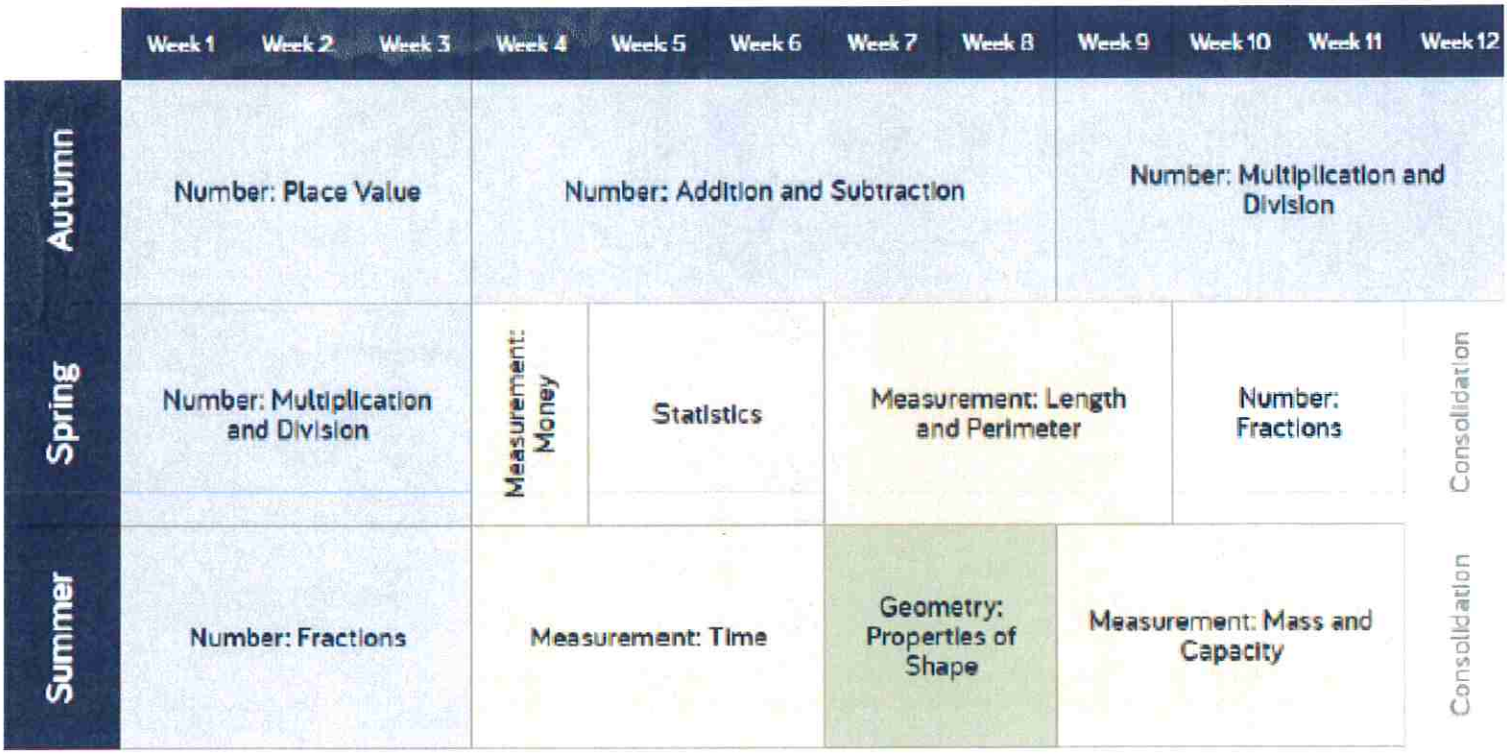
Crayland's School

Year 3 Learning Guide

Maths



Additional Downloads

Maths

By the end of the year.....

Mental calculation:

Count from 0 in multiples of 4, 8, 50 and 100
find 10 or 100 more or less than a given number.
Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
Count up and down in tenths
Add and subtract numbers mentally, including:
-a three-digit number and ones
-a three-digit number and tens
-a three-digit number and hundreds

Number and Place Value

Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
Compare and order numbers up to 1000
Identify, represent and estimate numbers using different representations
Read and write numbers up to 1000 in numerals and in words
Solve number problems and practical problems involving these ideas.

Addition and Subtraction

Add and subtract numbers with up to three digits, using formal written methods of column addition and subtraction
Estimate the answer to a calculation and use inverse operations to check answers
Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

Multiplication and Division

Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.
Solve problems, including missing number problems, involving multiplication and division of whole numbers and correspondence problems in which n objects are connected to m objects.

Fractions

Recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
Recognise, find and write fractions of a discrete set of objects unit fractions and non-unit fractions with small denominators.
Recognise and show, using diagrams, equivalent fractions with small denominators.
Add and subtract fractions with the same denominator within one whole
Compare and order unit fractions, and fractions with the same denominators
Solve problems that involve all of the above

Measurement

Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
Add and subtract amounts of money to give change, using both £ and p
Tell and write the time from an analogue clock, 12 hour and 24 hour clock
Tell and write the time on an analogue clock that uses Roman numerals from I to XII.
Estimate and read time to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock.

Geometry: Shapes, Position and Direction

recognise 3-D shapes in different orientations and describe them
Recognise that angles are a property of shape or a description of a turn
Identify right angles and link to ¼, ½, 3/4 turns; identify whether angles are greater than or less than a right angle
Identify horizontal and vertical lines

Statistics

Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.
Interpret and present data using bar charts, pictograms and tables.

Additional challenge for the end of the year.....

Mental calculation:

Derive and use addition and subtraction facts for multiples of 100 up to 1000, then 10 000
Derive and use doubles of all numbers to 100 and the corresponding halves
Derive and use doubles of all multiples of 50 to 500
Count on and back in ½, ¼ and 1/3

Number and Place Value

Recognise negative numbers and can position them on a number line.
Read and write numbers to 10,000
Partition numbers in different ways 145 =100+40 +5 and 130+15
Find the effect of multiplying or ÷ a one or two digit number by 10 or 100
Round numbers to at least 1000 to the nearest 10 or 100

Addition and Subtraction

Solve 2/3 digit addition and subtraction problems involving missing numbers
Describe and extend simple number sequences, starting from any one, two or three digit number. Which part repeats? Predict what comes next?

Multiplication and Division

Solve x/ ÷ problems using formal written methods-
Use simple function machines i.e. an input and/or an output within their number knowledge so they can determine the rule
e.g. (x5) Can you put into words what is happening here? Predict what would happen if we input these numbers.

Fractions

Compare and order numbers with two decimal places in the context of money or measures
Round decimal fractions up to 2 places to the nearest whole number/unit of measure.
I can compare and order numbers up to 100,000
Solve two step fraction problems.

Measurement

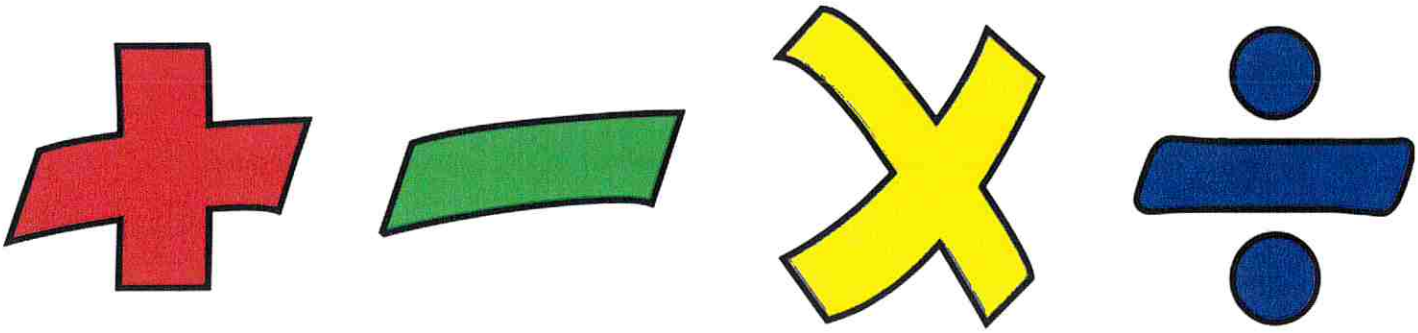
Measure the perimeter of simple 2-D shapes (from year 4)
Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24- hour clocks (from year 4 and 5)
Use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight

Geometry: Shapes, Position and Direction

Identify pairs of perpendicular and parallel lines
Describe positions on a grid labelled with letters and numbers
Plot specified points and complete shapes or pictures

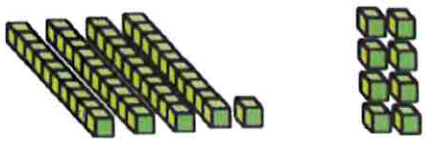
Statistics

Sort and compare numbers, shapes and objects on to sorting diagrams and interpret the results

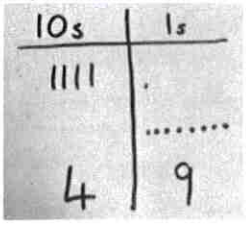


Addition

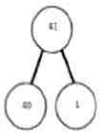
TO + O using base 10. Continue to develop understanding of partitioning and place value.
41 + 8



Children to represent the base 10 e.g. lines for tens and dot/crosses for ones.



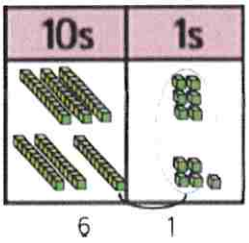
41 + 8



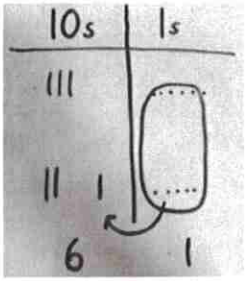
1 + 8 = 9
40 + 9 = 49

$$\begin{array}{r} 41 \\ +\ 8 \\ \hline 49 \end{array}$$

TO + TO using base 10. Continue to develop understanding of partitioning and place value.
36 + 25



Chidlren to represent the base 10 in a place value chart.



Looking for ways to make 10.

36 + 25 =

1 5

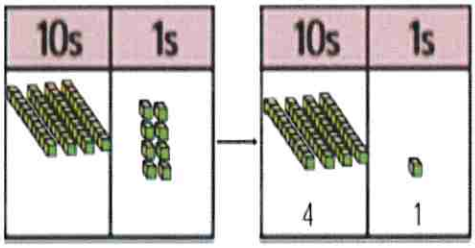
30 + 20 = 50
5 + 5 = 10
50 + 10 + 1 = 61

Formal method:

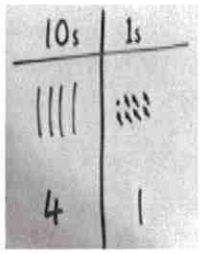
$$\begin{array}{r} 36 \\ +25 \\ \hline 61 \\ {\scriptstyle 1} \end{array}$$

Subtraction

Column method using base 10.
48-7



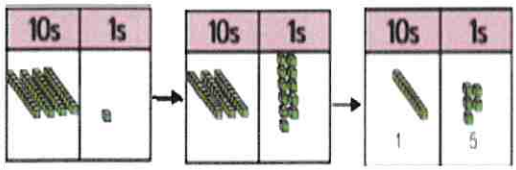
Children to represent the base 10 pictorially.



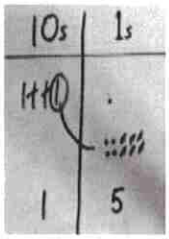
Column method or children could count back 7.

$$\begin{array}{r} 48 \\ -\ 7 \\ \hline 41 \end{array}$$

Column method using base 10 and having to exchange.
41 - 26



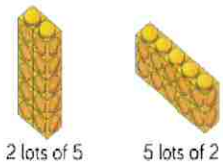
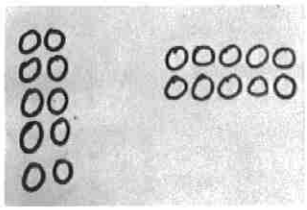
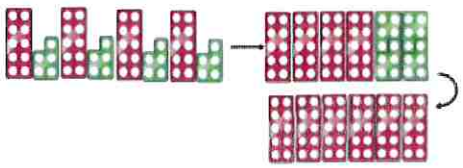
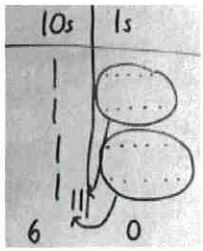
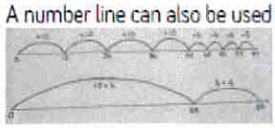
Represent the base 10 pictorially, remembering to show the exchange.



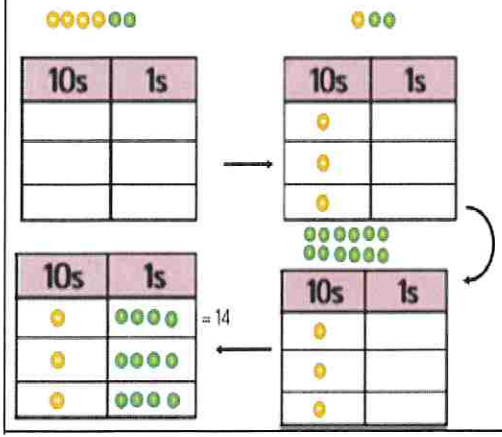
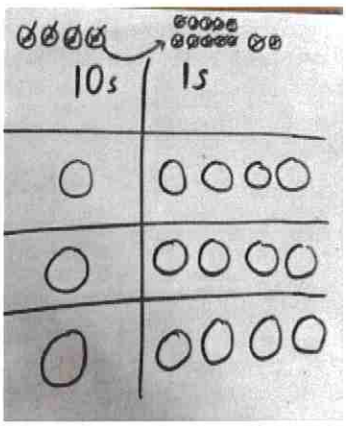
Formal column method. Children must understand that when they have exchanged the 10 they still have 41 because 41 = 30 + 11.

$$\begin{array}{r} {\scriptstyle 3}\not{4}\,{\scriptstyle 1}\not{1} \\ -\ 26 \\ \hline 15 \end{array}$$

Multiplication

Use arrays to illustrate commutativity counters and other objects can also be used. $2 \times 5 = 5 \times 2$  2 lots of 5 5 lots of 2	Children to represent the arrays pictorially. 	Children to be able to use an array to write a range of calculations e.g. $10 = 2 \times 5$ $5 \times 2 = 10$ $2 + 2 + 2 + 2 + 2 = 10$ $10 = 5 + 5$
Partition to multiply using Numicon, base 10 or Cuisenaire rods. 4×15 	Children to represent the concrete manipulatives pictorially. 	Children to be encouraged to show the steps they have taken.  $10 \times 4 = 40$ $5 \times 4 = 20$ $40 + 20 = 60$ A number line can also be used 

Division

Sharing using place value counters. $42 \div 3 = 14$ 	Children to represent the place value counters pictorially. 	Children to be able to make sense of the place value counters and write calculations to show the process. $42 \div 3$ $42 = 30 + 12$ $30 \div 3 = 10$ $12 \div 3 = 4$ $10 + 4 = 14$

Literacy

Texts year 3 are reading

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
A river  Fiction Description	The Abominables  Fiction	Ug the boy genius  Fiction	Stone age boy  Fiction	Who let the Gods out?  Fiction Narrative	Greek myths  Fiction Narrative (own quest story)
Rythmn of the rain  Non-Fiction Explanation (The water cycle)	Mountains of the world  Non-Fiction Information text (Mountains)	The secrets of Stonehenge  Non-fiction Persuasion (Promotional leaflet about Stonehenge)	Stone age Sentinsl  Non-fiction Newspaper report	Non-Fiction Information text (Greek Gods)	Non-fiction Explanation (how to catch a mythical creature)

Literacy; writing

By the end of the year.....

- Spell correctly a range of common homophones e.g. there/their, where/wear, hear/here, rain/reign/rein, peace/piece, which/witch
- Writing is legible— cursive style preferably
- Embed the use of apostrophe for contraction and singular nouns, introduce the apostrophe for plural possession.

Examples:

Contraction

Do not = don't we are = we're can not = can't would not = wouldn't

Possession

The boy's shirt was red.

The cat's purr was loud.

The girls' team won the match.

- Write to suit purpose, show most features of the genre being used.
- Create chronological narratives, write in sequence.

Examples:

Then, next, after a while, soon, before long, as the sun set, when the moon lit the sky...

- With scaffold, organise sections broadly within a theme.
- Use headings and sub headings to aid presentation.
- Describe characters setting and plot with some interesting detail.
- Express time, place and cause using conjunctions (when, before, after, while so, because)
- Demarcate most sentences correctly—using capital letters and full stops, ? !
- Identify and begin to use direct speech.

"Hello!" said the child.

"Good morning," responded the teacher.

- Usually use the past and present tense correctly. Sometimes use the past perfect (when you refer to an event that happened before the past event)

Example: Yesterday, I walked to the park—past tense

Mum had cleaned the clothes before I put them on—past perfect

Literacy; writing

For a challenge by the end of the year.....

- Spell correctly some words from the year 3-4 spelling list—see attached
- Write in a range of forms, show appropriate features of the genre.
- Use the apostrophe to mark singular and plural possession.

Example—plural possession

The boys' football team
The girls' basketball team
The children's toys
The lions' cages.

- Create chronological, well-formed narratives in a clear sequence.
- Organise sections logically within a theme, often independently.
- Describe characters, setting and plot with some expansion of detail.
- Use subordinating and coordinating conjunctions to join clauses.

Co-ordinate conjunctions—and, for, but, nor, yet, or, so
Subordinating conjunctions—although, if, as, because, since, unless, even though

- Demarcate all sentences correctly.
- Use inverted commas for direct speech.
- Use past and present tense correctly, mostly use the present perfect tense.

Example:

Yesterday, I walked to the park—past tense

Mum had cleaned the clothes before I put them on—past perfect

I run to the park—present tense

I have decided to buy the coat—present perfect

Literacy; reading

By the end of the year.....

- Read with fluency a range of age-appropriate text types.
- Read most common exception words by sight—see next page
- Use phonic skills consistently and automatically to address unfamiliar or challenging words.
- Begin to express their views about a wide range of texts.
- Begin to identify themes and conventions in a range of texts. Such as: 'journeys' or 'invasion'.
- Draw inferences and justify with evidence.
- Predict what might happen from details stated or implied.
- Explain the meaning of words in context, using a dictionary.
- Check the text makes sense, reading to the punctuation and re-reading if needed.
- Retrieve information from non-fiction books.
- Identify how language structure and presentation contribute to meaning.

A challenge for the end of the year.....

- Read with fluency and automaticity a range of age-appropriate text types.
- Read almost all familiar common exception words.
- Recognise the conventions of a legend or play.
- Recognise how a non-fiction book is presented to better inform the reader.
- Without prompting, draw inferences and justify with evidence.
- Provide credible evidence.
- Discuss and explain vocabulary that captures the readers' interest.

Year 3 common exception words

Word	R	W	Word	R	W	Word	R	W
accident			consider			group		
accidentally			continue			guard		
actual			decide			guide		
actually			describe			heard		
address			different			heart		
although			difficult			height		
answer			disappear			history		
appear			early			imagine		
arrive			earth			increase		
believe			eight			important		
bicycle			eighth			interest		
breath			enough			island		
build			exercise			knowledge		
busy			experience			learn		
business			extreme			length		
calendar			famous			library		
caught			favourite			material		
centre			February			medicine		
century			forward			mention		
certain			forwards			minute		
circle			fruit			natural		
complete			grammar			naughty		

Word	R	W	Word	R	W	Word	R	W
notice			regular					
occasion			reign					
occasionally			remember					
often			sentence					
opposite			separate					
ordinary			special					
particular			straight					
peculiar			strange					
perhaps			strength					
popular			suppose					
position			surprise					
possess			therefore					
possession			though					
possible			thought					
potatoes			through					
pressure			various					
probably			weight					
promise			woman					
purpose			women					
quarter								
question								
recent								

Word list – years 3 and 4

accident(ally)
actual(ly)
address
answer
appear
arrive
believe
bicycle
breath
breathe
build
busy/business
calendar
caught
centre
century
certain
circle
complete
consider
continue
decide
describe
different
difficult
disappear
early
earth
eight/eighth
enough
exercise
experience
experiment
extreme
famous
favourite
February
forward(s)
fruit
grammar
group
guard
guide
heard
heart
height
history
imagine
increase
important
interest
island
knowledge
learn
length
library
material
medicine
mention
minute
natural
naughty
notice
occasion(ally)
often
opposite
ordinary
particular
peculiar
perhaps
popular
position
possess(ion)
possible
potatoes
pressure
probably
promise
purpose
quarter
question
recent
regular
reign
remember
sentence
separate
special
straight
strange
strength
suppose
surprise
therefore
though/although
thought
through
various
weight
woman/women

YEAR: 3 Forces and magnets

Lenny's words to learn	
force	North pole
Newton	South pole
friction	plastic
magnet	wood
attract	rock
repel	water
magnetic	rubber
metal	paper
iron	sponge

Lenny's facts to learn
Objects move differently on different surfaces.
Magnetic force can act at a distance.
Magnets attract or repel each other.
Magnets attract iron.
Magnets have 2 poles.

YEAR: 3 Light

Lenny's words to learn	
light	sun
darkness	blocks
shadow	source
reflection	patterns
travels	surface
opaque	protect
translucent	formed
transparent	midday
reflects	sight

Lenny's facts to learn
Darkness is the absence of light.
Light is needed to see things.
Light from the sun can be dangerous.
Shadows are formed when a light source is blocked.
Shadows can change size.

YEAR: 3 Rocks

Lenny's words to learn	
rocks	sandy
soil	granite
igneous	slate
sedimentary	marble
fossil	chalk
minerals	limestone
clay	flint
silt	permeable
organic matter	quartz

Lenny's facts to learn
Fossils are formed when things that have lived are trapped within rock.
Soil is made from rocks and organic matter.
Sedimentary rocks are made when sand, mud and pebbles get laid down in layers.
Igneous rocks are made when magma cools and solidifies.
Rocks can be grouped on their appearance and properties.

YEAR: 3 Animals including humans

Lenny's words to learn	
animal	skull
human	spine
skeleton	heart
muscle	muscle
nutrition	bicep
diet	tricep
support	protein
protection	blood
movement	

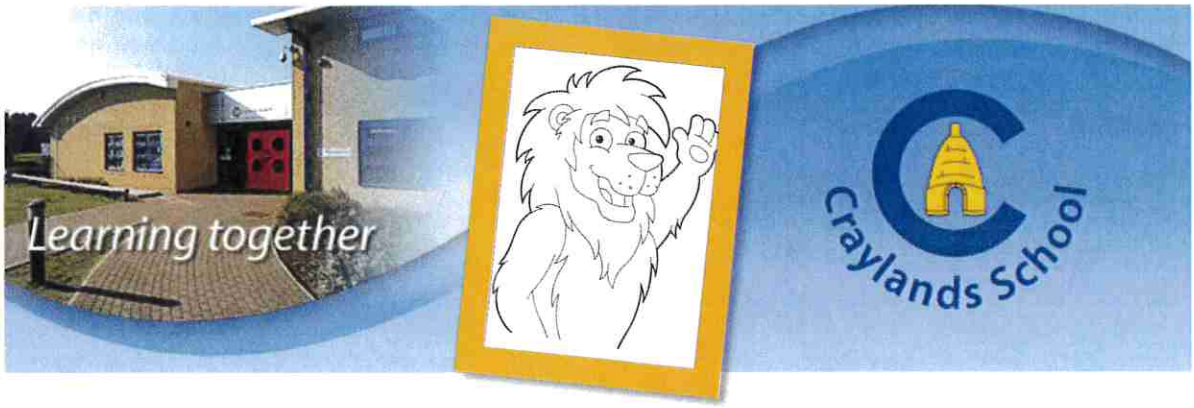
Lenny's facts to learn
A nutritionally balanced diet is important.
Nutrients, water and oxygen are transported within animals and humans.
I can identify main parts of a skeleton.
I know three functions of a skeleton.
I can describe muscular system of humans.

YEAR: 3 Plants

Lenny's words to learn	
root	filament
trunk	stigma
stem	ovary
flower	pollinate
leaf	germination
pollen	seed
petal	dispersal
stamen	pollination
anther	carpel

Lenny's facts to learn
I know what roots, stem, trunk, leaves and flowers do on a plant.
I know plants need light, water, nutrients and room to grow.
I know how water is transported within a plant.
I know what pollination is.
I know how flowers reproduce.

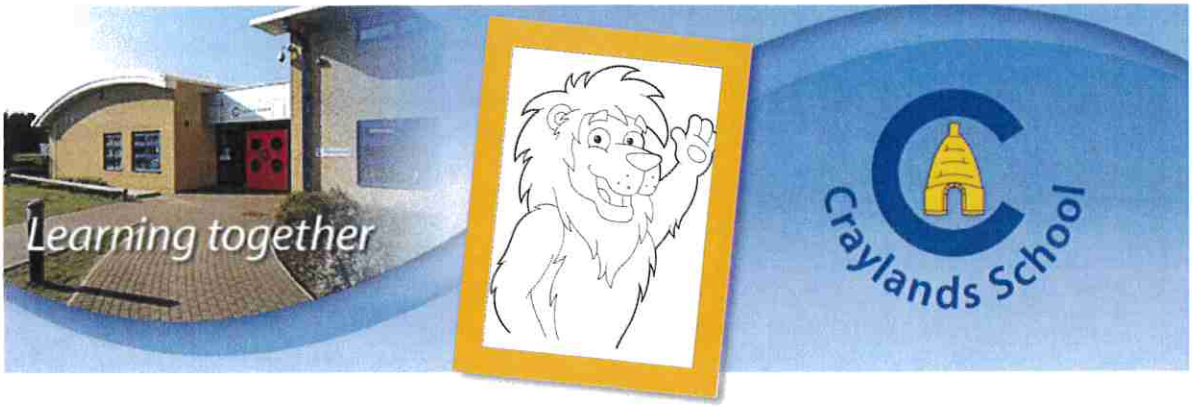
YEAR: 3 TOPIC: Rivers and mountains



Lenny's words to learn	
erosion	The destruction of land or buildings by wind, water or other natural elements.
sediment	Substances carried by water in a river which settles on the river bed e.g. sand, pebbles.
estuary	The mouth of the river; where the river meets the sea.
source	The place where the river or stream starts.
tributary	Where a river or stream flows into a larger river or lake.
delta	Land created by sediment deposited by a river; this occurs where a river enters the sea.
ascent	To go up.
mount peak	The top of a mountain.
summit	The highest point of a hill or mountain.

Lenny's facts to learn
A river is freshwater flowing across the surface of the land, usually to the sea.
All rivers start at the highest point in an area. As the river flows downstream, it gains more water from other streams, rivers, springs, added rainfall, and other water sources.
Rivers begin at their **source** in higher ground such as mountains or hills, where rain water or melting snow collects and forms tiny stream
A river has an upper course, middle course and lower course.
The **water cycle** is the path that all **water** follows as it moves around Earth in different states. Liquid **water** is found in oceans, rivers, lakes—and even underground.

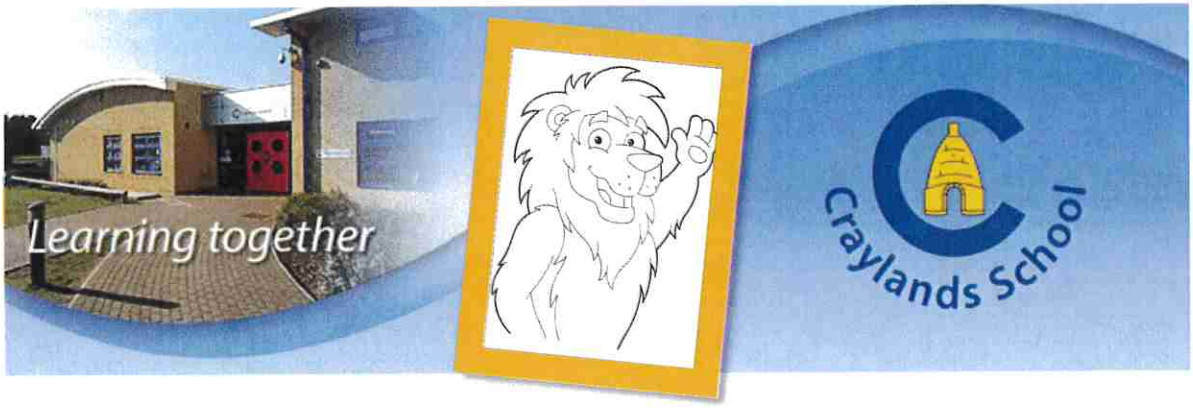
YEAR: 3 TOPIC: Mountains



Lenny's words to learn	
ascent	The journey up.
mount peak	The top of a mountain
summit	The highest points of a hill or mountain
tectonic plates	A large slab of rock that makes up the outermost part of the Earth.
magma	Molten rock
valley	A low area of land between two hills or mountains.
Mountain range	A series of mountains in a line.

Lenny's facts to learn
A mountain is a landform that rises high above the surrounding terrain in a limited area. They are made from rocks and earth. Generally, mountains are higher than 600 metres. Those less than 600 metres are called hills.
The Earth is made up of a core, mantle and crust; large masses of land known as tectonic plates make up the crust and upper mantle.
There are five basic kinds of mountains: Fold Mountains (Folded Mountains) Fault-block Mountains (Block Mountains) Dome Mountains Volcanic Mountains Plateau Mountains
The Himalayas are the highest mountain range in the world. The **Andes Mountains** form the longest mountain range in the world. Everest is the **highest mountain** in the world

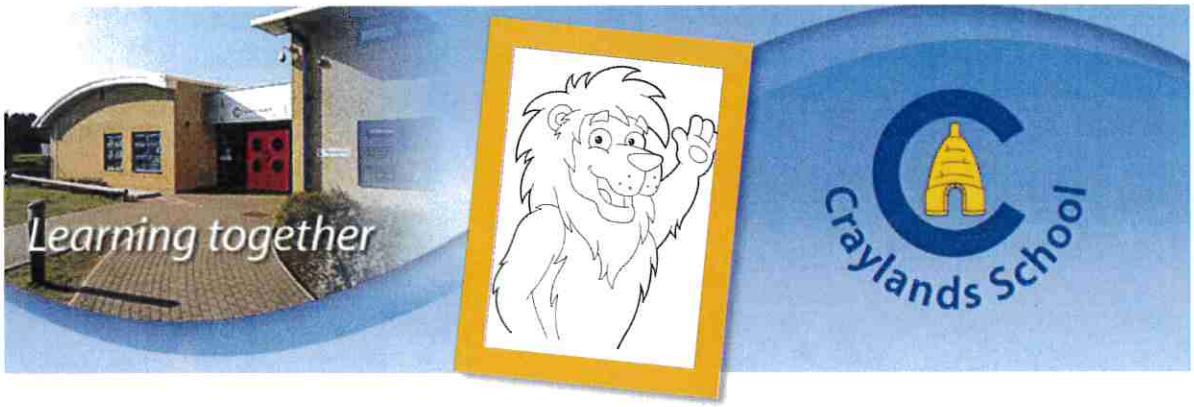
YEAR: 3 TOPIC: Neolithic Era



Lenny's words to learn	
Stone age	A prehistoric period when weapons and tools were made of stone or of organic materials such as bone, wood, or horn.
flint	A hard grey widely used historically to make stone tools and start fires.
Pre-history	The period of time before written records.
carbon dating	A method for determining the age of an object containing organic material.
hunter	A person or animal that hunts.
Homo-Sapians	The primate species to which modern humans belong.
fossil	the remains or impression of a prehistoric plant or animal embedded in rock and preserved.
archaeologist	A person who studies human history and prehistory through the excavation of sites and the analysis of artefacts and other physical remains.
palaeontologist	Science concerned with fossil animals and plants.
anthropologist	Anthropologists investigate the whole range of human development and behavior.
Neanderthal	An extinct species of human.

Lenny's facts to learn
The prehistoric period is divided into **three** 'ages'. They are known as the **Stone Age**, the **Bronze Age** and the **Iron Age**.
Archaeologists work like detectives looking for evidence. They use this evidence to build up a **picture of the past**.
The remains of homes and temples show how people lived and worshipped. Tools and weapons give clues about the way people worked and fought. Bumps and ridges in the landscape show the layout of ancient villages, fields and forts.
The earliest humans were **hunter-gatherers**. They survived by hunting animals and finding food to eat. Then, very gradually people learned new skills. First they learned to **herd animals** and **grow crops**. Later they discovered the secrets of making **bronze** and **iron**.

YEAR: 3 TOPIC: Ancient Greece



Lenny's words to learn	
Ancient	Very old
civilisations	A group of people with their own language and way of life.
Parthenon	The **Parthenon** is a temple in the middle of the Acropolis in Athens, Greece. It was a temple to Athena for nearly 2000 years and originally had a huge idol to her.
Empire	A group of people under one ruler.
tunic	a usually knee-length belted garment worn by ancient Greeks
slave	The practice. of people owning other people is called **slavery**. The owned people are called **slaves**. They have to work for the owners, doing whatever the owners ask them to do.
vase	A container usually for water or flowers.
Zeus	The king of the Greek Gods.
Olympus	The home of the Greek Gods.
democracy	In a **democracy** the people have a say in how the government is run. They do this by voting.

Lenny's facts to learn
The earliest Greek civilizations thrived nearly 4,000 years ago. The Ancient Greeks lived in Greece
The Ancient Greece empire spread over Europe as far as France in the East. The Greek Empire was most powerful between 2000 BC and 146 BC
Ancient Greece was split into many different states, each one was ruled in its own way. Each state had its own laws, government and money but they shared the same language and religion. The two most important city states were Athens and Sparta.
The Ancient Greeks believed in many different gods and goddesses. The Greeks believed that these gods and goddesses controlled everything in their lives and the environment. There was a god for every aspect of their lives.
We know much about the Ancient Greeks from objects which have survived for thousands of years. Archaeologists have dug up Ancient Greek artefacts and buildings.