=16
3x8=24
4x8=32
5x8=40
6x8=48
7x8=56
8x8=64
9x8=72
10x8=80
11x8=88
12x8=96

Times Tables

Let's learn all the times tables together!

NINE TIMES TABLES
1x9=9
2x9=18
3x9=27
4x9=36
5x9=45
6x9=54
7x9=63
8x9=72
9x9=81
10x9=90
11x9=99
12x9=108

TEN TIMES TABLES
1x10=10
2x10=20
3x10=30
4x10=40
5x10=50
6x10=60
7x10=70
8x10=80
9x10=90
10x10=100
11x10=110
12x10=120

ELEVEN TIMES TABLES
1x11=11
2x11=22
3x11=33
4x11=44
5x11=55
6x11=66
7x11=77
8x11=88
9x11=99
10x11=110
11x11=121
12x11=132

TWELVE TIMES TABLES
1x12=12
2x12=24
3x12=36
4x12=48
5x12=60
6x12=72
7x12=84
8x12=96
9x12=108
10x12=120
11x12=132
12x12=144

How did you do? Tick the ones you have learnt off by heart.

ONE TIMES TABLES		SEVEN TIMES TABLES	
TWO TIMES TABLES		EIGHT TIMES TABLES	
THREE TIMES TABLES		NINE TIMES TABLES	
FOUR TIMES TABLES		TEN TIMES TABLES	
FIVE TIMES TABLES		ELEVEN TIMES TABLES	
SIX TIMES TABLES		TWELVE TIMES TABLES	

Addition and Subtraction

Introducing column addition and subtraction.

Question: 452 + 79 = ?

Step one: separate the numbers in hundreds, tens and units.

$$\begin{array}{r} 4\,5\,2 \\ +\quad 7\,9 \\ \hline \end{array}$$

Step two: start adding units first, 2+9=11. Because it's a double digit you carry the tens to the other column.

$$\begin{array}{r} 4\,5\,2 \\ +\quad 7_{1}\,9 \\ \hline 1 \end{array}$$

Step three: add the tens column, 5+7+1=13. Because it's a double digit you carry the tens to the other column, like before.

$$\begin{array}{r} 4\,5\,2 \\ +\ {}_{1}\,7_{1}\,9 \\ \hline 3\,1 \end{array}$$

Step four: add the hundreds column, 4+1=5.

$$\begin{array}{r} 4\,5\,2 \\ +\ {}_{1}\,7_{1}\,9 \\ \hline 5\,3\,1 \end{array}$$

Answer: 452 + 79 = 531

Addition and Subtraction

Introducing column addition and subtraction

Question: 482 - 59 = ?

Step one: separate the numbers in hundreds, tens and units.

$$\begin{array}{r} 4\,8\,2 \\ -\quad 5\,9 \\ \hline \end{array}$$

Step two: start minus units first, 2-9. you can't minus 2 and 9 as it will create a negative number, instead you borrow a ten from 8, dropping it to 7 and making 2 a 12. And then do the sum 12-9.

$$\begin{array}{r} 4\,\overset{7}{\cancel{8}}\,\overset{1}{2} \\ -\quad 5\,9 \\ \hline \quad\quad 3 \end{array}$$

Step three: minus the tens column, 7-5=2.

$$\begin{array}{r} 4\,\overset{7}{\cancel{8}}\,\overset{1}{2} \\ -\quad 5\,9 \\ \hline 2\,3 \end{array}$$

Step four: minus the hundreds column, 4-0=4.

$$\begin{array}{r} 4\,\overset{7}{\cancel{8}}\,\overset{1}{2} \\ -\quad 5\,9 \\ \hline 4\,2\,3 \end{array}$$

Answer: 482 - 59 = 423

Your task: Complete the sums on the next page using column addition and subtraction.

Addition and Subtraction

Introducing column addition and subtraction

1. 539 + 94

2. 92 + 71

3. 157 – 43

4. 882 – 65

Multiplication and Division

Introducing the grid method and the short division method

Question: 421 x 62 = ?

Step one: split the numbers into a grid, separating hundreds, tens and units.

x	400	20	1
60			
2			

Step two: times all the columns together… 4x6=24 (add the three 0s on) 400x6=24000. etc…

x	400	20	1
60	24000	1800	60
2	800	40	2

Step three: add the rows together.

x	400	20	1	
60	24000	1800	60	25860
2	800	40	2	842

Step four: do column addition to get the answer…

x	400	20	1	
60	24000	1800	60	25860
2	800	40	2	842 (1 1)
				26702

Answer: 421 x 62 = 26,702

Multiplication and Division

Introducing the grid method and the short division method

Question: 365 ÷ 7 = ?

Step one: sort the numbers into the method.

$$7\overline{)365}$$

Step two: start the sum. Does 7 go into 100? No it doesn't, so you carry it over to the 10s. 36÷7= 5 r 1. write down 5 and carry over the 1.

$$\begin{array}{r} 5 \\ 7\overline{)36^{1}5} \end{array}$$

Step three: work out 15÷7= 2 r 1

$$\begin{array}{r} 52\text{ r }1 \\ 7\overline{)36^{1}5} \end{array}$$

Answer: 365 ÷ 7 = 52 r1

Your task: Work out the sums on the next page using the grid method and the short division method.

Multiplication and Division

Introducing the grid method and the short division method

1. 253 x 15

2. 428 x 27

3. 109 ÷ 4

4. 315 ÷ 5

Problem solving

Did you know? Problem solving is around us every day.

When given a problem to solve, it's important to break it down, what operations will I need to use? Addition? Subtraction? Multiplication? Division? All of them? Make sure you read the problems carefully and thoroughly. ALWAYS show your workings out.

Your task: solve the problem below.

Pete went swimming. Each length of the pool is 50m long. He swam 6 lengths. How many lengths more does he have to swim so that he has swum 500m in total?

Rounding and estimating

Rounding to the nearest 10

To round a number to the nearest 10 you have to look at the units number. If it's 5 or more you round up, if it's 4 or below you round down.
E.G. **56** – the unit is a **6** which means we round up to **60**.

Rounding to the nearest 100

To round a number to the nearest 100 you have to look at the tens number. If it's 5 or more you round up, if it's 4 or below you round down.
E.G. **564** – the tens is a **6** which means we round up to **600**.

Rounding to the nearest 100

To round a number to the nearest 1000 you have to look at the hundreds number. If it's 5 or more you round up, if it's 4 or below you round down.
E.G. **5251** – the hundreds is a **2** which means we round down to **5000.**

Rounding and estimating

Your task: round the following numbers…

To the nearest 10:

1. 467 _____
2. 92 _____
3. 151 _____
4. 739 _____

To the nearest 100:

5. 782 _____
6. 1457 _____
7. 390 _____
8. 251 _____

To the nearest 1000:

9. 1389 _____
10. 7628 _____
11. 1920 _____
12. 9215 _____

Rounding and estimating

You can use estimation to get a rough idea of what the answer is. To estimate it's always best to round the numbers. If your estimation is very different to the actual answer, then a mistake will have been made. Use a calculator to check your result.

Your task: estimate the answers to these sums.

1. 501 x 12 = _____

2. 75 x 14 = _____

3. 59.6 x 22 = _____

Basic Algebra

Equations

When you're solving an equation, you have to move everything to one side, apart from the missing number.

Anything you do to one side you must do to the other. For example: $7 + x = 19$ first subtract 7 from the left side ($7 + x - 7 = x$) and then subtract 7 from the right side. (19-7=12) So, $x = 12$.

Your turn: work out the following equations.

1. $18 + x = 29$ $\quad x =$ _____

2. $59 - x = 14$ $\quad x =$ _____

3. $145 + x = 230$ $\quad x =$ _____

Fractions, decimals and percentages

Fractions

Adding and subtracting fractions are easy when the denominator (the bottom number) are the same:

$$\frac{4}{9} + \frac{2}{9} = \frac{6}{9}$$

However, sometimes the denominator can be different, in which you would then use equivalent fractions:

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

A **common multiple** of 2 and 3 is 6.

$$\frac{1}{2} \begin{matrix} x3 \\ x3 \end{matrix} = \frac{3}{6} \qquad \frac{1}{3} \begin{matrix} x2 \\ x2 \end{matrix} = \frac{2}{6}$$

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

Fractions, decimals and percentages

Multiplying Fractions

Multiplying fractions are super easy. Simply multiply the numerators and then multiply the denominators.

$$\frac{2}{3} \text{ x } \frac{5}{10} = \frac{10}{30}$$

Simplifying Fractions

The way to simplify fractions is the see if the numerator and denominator can both be divided into the same number.

$$\frac{2}{3} \text{ x } \frac{5}{10} = \frac{10}{30}$$

$10 \div 10 = 1$

$30 \div 10 = 3$

10 and 30 can both be divided by 10.

so the answer becomes

$$\frac{1}{3}$$

Fractions, decimals and percentages

Your task: work out the following sums.

1. $\frac{3}{6} + \frac{1}{6} =$

2. $\frac{2}{5} + \frac{2}{5} =$

3. $\frac{6}{11} + \frac{3}{11} =$

4. $\frac{3}{10} + \frac{2}{5} =$

Now, work out these sums to their simplest form:

1. $\frac{10}{20} \times \frac{2}{4} =$

2. $\frac{5}{7} \times \frac{3}{5} =$

3. $\frac{9}{11} \times \frac{2}{4} =$

4. $\frac{2}{6} \times \frac{3}{5} =$

Fractions, decimals and percentages

Decimals

A decimal is a way of writing a number that isn't a whole number. They can be seen as the 'in-between numbers' as 10.6 is in-between 10 and 11.

Your task: Put the following decimals in order from smallest to largest.

0.85	1.3	0.42	0.12	1.9	2.7
____	____	____	____	____	____
1.72	0.02	0.20	0.98	1.74	6.5
____	____	____	____	____	____

Rounding decimals

Rounding decimals follows the exact same format as rounding whole numbers, however, there's extra place value words that are used. For example; tenths and hundredth.

Fractions, decimals and percentages

Round 8.78 to the nearest tenth

tenth

8.78

Remember: 5 or more round up. 4 or less round down.

8.80

also, with decimals you don't always need to include a 0 as it doesn't mean anything.

Answer is: 8.8

Round 8.782 to 2 decimal places (2d.p.)

2 decimal places

8.782

Remember: 5 or more round up. 4 or less round down.

Answer is: 8.78

Fractions, decimals and percentages

Your task: round the following decimals to the nearest tenth.

1. 4.83 _____

2. 19.31 _____

3. 3.87 _____

4. 16.78 _____

Now, round the following decimals to 2 d.p.

1. 17.782 _____

2. 6.231 _____

3. 9.347 _____

4. 25.739 _____

Fractions, decimals and percentages

Percentages

The sign '%' means **per cent** which stands 'for out of 100'

For example: 20% means 20 out of 100.

To convert a percentage to a decimal you simply divide by 100. For example:

$35\% = 35 \div 100 = 0.35$

To convert a decimal to a percentage you simply multiply by 100. For example:

0.42 = 0.42 x 100 = 42%

Your task: to convert decimals and percentages on the next page.

Fractions, decimals and percentages

Convert these decimals to percentages

1. 0.92 =

2. 0.32 =

3. 0.87 =

4. 0.45 =

5. 0.99 =

Convert these percentages to decimals

1. 56% =

2. 90% =

3. 21% =

4. 12% =

Angles

An angle is a measure of turn. There are 360° in a full turn. You can find an angle using a protractor.

KEYWORDS:

Acute: an angle less than 90°

Obtuse: an angle between 90° and 180°

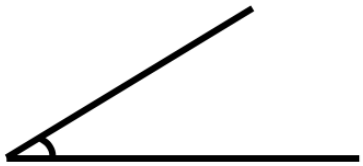
Reflex: an angle greater than 180°

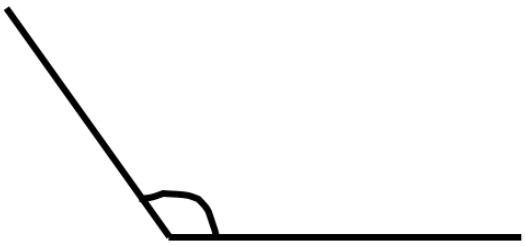
Right-angle: an angle that is exactly 90°

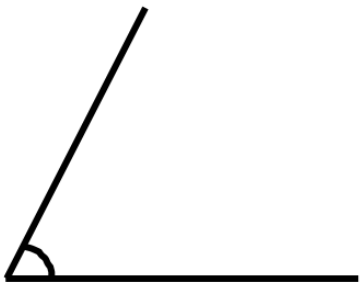
Your task: Measure the angles on the next page using a protractor.

Angles

What are the angles?







Measurements

Metric measurements are used to measure the length, weight or volume of an object.

Length is measured in:

mm – millimetres
cm – centimetres
m – metres
km – kilometres

Weight is measured in:

g – grams
kg – kilograms
ml – millilitres
l – litres

REMEMBER:

1cm = 10mm
1m = 100cm
1km = 1000m

1kg = 1000g
1l = 1000ml

Measurements

YOUR TASK: Convert the following measurements:

Convert these lengths into centimetres.

1. 20mm = _____cm

2. 50mm = _____cm

3. 35mm = _____cm

Convert these lengths in metres.

1. 200cm = _____m

2. 700cm = _____m

3. 450cm = _____m

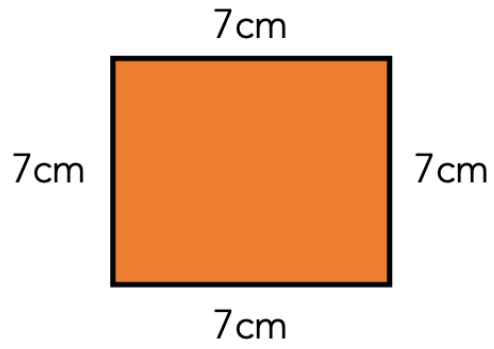
Measurements

Perimeter and Area of shapes

To find the **perimeter** of a shape, simply add all the sides together.

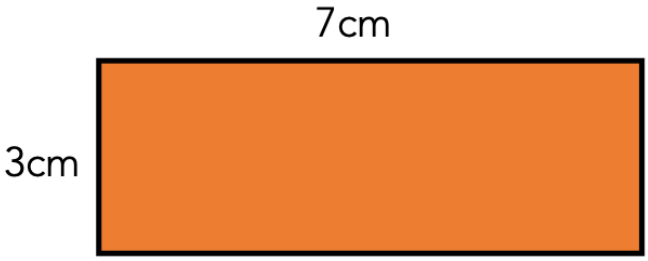
To find the **area** of a shape, simply multiply the width and length together.

Find the perimeter of this square:



7cm + 7cm + 7cm + 7cm = 28cm

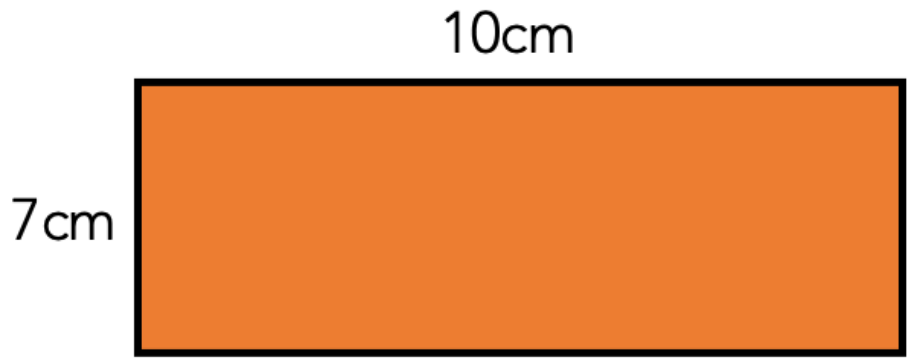
Find the area of this rectangle:



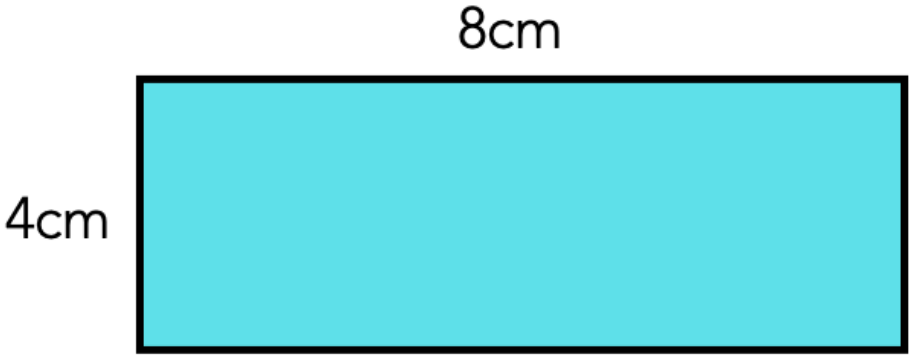
7cm x 3cm = 21cm^2

Measurements

YOUR TASK: find the perimeter and area of these rectangles…



Perimeter =
Area =



Perimeter =
Area =

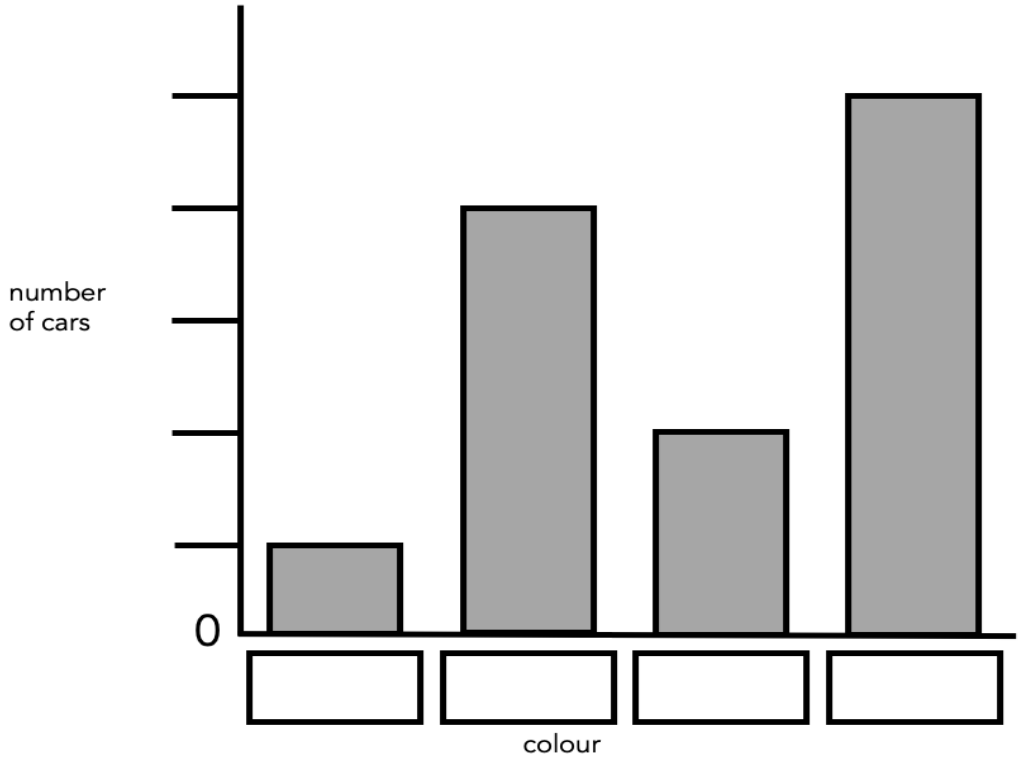
Data handling

There are many ways of handling data, such as; charts and graphs. Answer the easy question below…

Tommy collected some information about the colours of some cars.

Colour	Number of cars
green	2
red	8
black	4
grey	10

The bar graph shows the information from the table. Fill in the missing labels.



Data handling: finding averages

There are three ways of finding averages…

Mode – is the number that appears the most.
To find the mode, order the numbers lowest to highest and see which number appears the most.

Median – is the middle number.
To find the median, order the numbers and see which one is in the middle of the list. However, if there are two middle values the median is halfway between them – it might not be a whole number.

Mean – is the total of numbers divided by how many numbers there are.
To find the mean, add all the numbers together and divide by the number of numbers.

Range – is the difference between the biggest and the smallest number.
To find the range, subtract the lowest number from the biggest number.

Data handling: finding averages

YOUR TASK: Find the mode, median, mean and range of these following numbers.

3 12 15 8 4 3 2

Mode - _____

Mean - _____

Median - _____

Range - _____

Test Time

1. Write down all the factors of 35

_____

(2 marks)

2. Work out the answers to these sums and show your workings out:

a) 459 + 183

b) 972 – 135

c) 89 x 4

d) 165÷3

(8 marks)

3.

a) round 568 to the nearest 10 _____

b) round 1357 to the nearest 100 _____

c) round 8930 to the nearest 1000 _____

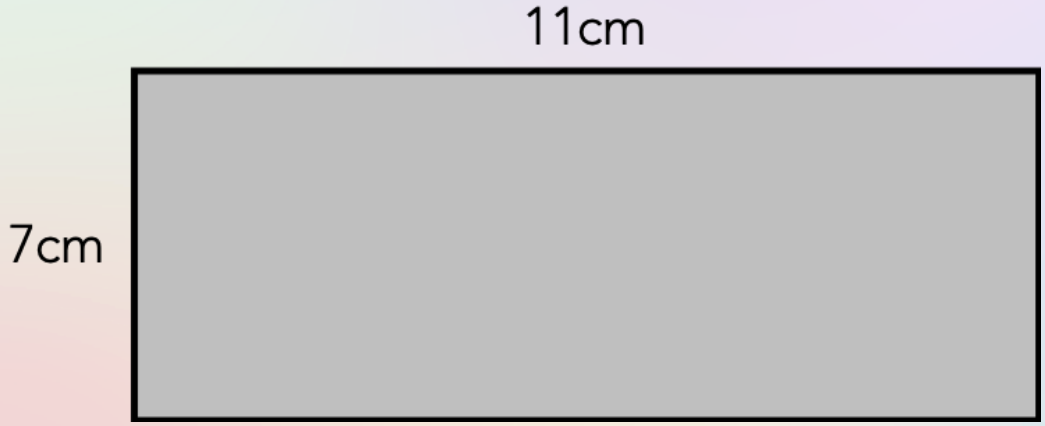
(3 marks)

4. What is the value of x?

$$759 - x = 289$$

(2 marks)

5. What is the perimeter and area of the rectangle below?



Perimeter =
Area =

(4 marks)

6. Work out the mean of these numbers.

8 5 7 7 10 11 13

(2 marks)

Well done, you have finished the test, get your parents to mark it to see how well you have done.

(out of 21 marks)

Well done… you have completed your Maths section. Now, let's move on to **Science**…

Animals

Animals can be divided into separate groups by looking at the similarities and differences between them. There are two main groups:

Vertebrates – have a backbone
Invertebrates – don't have a backbone

Vertebrates and invertebrates are divided into smaller groups, for example; vertebrates are divided into fish, amphibians, reptiles, birds and mammals. And invertebrates have soft bodies like jellyfish, worms and slugs. Some are divided into insects, crustaceans and spiders.

YOUR TASK: On the next page, write as many vertebrates and invertebrates as you can in 60 seconds.

Animals

VERTEBRATES	INVERTEBRATES

Microorganisms

Microorganisms are very very tiny! They can only be seen under a microscope. For example: yeast helps make bread rise. Some microorganisms are very helpful and good; however, some can be bad.

YOUR TASK: Fill in the gaps in this paragraph about microorganisms. Use the words to help you.

mould	wash	bread
bacteria	microscope	yeast
viruses	microorganisms	water

Microorganisms can only be seen through a _____ as they are very tiny. We can find _____ all around us in food, _____, air and in our bodies. _____ is a microorganism found on rotten food. _____ are microorganisms which can cause the common cold. _____ found in all our mouths is a microorganism. Bacteria can be very useful in the making of _____ and

beer in the form of _____. To avoid the spread of harmful microorganism we should _____ our hands regularly with soap and hot water.

Life cycles and reproduction

What is a life cycle?

All animals including humans are born, get older, bigger, some will have children and in the end they die. We call this a life cycle.

The human life cycle

There are six stages:

1. **Foetus** – a baby is growing inside its mum's womb.

2. **Baby** – a baby is born after spending 9 months inside the womb.

3. **Childhood** – learn to walk and talk.

4. **Adolescence** – a child becomes a teenager.

5. **Adulthood** – your body is fully developed.

6. **Old age** – the last stage in the life cycle of a human.

Life cycles and reproduction

Reproduction

To reproduce, animals need a male and a female. Together they create babies.

However, some animal create offspring's, such as chickens who lay eggs. Other animals such as humans or lions, grow their babies inside of them until they are developed to be born.

Food chains

What is a food chain?

A food chain shows how plants and animals eat and get their energy.

A food chain always starts with a PRODUCER – this is usually a plant or organism that makes its own food. Such as; a plant makes its own food by photosynthesis. A living thing that eats the producer is called the CONSUMER. At the end of a food chain is a PREDATOR that eats other animals to survive. These animals can be called a prey.

YOUR TASK: cut out the images and on the next page stick them in the correct order against their labels.

producer

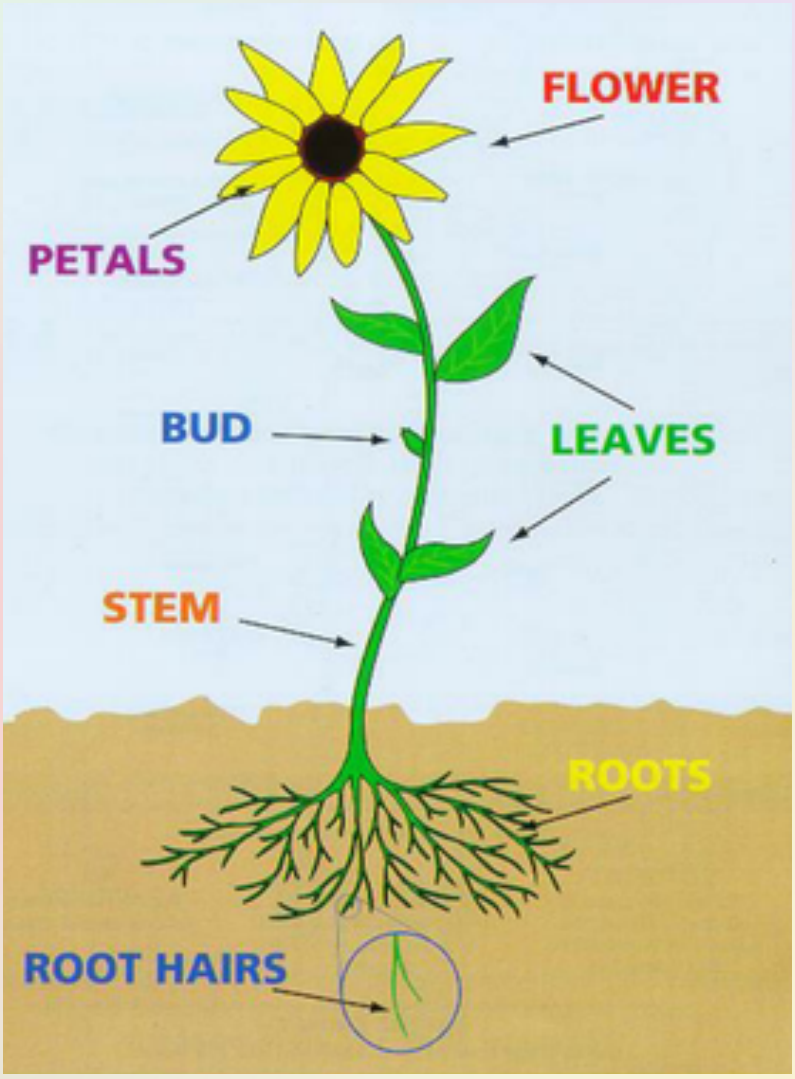
consumer

consumer/prey

predator

Plants

Parts of a plant.



The different parts of a plant have different functions.

YOUR TASK: FILL in the blanks.

Plants

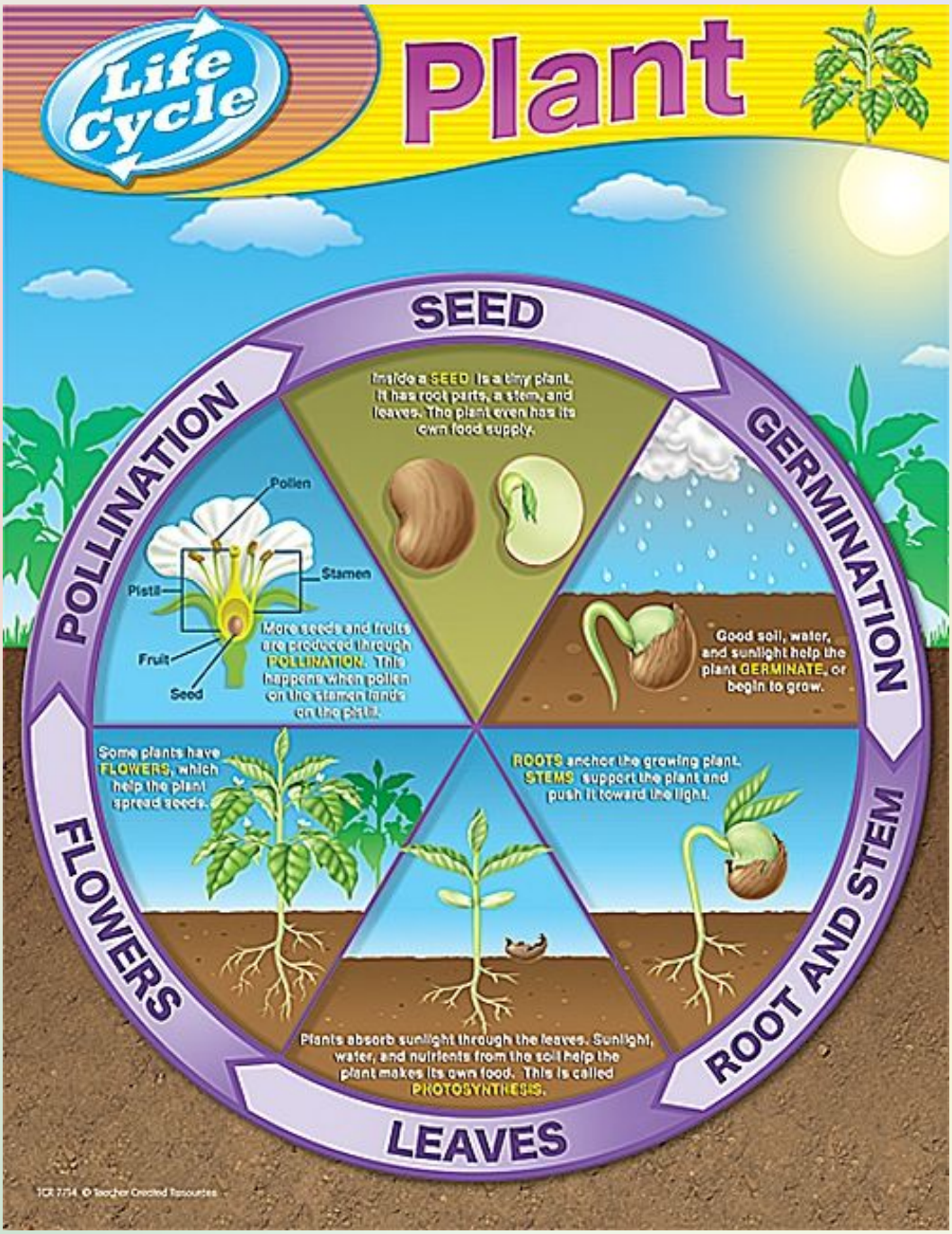
water	carbon dioxide	flowers	light
stem	photosynthesis	nutrients	produce

The roots of a plant take up _____ and _____ from the soil. The _____ carries water and nutrients to different parts of the plant. The leaves use _____ from the sun, along with _____ from the air and water to make food. This process is called _____. Some plants have _____. These are involved in reproduction and _____ seeds from which new plants can grow.

Plants

Why are plants important?

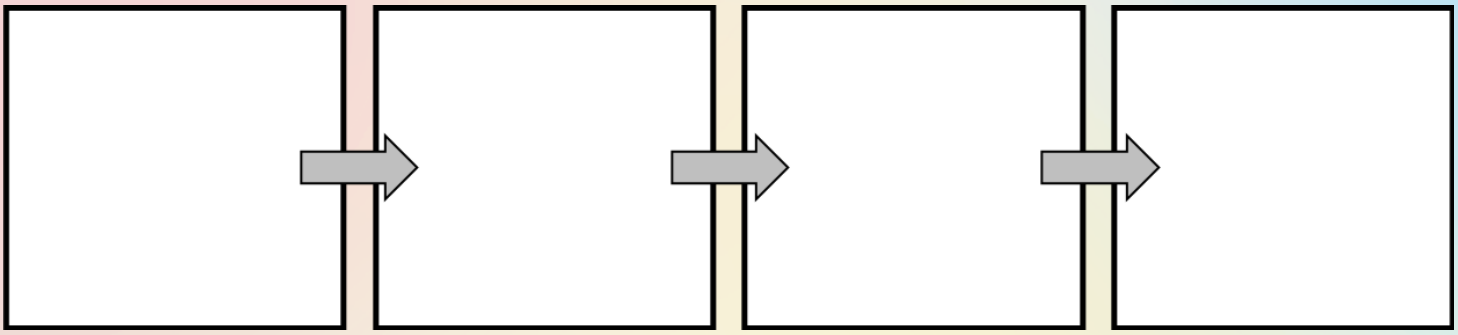
Plants are really important for all living things. Plants absorb carbon dioxide and release oxygen from its leaves – which we need to breathe.



Plants

YOUR TASK: Put the following plant's life cycle in order.

Germination	Pollination	Seed dispersal	Growth
roots emerge from the seed	pollen is carried from one to another then fertilises the egg	the fertilised egg becomes a seed, which is then scattered through the wind	the stem, leaves and flower grow above the soil



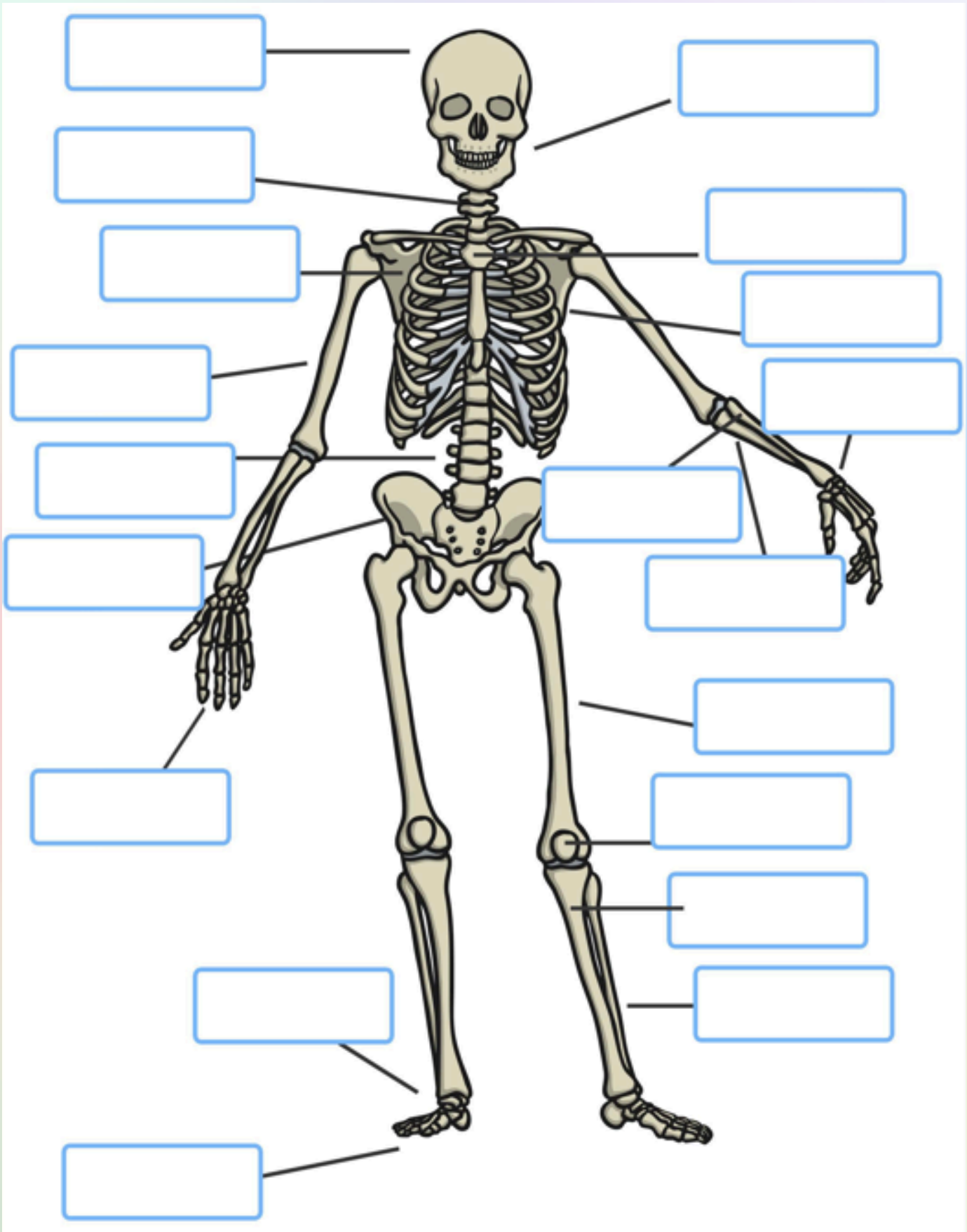
Human Body

The Skeleton

Many animals have skeletons to support and protect their bodies. The human body is made up of bones in which they grow as we do. The skeleton bends at joints, such as the knee.

YOUR TASK: see how many parts of the skeleton you can label on the next page.

skull	breast bone	neck bone	rib
shoulder blade	forearm bone	upper arm bone	elbow bone
backbone	wrist	hip	thigh bone
finger bones	knee cap	ankle bone	shin bone
foot bone	calf bone	lower jaw	



Materials

Types of materials

There are many different types of materials, such as;

Metals – most metals are strong, hard and shiny, that don't usually break easily, some are magnetic.

Plastics – these are made from chemicals and are not found in nature. They are strong and waterproof; they are not magnetic.

Glass – these are made by melting sand and other minerals together at a very very high heat. Glass is normally transparent, such as; windows.

Wood – this comes from trees; it is strong and long lasting.

Fabrics – these are made from thin fibres woven together. Some can be stretchy, insulating or absorbent.

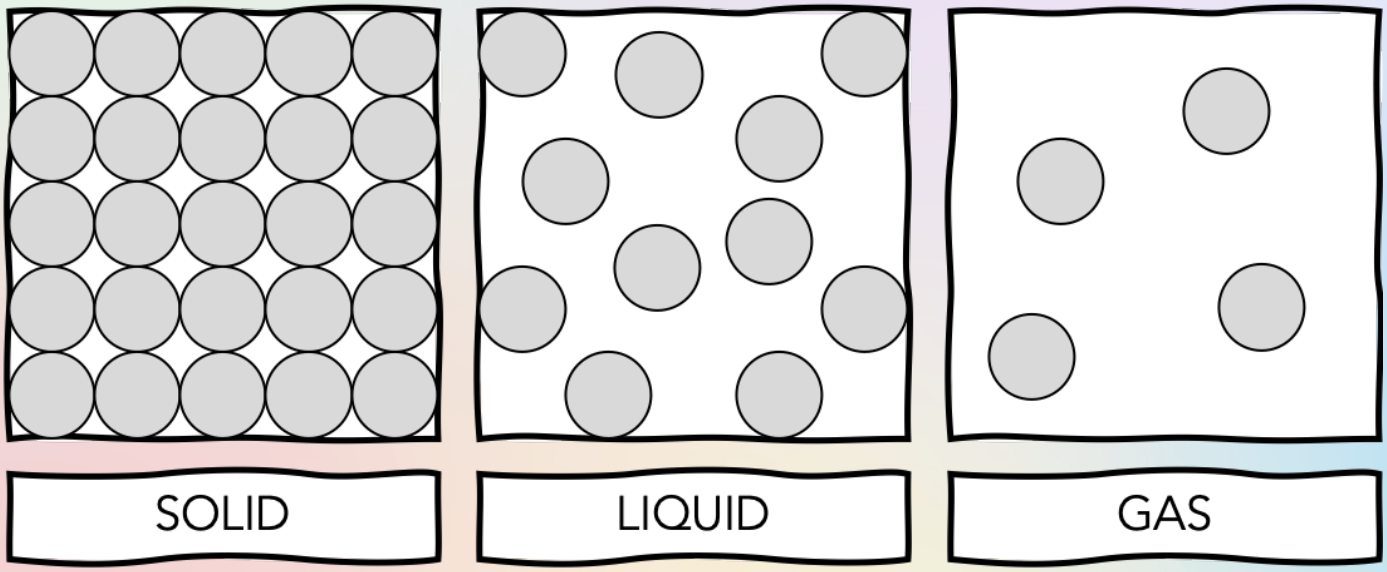
Materials

YOUR TASK: can you write as many different items made out of the five materials you have read about.

Metals	Plastics	Glass	Wood	Fabrics

States of Matter: Solids, Liquids and Gases

States of matter comes in three forms… a solid, liquid or gas.



Fill in the gaps, using the words; solid, liquid or gas:

If a _____ is melted it will turn into a _____, this is calling melting.

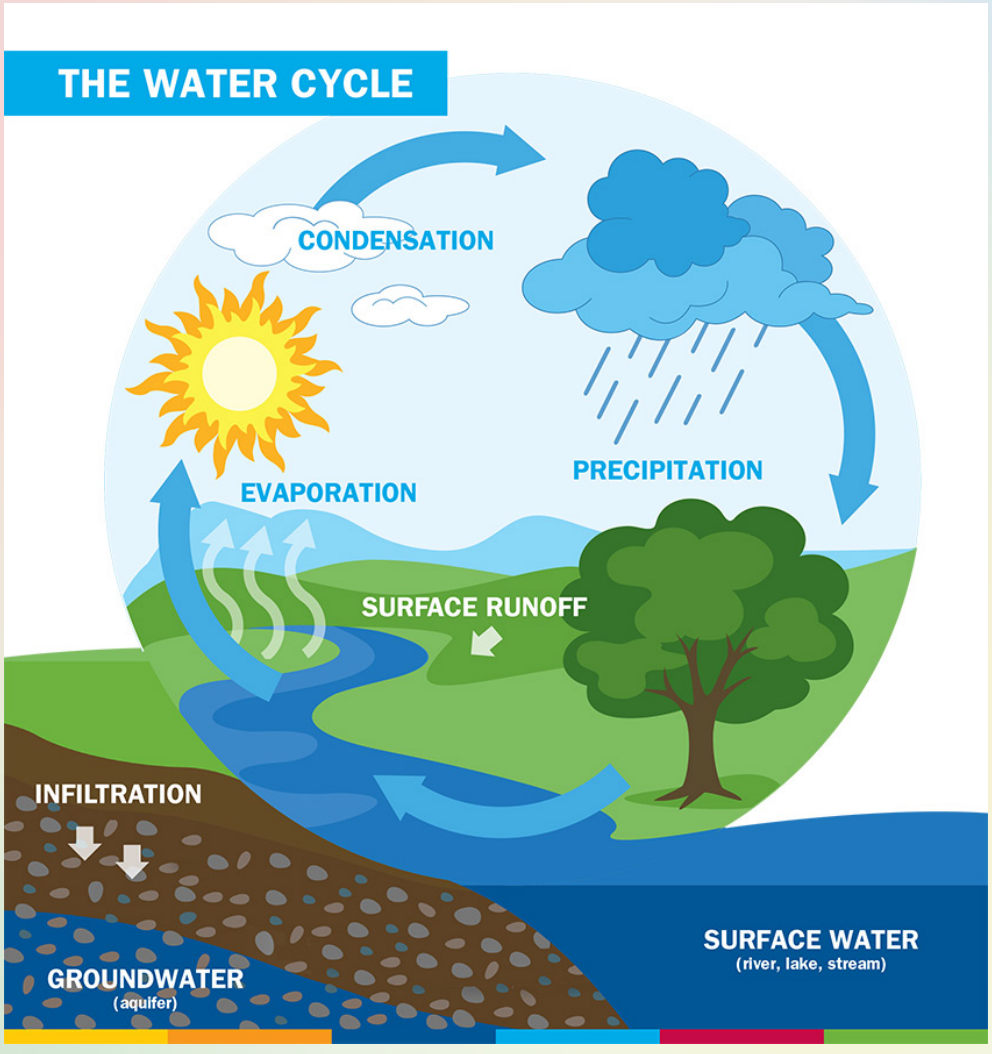
If a _____ is frozen it will turn into a _____, this is called freezing.

If a _____ is heated it will turn into water vapor which is a _____, this is called evaporation.

If a _____ is cooled down, it will turn back into a _____, this is called condensation.

The Water Cycle

Water on Earth is ALWAYS moving as it recycles and recycles constantly.



Forces and Motion

What is a force?
Forces are pushes and pulls in a particular direction. Forces are shown as arrows in diagrams; the bigger the arrow the bigger the force.

What is gravity? – is the force by which a planet or other body draws objects towards its centre. Gravity is all around us.

YOUR TURN – *Get a ball and drop it. That's a perfect way to see the gravitational force.*

What is friction? – is a force that holds back the movement of a sliding object.

YOUR TURN – *rub both of your hands together, that is creating friction and will make your hands warm.*

Try another – get a toy car and move it across the floor, again that's causing friction.

Forces and Motion

What is a magnetic force? - is a force that pulls material together.

YOUR TURN – *get a magnet and place it on something metal, this then will pull the metal and stick to it.*

Did you try the experiments? YES / NO

Did they work? YES / NO

Electricity

What is electricity?
Electric is created by generators which are powered by; gas, coal, oil, wind or solar.

Electricity is DANGEROUS, so do not mess around with electric appliances.

YOUR TASK: using the electric circuit symbols, draw your own complete circuit. Don't forget to label it too.


Bulb

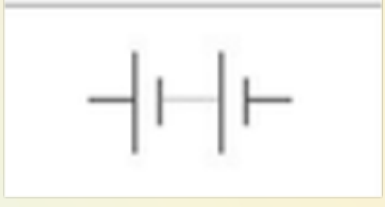
Motor


Buzzer

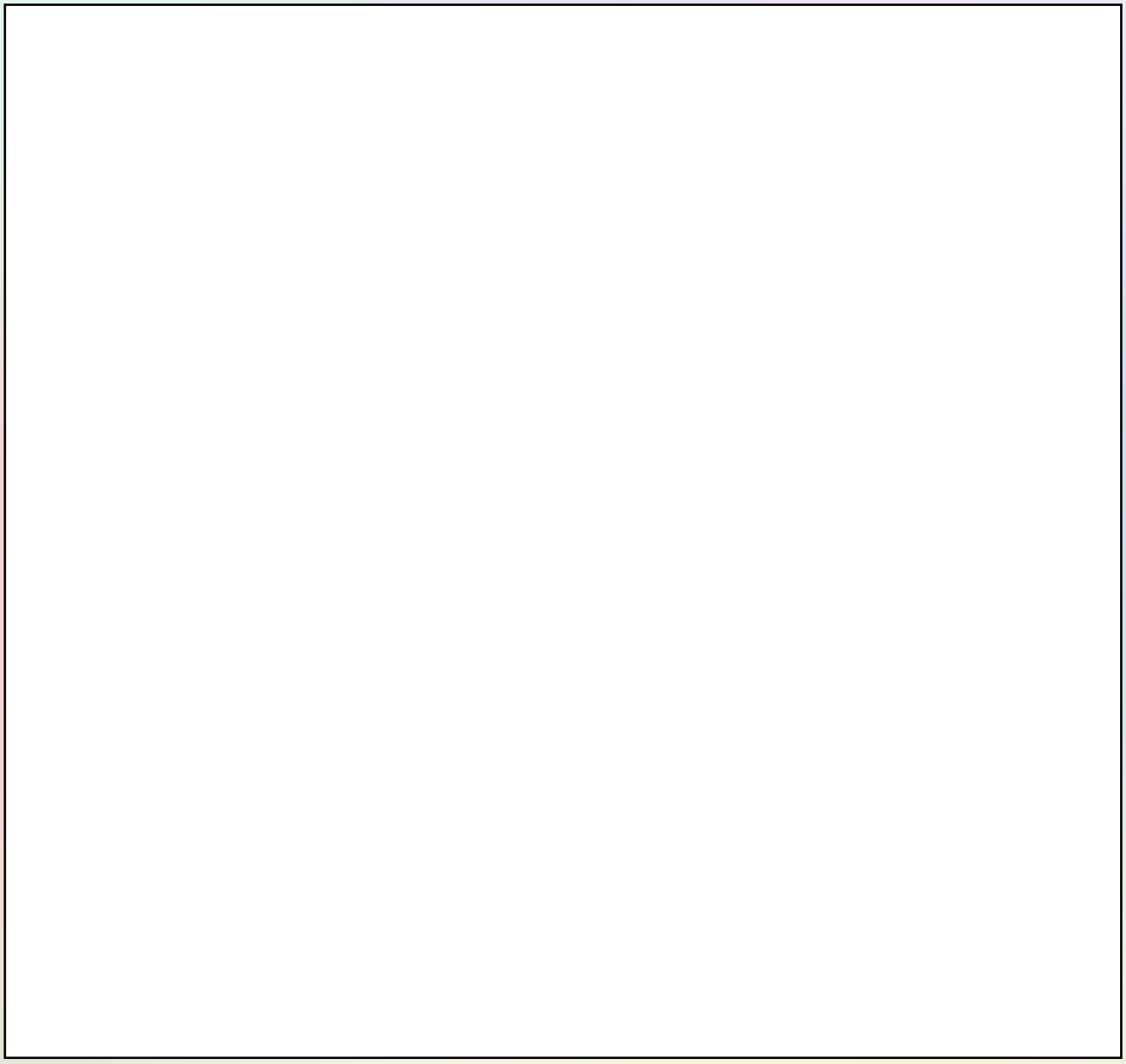

Wire


Switch


1 Battery


2 Batteries

Electricity: your own circuit



Light and Sound

What is a light source?

A source of light makes light, for example; the sun creates light.

YOUR TASK: fill in the gaps with the correct words.

straight	light	transparent	light
opaque	glass	source	translucent
shortest	shadow	longest	

Light travels in _____ lines from a _____ of light that bounces off an object. We can see the object because the _____ enters our eyes. Wood is an _____ material that light cannot travel through. _____ is a _____ material which allows light to pass through. Tissue paper is _____ which will let some light through.

When an object blocks out the _____, a _____ is formed. Shadows are _____ at midday and _____ at the beginning and end of the day.

Light and Sound

How are sounds made?

Sounds are made when objects vibrate. The air vibrations enter your ear and that's how you hear sound.

Pitch

The pitch of a sound is how high or low the sound is. A high sound has a high pitch and a low sound has a low pitch.

Space

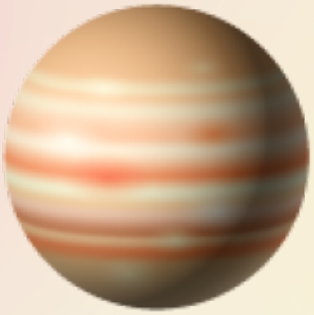
There are 8 planets in our solar system… can you name them?

M_____

V_____

E_____

M_____



J_____

S_____

U_____

N_____

VENUS
MERCURY
MARS
JUPITER
NEPTUNE
URANUS
EARTH
SATURN

Space: about Earth

Earth is around 4.5 billion years old.
Earth spins at 1000 miles per hour.
It takes 24 hours to complete a full rotation.
It's daytime on the side of the Earth that faces the sun and night-time on the side that is facing away.
The Earth takes a year to travel around the sun – hence the different seasons we get.

YOUR TASK: This is a fun task! On the next page your job is to create your very own planet!

Once you're done as a grown up to take a picture of it and upload it to our Hammy and Friends Facebook page for us to see!

YOUR PLANET

Planet's name _____

Experiments

You have worked really hard through this booklet, so it's time for some educational experiments – WHICH ARE LOTS OF FUN!

LAVA LAMPS

YOU WILL NEED:

Water
Vegetable Oil
A clear plastic bottle or jar
Food colouring
Effervescent tablets

METHOD:

1. Fill the bottle or jar a quarter full of water.
2. Top up, almost to the top with vegetable oil.
3. They should separate into two layers, water at the bottom and oil sitting on top.
4. Add about 6-8 drops of food colouring.
5. the colour will mix with the water at the bottom (DO NOT SHAKE)
6. Pop in half an effervescent tablet and watch the bubbles form. Add more effervescent tablets bit by bit to keep bubbles rising and falling.
7. Grab a torch and put the bottle under it to see it light up.

Experiments

FIREWORKS IN A GLASS

YOU WILL NEED:

Warm water
Oil
A tall glass
Food colouring

METHOD:

1. Fill the tall glass with warm water.
2. Pour a small amount of oil into another container and add a few drops of food colouring.
3. Give it a good stir, if it doesn't mix, add a bit of water.
4. Pour the food colouring and oil mixture into the warm water and watch the fireworks.

DO NOT DRINK THE WATER!

Create your own experiment

INSERT YOUR TITLE HERE

WHAT WILL YOU NEED?

YOUR METHOD

Once you've done, ask your grown up to send it to us on our Facebook page, so we can share it with everyone else.

Well done… you have completed your Science section and completed the whole booklet!

NOTE FOR PARENTS:

We would like to thank you for downloading this educational booklet for your child/children.

Please could you help us raise the attention for ALL parents to download this and use it too. You can do this by:

- sharing our Facebook post
- messaging your friends
- taking pictures of your children doing an activity and upload it to your Facebook and/or our page.

This booklet is FREE, but you can always donate via our website…
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Thank you so much.

