Year 3 & 4 English Knowledge Organiser

Spellings	
Root word	The word before prefixes and suffixes were added to chance meaning **e.g. happy/unhappiness.**
Common Exception Words	A word which can't be phonetically decoded.
Homophone	Two different words that sound exactly the same when pronounced but have different spelling**. E.g. here/hear**
Word family	Based on common words, showing how words are related in form and meaning. E.g. solve, solution, dissolve.
Compound Word	Two different words that sound exactly the same when pronounced but have different spelling. E.g. here and hear.

Reading	
Prediction	Saying what will happen next as a result of something.
Sequencing	Ordering events by how they appear in the text.
Decoding	Breaking a word down into different phonemes to help read it.
Retrieval	Finding information from a text.
Vocabulary	Understanding the meaning of words within texts.
Inference	Making assumptions about what is happening in a text from what you already know.
Summarising	Identifying the key moments in a text.

Grammar and Punctuation	
Paragraph	Used to organise ideas around a theme.
Standard form	Standard English – grammatically accurate verb forms used. **E.g. We were instead of we was.**
Inverted Commas	Used to punctuate direct speech – used around the part being spoken. **E.g. "Sit down!", shouted the driver.**
Clause	A group of words/part of a sentence, must contain a verb. **E.g. she answered the phone.**
Subordinate clause	Used to separate items in a list. **E.g. The fox was hungry, mean and sly.** **Used after a fronted adverbial.**
Comma	Clauses that begin with a relative pronoun - who, which, where, when, whose, that
Apostrophe	To mark where letters are missing. **E.g. can't, didn't (omission)** To mark singular possession in nouns**. E.g. the girl's book. (possession)** To mark plural possession in nouns. **E.g. the girls' books.**
Prefix	Can be added to the start of a verb, noun and adjective to change the meaning.

Suffix	Can be added to the end of a verb, noun and adjective to change the meaning.

Writing key concepts	
Coordination	Using the conjunctions **for, and, nor, but, or, yet and so.**
Subordination	Using the conjunctions **if, since, as, when, although, while, after, before, until and because.**
Preposition	Shows when or where something happened **e.g. before, after, during, in, under etc.**
Adverbial	Links ideas within and across paragraphs. Can be adverbials of time (e.g. later, in the morning), place (e.g. nearby, in the park) and number (e.g. firstly)
Pronoun	A word that takes place of a noun or a name **e.g. it, he, she** Possessive pronoun – words that demonstrate ownership **e.g. his, her, their**
Cohesion	Devices used such as **conjunctions, prepositions, adverbials and pronouns so a text flows and reads well.**
Heading/subheading	Presentation device to guide the reader in a non-fiction text.
Determiner	Used before a noun, a modifying word to determine the noun described. E.g. **an** apple, **this** apple, **her** apple, **some** apples, **three** apples.
Alliteration	Two or more words next to or close to each other in a sentence which start with the same sound or effect. **e.g. six sizzling sausages**
Simile	Comparing one thing to another using like or as. **E.g. As tall as a giraffe, it towered above the rooftops. His cheeks were red, like a ready to eat tomato.**
Metaphor	Comparing two things, saying one this is the for effect.
Tense	Past tense Describes what is happening **e.g. I play football, I am playing football** Present tense Describes what did happen **e.g. I played football, I was playing football** Present perfect describes a past event which is still taking place. **He has played for the team for four years.**
Cursive	The formation of letters to allow joined handwriting

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Art - Mosaics

Year 4 Knowledge Organiser

Key Facts

- Mosaics were used to decorate Roman buildings They were made from tiny stones which were called tesserae .
- Rich people had mosaic floors in their buildings. It was a symbol of how wealthy they were. Slaves would create the floors and use hard stones, sand and water to grind the stones down so they were smooth to walk on .
- Mosaics in Britain were made from cut red brick or tile. Occasionally, they might use bits of glass for a particular effect.
- Mosaics featured geometric designs, as well as other images. Common themes were animals, fighting gladiators, romantic images and scenes from mythology and astronomy.
- Some of the tiny stones were as small as 1- 2mm^2 for very intricate patterns and as many as 10 000 pieces of tesserae could be used in a mosaic measuring 1m x 1m .

Vocabulary

border	A strip forming the outer edge of something .
geometric design	A design made from rectangles, squares and circles.
hardie	A tool like a chisel, used to cut stones for mosaics.
mortar	A type of cement used to stick the tesserae to the floor.
mosaic	Pictures and patterns made from tiny pieces of coloured stone .
motif	A decorative image or design, especially a repeated one, forming a pattern.
tesserae	Tiny stones or tiles used to make a mosaic .

Key Skills

- Use sketch books to collect ideas and develop a plan for a piece of work.
- Use taught technical skills to adapt and improve work.
- Draw familiar objects with correct proportions.
- Create different effects by using a variety of tools and techniques.
- Develop control and use of materials through collage
- Describe key ideas, techniques and practises of artists,

Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 4.1
Coding

Key Learning

- To begin to understand selection in computer programming.
- To understand how an IF statement works.
- To understand how to use co-ordinates in computer programming.
- To understand the 'repeat until' command.
- To understand how an IF/ELSE statement works.
- To understand what a variable is in programming.
- To use a number variable.
- To create a playable game.

Key Resources

purple mash

Tools

2Dos


2Chart


Free code gibbon

Key Vocabulary

Action
The way that objects change when programmed to do so. For example, move.

Alert
This is a type of output. It shows a pop up of text on the screen.

Algorithm
A precise, step-by-step set of instructions used to solve a problem or achieve an objective.

Background
In 2Code the background is an image in the design that does not change.

Button
A type of object that responds to being clicked on.

Code blocks
A way to write code using blocks which each have an object or an action.

Command
A single instruction in 2Code.

Debug/Debugging
Fixing code that has errors so that the code will run the way it was designed to.

Design
In coding, this is a plan for the program showing the visual look of the user interface (the screen) with the objects. The algorithm can be represented as part of the design, showing actions and events.

Execute
This is the proper word for when you run the code. We say, 'the program (or code) executes.'

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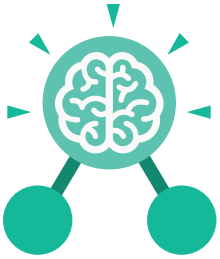


Unit: 4.1
Coding

Key Vocabulary

Event
An occurrence that causes a block of code to be run. The event could be the result of user action such as the user pressing a key (when Key) or clicking or swiping the screen (when Clicked, when Swiped). In 2Code, the event commands are used to create blocks of code that are run when events happen.

Nest
When coding commands are put inside other commands. These commands only run when the outer command runs.

Implement
When a design is turned into a program using coding.

Repeat until
In 2Code this command will repeat a block of commands until a condition is met.

Flowchart
A diagram that uses specifically shaped, labelled boxes and arrows to represent an algorithm as a diagram.

'If/Else' Statement
A conditional command. This tests a statement. If the condition is true, then the commands inside the 'if block' will be run. If the condition is not met, then the commands inside the 'else block' are run.

Object
Items in a program that can be given instructions to move or change in some way (action). In 2Code Gibbon, these include character, turtle, button, vehicle, animal, food, shape, number, input and label.

Predict
Use your understanding of a situation to say what will happen in the future or will be a consequence of something.

'If' Statement
A computer uses an IF statement to decide which bit of code to run. IF a condition is true, then the commands inside the block will be run.

Input
Information going into the computer. This could be the user moving or clicking the mouse, or the user entering characters on the keyboard. On tablets there are other forms such as finger swipes, touch gestures and tilting the device.

Prompt
A question or request asked in coding to obtain information from the user in order to select which code to run.

Repeat
This command can be used to make a block of commands run a set number of times or forever.

Run
Clicking the Play button to make the computer respond to the code.

Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 4.1
Coding

Key Vocabulary

Properties
These determine the look and size of an object. Each object has properties such as the image, scale and position of the object.

Selection
Selection is a decision command. When selection is used, a program will choose which bit of code to run depending on a condition.

Sequence
This is when a computer program runs commands in order.

Timer
In coding, use a timer command to run a block of commands after a timed delay or at regular intervals.

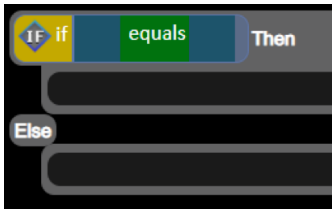
Variable
A named area in computer memory. A variable has a name and a value. The program can change this variable value. Variables are used in programming to keep track of things that can change while a program is running.

Key Images

Open design mode in 2Code.

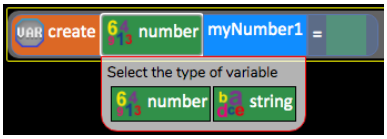
Switch to code mode in 2Code.

A change variable block.



An ‘if/Else’ command.

Repeat until.



Creating a variable in 2Code.

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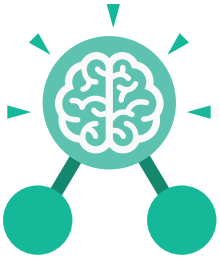


Unit: 4.1
Coding

Key Questions

Explain the stages of the design, code, test, debug coding process.

This is a process to go through as you create a program using coding

- Design: create a design which could be a flowchart, a labelled diagram or a storyboard. This helps to think through the algorithms required
- Code: code the algorithms using to code and adapting the design.
- Test and Debug: see if the program works and fix any errors.

How can variables and if/else statements be useful when coding programs with selection?

The variable could be set either to 0 or 1 and this could be changed by user action or a timer. If/else statement outcomes could depend upon the value of the variable. command for selection.

What does selection mean in coding and how can you achieve this in 2Code?

The code will contain commands that require a decision and the next code to run will depend upon the outcome of this decision. In 2Code we used the 'if' command for selection.

What is the difference between the different object types in 2Code Gibbon level?

The different objects have different properties. This makes then suitable for different type of programs.

- Buttons can only be clicked and have their colour and text changed.
- Vehicles have speed and angle.
- Characters have movement in 4 directions.
- Turtles have rotation, pen up and down.

Key Vocabulary

f = feminine m = masculine

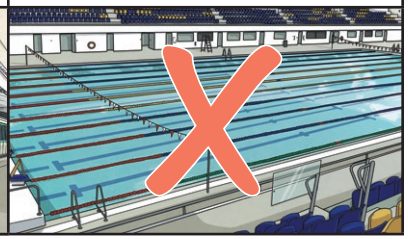
			
un magasin (m)	une école (f)	une église (f)	un musée (m)
			
un café (m)	une piscine (f)	une gare (f)	une pâtisserie (f)
			
une boulangerie (f)	un supermarché (m)	un cinéma (m)	un parc (m)
			
un théâtre (m)	un marché (m)	une mosquée (f)	une rivière (f)
une allée (f) a lane	**un boulevard (m)** a boulevard	**une avenue (f)** an avenue	**une place (f)** a square

Numbers

un 1	**quinze** 15	**soixante-dix** 70
deux 2	**seize** 16	**soixante-et-onze** 71
trois 3	**dix-sept** 17	**quatre-vingts** 80
quatre 4	**dix-huit** 18	**quatre-vingt-un** 81
cinq 5	**dix-neuf** 19	**quatre-vingt-dix** 90
six 6	**vingt** 20	**quatre-vingt-onze** 91
sept 7	**vingt-et-un** 21	**cent** 100
huit 8	**vingt-deux** 22	**plus** +
neuf 9	**trente** 30	**moins** -
dix 10	**trente-et-un** 31	**fois** ×
onze 11	**trente-deux** 32	**divisé par** ÷
douze 12	**quarante** 40	**zéro** 0
treize 13	**cinquante** 50	
quatorze 14	**soixante** 60	

Key Language in Context

Qu'est-ce qu'il y a dans ta ville ?
What is there in your town?

À Bordeaux, il y a une gare.	À Nantes, il n'y a pas de piscine.
	

Quelle est ton adresse ? What is your address?

Mon adresse est 23 rue de la Ferme, à Nice.

My address is 23 Farm Road, in Nice.

Key Knowledge and Grammar

Il y a means **there is** or **there are**. You can use it before a singular or plural noun:

- **Il y a un** parc/**une** gare. (There is a park/train station.)
- **Il y a des** magasins. (There are some shops.)

Il n'y a pas means **there isn't** or **there aren't**. You can use it before a singular or a plural noun (always introduced by '**de**'):

- **Il n'y a pas de** cinéma (there isn't a cinema).
- **Il n'y a pas de** magasins (there aren't any shops).

Note that **Il n'y a pas** is followed by '**de**' instead of **un/une/des**.

du/de la/de l'/des are used to say **of the** in addresses.

- Use **du** before a masculine noun, e.g. rue **du** Soleil (road of the Sun).
- Use **de la** before a feminine noun, e.g. allée **de la** Plage (lane of the Beach).
- Use **de l'** before a noun which starts with a vowel or the letter '**h**', e.g. boulevard **de l'** Hôpital (boulevard of the Hospital).
- Use **des** before a plural noun, e.g. place **des** Fleurs (square of the Flowers).

mon/ma (my) ton/ta (your) are **possessive adjectives** and they agree with the noun they go with.

- Use **mon** and **ton** with a masculine singular noun, e.g. **mon** père (**my** dad), **ton** frère (**your** brother).
- Use **ma** and **ta** with a feminine singular noun, e.g. **ma** ville (**my** town), **ta** ville (**your** town).

Exception: With a feminine noun that starts with a vowel or the letter '**h**', you must use **mon/ton** instead of **ma/ta**, e.g. **mon/ton** adresse (**my/your** address).

dans/à are **prepositions** meaning **in**.

- **Dans** means **in/inside**, e.g. **Dans** ma ville, il y a deux boulangeries. (**In** my town, there are two bakeries.)
- Before the name of a town/city, we use **à** to say **in**, e.g. J'habite **à** Paris.

Knowledge Organiser

Roman Invasions

753BC
Rome is founded by Romulus.

55BC
Emperor Augustus
Julius Caesar attempts to invade Britain for the first time.

54BC
Emperor Augustus
Julius Caesar attempts to invade Britain for the second time.

41AD
Emperor Claudius
Claudius successfully invades Britain.

50AD
Emperor Claudius
London is founded and known as Londinium.

60AD
Emperor Nero
Boudicca rebels against the Roman occupation of Britain.

192AD
Emperor Commodus
Great political unrest in Rome.

142AD
Emperor Pius
Antonius Pius builds the 'Antonine Wall'.

122AD
Emperor Hadrian
Building of Hadrian's Wall begins.

83AD
Emperior Domitian
Julius Agricola and his armies have captured a large area of Scotland.

208AD
Emperor Severus
Septimus Severus splits Britain into Britannia Superior and Inferior.

273AD
Emperor Aurelian
King Alfred negotiated with the Danes to divide England. This was called the Danelaw.

End of 3rd Century
Emperor Diocletian & Maximian
Saxons begin to invade Britain.

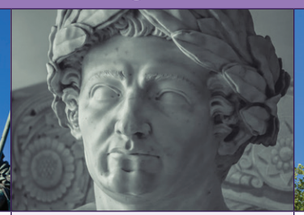
End of 4th Century
Emperor Honorius
Roman power over Western Europe begins to decline

410AD
Emperor Honorius
Honorius withdraws Roman armies from Britain.

Significant People and Places

Julius Caesar

Born in Rome itself, Caesar was a Roman politician, military general and historian who played a key role in the rise of the Roman Empire.

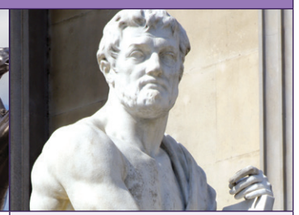


Emperor Claudius

Born in France, Claudius was a Roman Emperor who led the Roman conquest of Britain during his reign.

Boudicca

Queen of the British Iceni tribe who led an uprising against the occupying forces of the Roman Empire. The name 'Boudicca' is Celtic and means 'victory'.



Tacitus

A senator who is considered to be one of the greatest historians from Roman times. He documented much of Julius Agricola's conquest of Britain.

Glossary

1	**Atrebates**	a large tribe from southern Britain
2	**barracks**	a group of buildings where soldiers live and work
3	**Britannia**	the Roman name for the southern part of Great Britain
4	**Catuvellauni**	a tribe from southeastern Britain
5	**century**	a period of 100 years e.g. the 2nd century is from 100–199AD
6	**conquer**	when a country or group of take control of land and people
7	**decline**	when something becomes less in quantity, importance or strength
8	**emperor**	a man who rules an empire
9	**empire**	a group of nations that are controlled by the ruler of one country
10	**fort**	a strong building with a wall or fence around which is safe from enemies
11	**Gaul**	the Roman name for an ancient part of western Europe
12	**Iceni**	a tribe from eastern Britain
13	**invade**	to enter another country by force and with an army
14	**legion**	a large group of soldiers who form one part of an army
15	**legionary**	a solider who belongs to a legion
16	**rebel**	people who fight against their own country's army
17	**romans**	citizens who are from Ancient Rome
18	**Rome**	the capital of the Roman Empire
19	**Saxons**	members of a West Germanic tribe
20	**tribe**	a group of people who share a location, language and customs

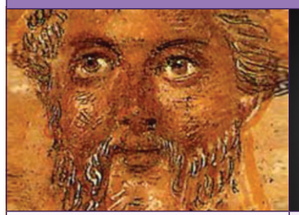
What was the Roman Empire?

The Roman Empire began in Rome and spread across most of Europe and some of Africa and Asia. Over a period of 400 years, most of Britain was part of this empire.

How were the Romans able to invade?

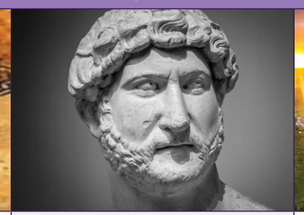
The Roman army was the largest fighting force of its time and was both strong and well organised. The fighters were the best equipped and strictly trained — this made them unstoppable.

Significant People and Places



Emperor Severus

Born in Libya, Severus was the first of the Severan dynasty. He tried to solve the problem of powerful and rebellious governors in Britain by splitting the province into two different parts.



Emperor Hadrian

Born in Italy, Hadrian was a Roman Emperor who is most famous for building 'Hadrian's Wall' in northern Britain.

Hadrian's Wall

A 73 mile wall built by the Romans in the north of what is now England to keep out the unconquered people of what is now Scotland. Parts of the wall are still visible today.

Vindolanda

A Roman fort built just to the south of Hadrian's Wall. It was under Roman occupation from around 85AD to 370AD. Some of the oldest surviving handwritten documents in Britain were discovered there.

Addition and Subtraction Knowledge Organiser

Key Vocabulary

- Add
- Total
- Plus
- Sum
- More
- Altogether
- Difference
- Subtract
- Less
- Minus
- Take away
- Mentally, Orally
- Column Addition
- Column Subtraction
- Exchange
- Estimate
- Inverse operation
- Solve problems
- Number facts

Addition and Subtraction Methods

Add 4-digit numbers

No exchange

```
 5162
+3427
------
 8589
```

Starting with the ones, add each column in turn.

One exchange

```
 5162
+3497
------
 8659
------
    1
```

Starting with the ones, add each column in turn. When adding
6 tens + 9 tens = 15 tens
= 1 hundred + 5 tens
Place 1 hundred under the hundreds answer and 5 tens in the answer.

Multiple exchanges

```
 5864
+3497
------
 9361
------
 1 1 1
```

Starting with the ones, add each column in turn. Exchange tens, hundreds and/ or thousands as required.

Subtract 4-digit numbers

No exchange

```
 5789
- 3421
------
 2368
```

Starting with the ones, subtract each column in turn.

One exchange

```
  6 1
 5749
- 3471
------
 2278
```

Starting with the ones, subtract each column in turn. When subtracting 4 tens -7 tens, exchange 1 hundred to make:
14 tens – 7 tens = 7 tens

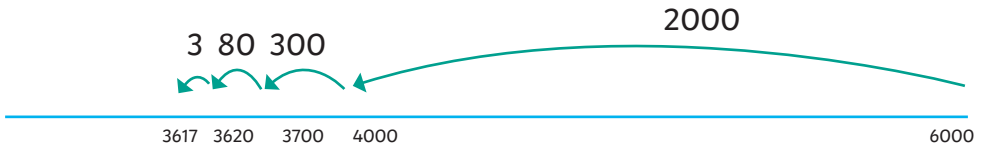
Multiple exchanges

```
 6131
 5742
- 3476
------
 2266
```

Starting with the ones, subtract each column in turn. Exchange tens, hundreds and/ or thousands as required.

Efficient subtraction

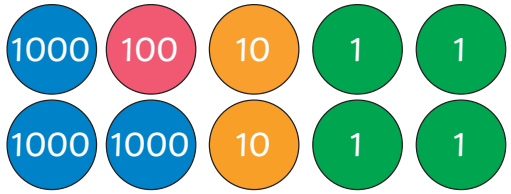
Calculate 6000 – 3617 = 2383



Addition and Subtraction Knowledge Organiser

Add and Subtract 1s, 10s, 100s, 1000s

Here is the number 3124



Add 2 thousands = 5124

Add 5 hundreds = 5624

Subtract 2 tens = 5604

Add 5 ones = 5609

Here is the number 6708

Thousands	Hundreds	Tens	Ones
6	7	0	8

Add 3 thousands = 9708

Subtract 4 hundreds = 9308

Add 5 tens = 9358

Subtract 7 ones = 9351

Crossing ones, tens or hundreds

5**39**2 + **4** tens = 5**43**2 crossing tens

5126 – **6**00 = **45**26 crossing hundreds

When crossing ones, tens or hundreds, more than one digit will change.

Round to Estimate

1635 + 386 = 2021

Round to the nearest ten

1640 + 390 = 2030

Round to the nearest hundred

1600 + 400 = 2000

Both give a reasonable estimate, but rounding the nearest ten is more accurate.

9362 – 5729 = 3622

Round to the nearest hundred

9400 – 5700 = 3700

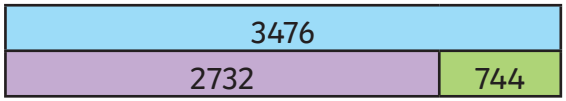
Round to the nearest thousand

9000 – 6000 = 3000

Rounding to the nearest hundred is much more accurate in this case.

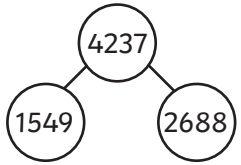
Checking Strategies

Using Inverse



3476 – 744 = 2732 can be checked using 2732 + 744 = 3476

This part whole shows the inverse calculations using these three numbers.



1549 + 2688 = 4237	2688 + 1549 = 4237
4237 – 1549 = 2688	4237 – 2688 = 1549

Adding in a different order

420 + 372 + 280 =

Change to

420 + 280 + 372 =

As 420 + 280 = 700

(because 42 + 28 = 70)

420 + 280 + 372 = 700 + 372 = 1072

Area and Perimeter — Knowledge Organiser

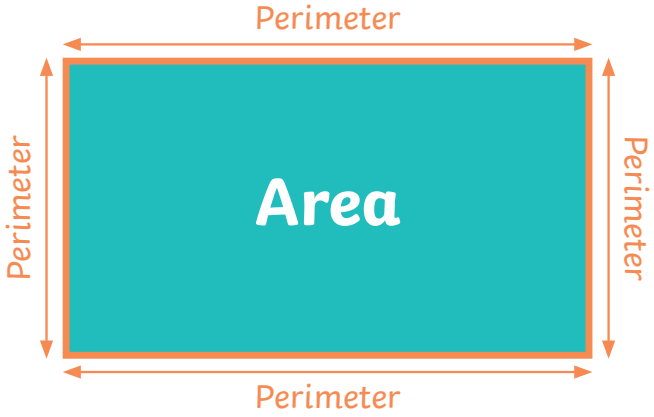
Keywords

- area
- perimeter
- centimetres
- metres
- squares
- distance
- millimetres
- kilometres
- length
- width
- rectilinear
- right angle

Area and Perimeter

Area is the amount of space inside a 2D shape.

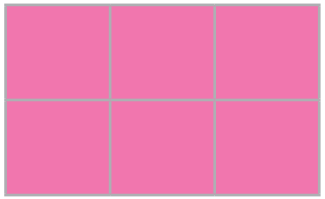
Perimeter is the total **distance** around the outside of a 2D shape.



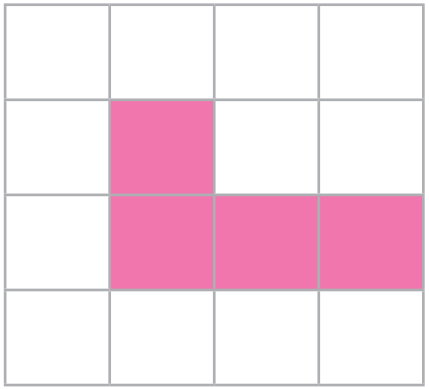
Measuring Area

We can count **squares** to find the **area** of a **rectilinear** shape.

Area = 1 square



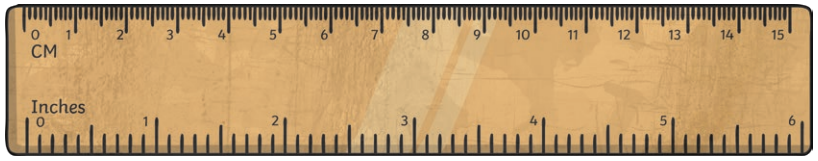
Area = 6 squares



Area = 4 squares

Units of Measure for Perimeter

km	1 **kilometre** = 1000 **metres**
m	1 **metre** = 100 **centimetres**
cm	1 **centimetre** = 10 **millimetres**
mm	



Rectilinear Figures

A **rectilinear** figure is a 2D shape whose sides all meet at **right angles** (90°).

Number and Place Value — Knowledge Organiser

Key Vocabulary

- thousands
- hundreds
- tens
- ones
- zero
- place value
- greater than
- less than
- order
- round
- rounded to
- negative number
- partition
- digit
- Roman numeral

Counting

Counting in 6s

0	6	12	18	24	30	36	42	48	54	60

Counting in 7s

0	7	14	21	28	35	42	49	56	63	70

Counting in 9s

0	9	18	27	36	45	54	63	72	81	90

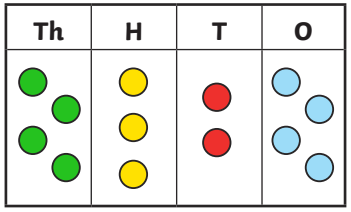
Counting in 25s

0	25	50	75	100	125	150	175	200	225	250

Counting in 1000s

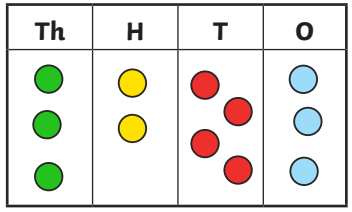
0	1000	2000	3000	4000	5000	6000	7000	8000	9000	10 000

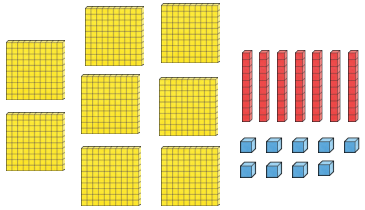
Compare and Order



4324 > 3243

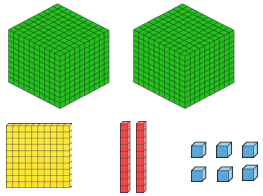
greater than





879 < 2126

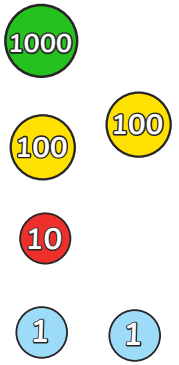
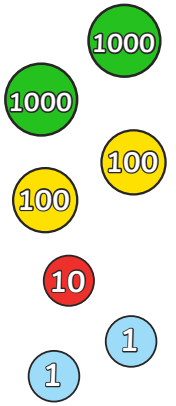
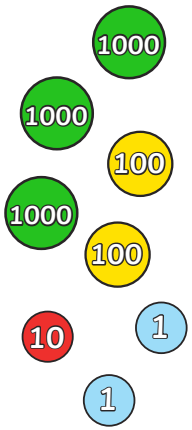
less than



2497	2508	3012	3521	3530	4002

smallest — greatest

1000 More or 1000 Less

1000 Less		1000 More
		
1212	**2212**	3212

Number and Place Value

Knowledge Organiser

Negative Numbers

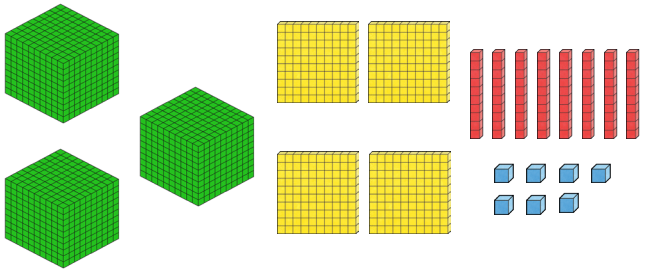
Represent 4-Digit Numbers

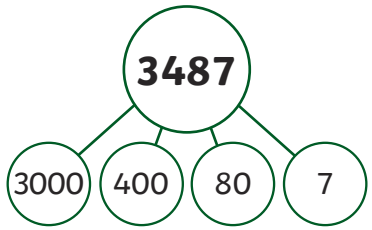
3487

three thousand, four hundred and eighty-seven

1000s	100s	10s	1s
III	IIII	𝍸 III	𝍸 II

Thousands	Hundreds	Tens	Ones
1000 1000 1000	100 100 100 100	10 10 10 10 10 10 10 10	1 1 1 1 1 1 1





Roman Numerals

one	1	I
five	5	V
ten	10	X
fifty	50	L
one hundred	100	C

XVIII = 18

XXIX = 29

LXXXIV = 84

Rounding

Look at the place value column to the right of the value you are rounding to. If this digit is a 4 or less, round down. If the digit is a 5 or more, round up.

Rounding to nearest 10

20	21	22	23	24	25	26	27	28	29	30

round down ← → round up

Rounding to the nearest 100

200	249	250	300

round down ← → round up

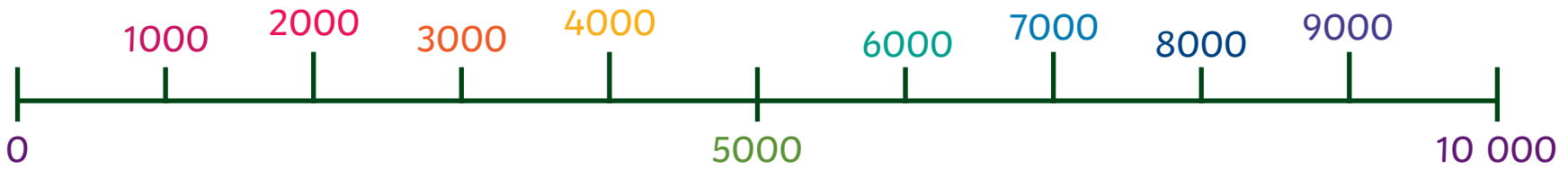
Rounding to the nearest 1000

2000	2499	2500	3000

round down ← → round up

twinkl

visit twinkl.com



RE Knowledge Organiser: Creation and the story of Abram

Vocabulary	
Bible	The Christian holy book.
Old Testament	The first part of the Bible, believed to be the sacred word of God.
New Testament	The second part of the Bible, which records the life and teachings of Jesus.
Ark	The ship built by Noah to save his family and two of every kind of animal from the Flood; Noah's Ark.
Covenant	An agreement.
Noah	Chosen by God, he, his family, two of every animal were saved from the Flood.
Abraham	Ordered by God to sacrifice his son, Isaac, as a test of faith.
Sacrifice	The act of slaughtering an animal or person or surrendering a possession as an offering to a deity/God.
Empathy	The ability to understand and share the feelings of another.
Descendants	A person, plant, or animal that is descended from a particular ancestor.
Marriage Vows	One of a set of promises made by two people when they get married.
Salvation	The act of being saved from harm, ruin, or loss.
Vulnerable	Exposed to the possibility of being attacked or harmed, either physically or emotionally.

Abraham was **the recipient of the first covenant with God**. Abraham was born in the city of Ur (located in the country now called Iraq) at a time when worshipping idols was common. God instructed Abraham to leave his home and travel to Canaan, the Promised Land. Canaan was an ancient country close to modern-day Israel.

Isaac was the son of Abraham and Sarah, the father of Jacob, and the grandfather of the twelve tribes of Israel. Isaac's name means "he will laugh", reflecting the laughter, in disbelief, of Abraham and Sarah, when told by God that they would have a child.

Joseph was **one of Jacob's 12 sons**. His father loved him more than any of the others and gave him a coloured cloak. His brothers were jealous of him and sold him into slavery.

Knowledge Organiser

Teeth and Digestion

What are teeth?

We have teeth because they help us to eat things. Our teeth are the hardest material in the human body and they cut, tear, crush and grind our food.

Our first teeth begin to grow when we are around 6 months old. The front teeth often appear first — we call our first set of teeth our 'milk teeth'.

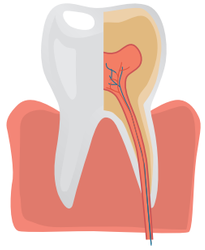
Adult teeth begin to grow when we are around 6 years old — after our other teeth have fallen out.

What are animal teeth like?

Animal teeth are different depending on whether an animal is a carnivore, herbivore or omnivore. This is because different types of teeth help you to eat different types of food.

What are our teeth made from?

Our teeth are made of pulp, dentine and enamel. The enamel is the white, outside layer of the tooth. The dentine is the soft, more yellow layer underneath and the pulp is where the nerves are found. The part of the tooth above the surface is the crown and the part found in the gum is the root.



What can happen to our teeth?

If we do not look after our teeth then they can become damaged or they can even fall out. We only have one set of adult teeth and so if we lose them, they will not grow back!

Food and bacteria can build up on our teeth if we do not clean them properly. We call this plaque. The bacteria in the plaque attacks our teeth — causing them to rot and turn black.

Types of Teeth

Incisors	Canines	Premolars	Molars
			
The incisors at the front of the mouth have a sharp biting surface and are used for cutting or shearing food into small chewable pieces.	The canines are on either side of the incisors. They have a sharp, pointed biting surface. Their function is to grip and tear food.	The premolars are towards the back of the mouth. Unlike incisors and canines, premolars have a flat biting surface. Their function is to tear and crush food.	The molars are at the back of the mouth. They are the largest of the teeth and have a large flat biting surface. The function of the molars is to chew, crush and grind food.

Glossary

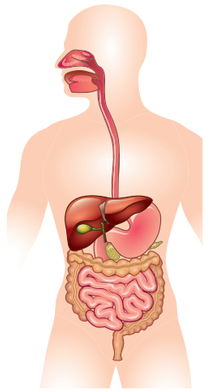
1	**anus**	where waste food leaves our body
2	**canine**	type of tooth shaped for gripping and tearing
3	**decay**	when something begins to rot away
4	**dentine**	the softer, more yellow layer of our teeth found under the enamel
5	**digestive system**	the system our body has for turning food into energy
6	**enamel**	the hard white coating on the outside of our teeth
7	**gall bladder**	stores bile from the liver
8	**incisor**	type of tooth shaped for cutting
9	**intestine**	includes the small and large intestines
10	**liver**	an organ which produces bile
11	**milk teeth**	a name sometimes given to the first set of human teeth
12	**molar**	type of tooth shaped for crushing, chewing and grinding
13	**oesophagus**	a long tube from our mouth to our stomach
14	**pancreas**	a gland found behind the stomach – it helps with digestion
15	**plaque**	a build-up of food, sugar and bacteria on our teeth
16	**premolar**	type of tooth shaped for crushing, tearing and grinding
17	**pulp**	the softest inner part of our teeth where the nerves are found
18	**rectum**	the final section of the large intestine
19	**stomach**	an organ which is part of the digestive system
20	**teeth**	a set of hard structures found in the mouth for chewing and biting

What happens when we eat?

When we eat, our food enters our digestive system.

The human digestive system includes many different organs that process our food — turning it into something our bodies can use and getting rid of what our bodies cannot use.

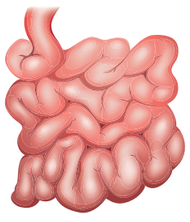
Without our digestive system, our bodies would not function and we would have no energy.



What journey does our food take through our digestive system?

Once food has been chewed and swallowed, it travels down the oesophagus and enters the stomach. The stomach breaks down our food. From the stomach, the food travels into the small intestine, where our body absorbs what it needs. Then the food travels onto the large intestine. The rectum and anus get rid of the food our bodies did not use.

What do some of our digestive organs look like?

Stomach	Liver	Small Intestine	Large Intestine
			
Food stays here for around four hours. Here the food is broken down into smaller pieces mixed into a paste. The acid in our stomach kills a lot of bad bacteria that could make us sick.	Food does not pass through or into our liver but the liver plays an important role in our digestive system. The liver produces bile which helps break up fat into smaller pieces.	In the small intestine, food is mixed with juices from the liver and pancreas. After this, the food is absorbed from the small intestine and around our body through our blood.	The last stage of the digestive system. Here, any of the food that our body cannot use or does not need is stored until it makes its way out of our body as waste.