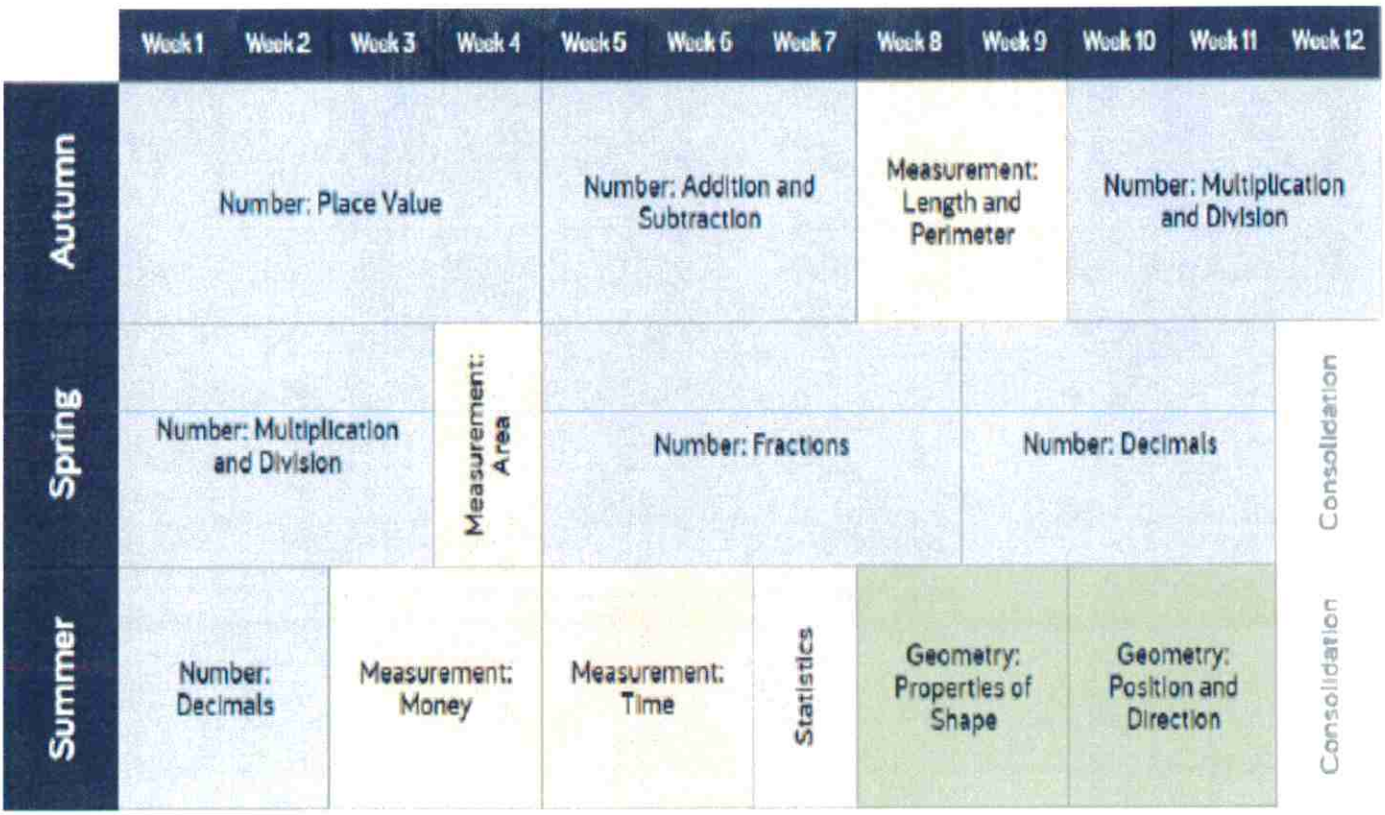
Crayland's School

Year 4 Learning Guide

Maths


Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
Week 9
Week 10
Week 11
Week 12
Autumn
Number: Place Value
Number: Addition and Subtraction
Measurement: Length and Perimeter
Number: Multiplication and Division
Spring
Number: Multiplication and Division
Measurement: Area
Number: Fractions
Number: Decimals
Consolidation
Summer
Number: Decimals
Measurement: Money
Measurement: Time
Statistics
Geometry: Properties of Shape
Geometry: Position and Direction
Consolidation

Maths

By the end of the year.....

Mental calculation:

Count in multiples of 6, 7, 9, 25 and 1000
Recall multiplication and division facts for multiplication tables up to 12 × 12
Find 1000 more or less than a given number
Count backwards through zero to include negative numbers
Round any number to the nearest 10, 100 or 1000
Round decimals with one decimal place to the nearest whole number.
Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.

Number and Place Value

Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, ones) *extend to 5 digit.*
Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value
Order and compare numbers beyond 1000
Identify, represent and estimate numbers using different representations
Solve number and practical problems that involve all of the above and with increasingly large positive numbers

Addition and Subtraction

Add and subtract numbers with up to 4 digits, using formal written methods of column addition and subtraction where appropriate.
Estimate the answer to a calculation and use inverse operations to check answers
Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

Multiplication and Division

Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout
Solve problems involving multiplying and dividing by one digit and harder correspondence problems such as n objects are connected to m objects

Fractions

Solve problems involving increasingly harder fractions, including non-unit fractions where the answer is whole.
Recognise and show, using diagrams, families of common equivalent fractions.
Recognise and write decimal equivalents of any number of tenths or hundredths
Recognise and write decimal equivalents to ¼, ½, ¾
Compare numbers with the same number of decimal places up to two decimal places

Measurement

Calculate the perimeter of a rectilinear figure (including squares) in cm/m. Find the area of rectilinear shapes by counting squares
Read, write and convert time between analogue and digital 12 and 24-hour clocks
Solve simple measure and money problems involving fractions and decimals to two decimal places & problems involving converting units of time.

Geometry: Shapes, Position and Direction

Compare, sort and classify geometric shapes.
Identify acute and obtuse angles and compare angles up to two right angles. Complete a simple symmetric figure with respect to a specific line of symmetry
Describe positions on a 2-D grid as coordinates in the first quadrant. plot points and connect to complete a polygon.

Statistics

Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts&time graphs.
Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

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
Count on or back in tens and hundreds from any number up to 10 000
Double numbers with up to two decimal places.
Half numbers with up to two decimal places.
Multiply or divide a 1 or 2 digit number by 10 or 100
Use partitioning to double or halve numbers , including decimals to one and two decimal places

Number and Place Value

Recognise negative numbers and can position them on a number line.
Understand place value of numbers up to 100,000
Partition numbers in different ways 145 =100+40 +5 and 130+15
Round numbers to 10 000 to the nearest 10 or 100

Addition and Subtraction

Describe and extend simple number sequences, starting from any 2,3 or 4 digit number. Which part repeats? Predict what comes next?
Use function machines
with an input and /or output and a rule that combines two operations e.g.(x 2+3)

Multiplication and Division

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.
Investigate how the Distributive Law can be used to multiply larger numbers: e.g. 6 x 18 is the same as 6x (10+8), or 6x (9+9).

Fractions

Solve measure and money problems involving fractions and decimals to two decimal places
Compare and order unit fractions, and fractions with the same denominators , *including on a number line*

Measurement

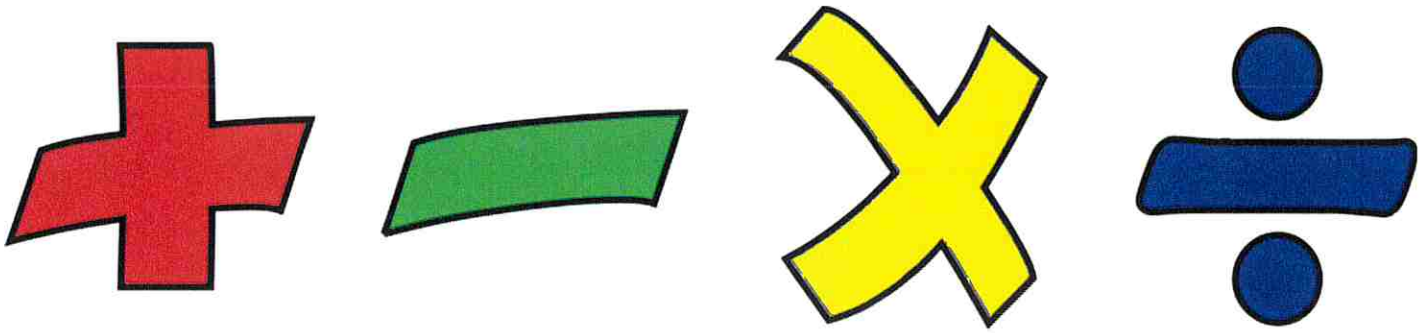
Order temperatures including those below 0 degrees centigrade
Find the area of rectilinear shapes using facts from known multiplication tables
Begin to use square centimetres (cm^2)
Solve complex measure problems.

Geometry: Shapes, Position and Direction

Continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines and begin to identify intersecting lines.

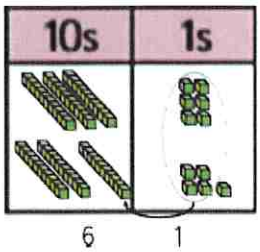
Statistics

Decide when to use the mode, median and range to describe a set of data.

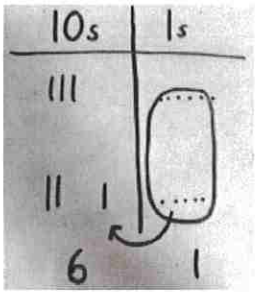


Addition

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 =

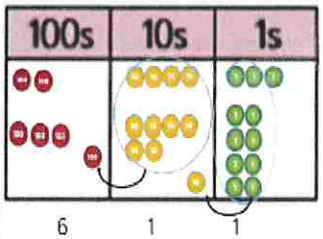
1 5

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

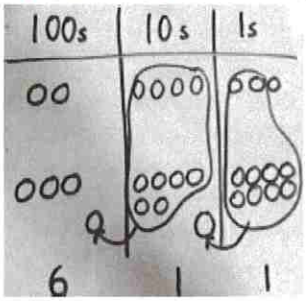
Formal method:

36
+25
61
1

Use of place value counters to add HTO + TO, HTO + HTO etc. When there are 10 ones in the 1s column- we exchange for 1 ten, when there are 10 tens in the 10s column- we exchange for 1 hundred.



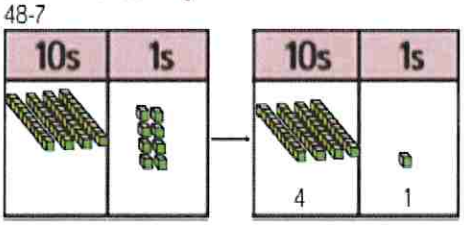
Chidren to represent the counters in a place value chart, circling when they make an exchange.



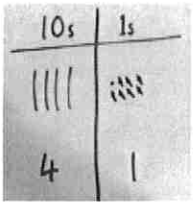
243
+368
611
1 1

Subtraction

Column method using base 10.
48-7



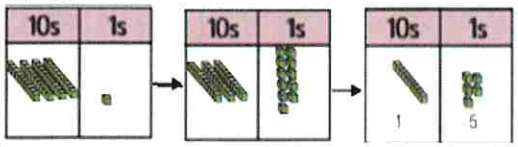
Children to represent the base 10 pictorially.



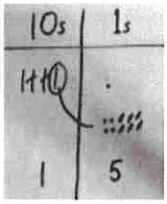
Column method or children could count back 7.

48
- 7
41

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



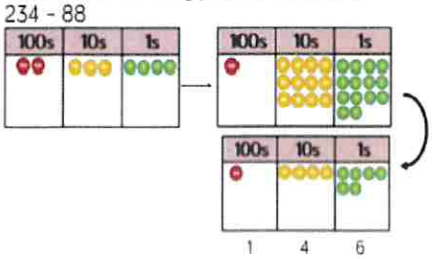
Represent the base 10 pictorially, remembering to show the exchange.



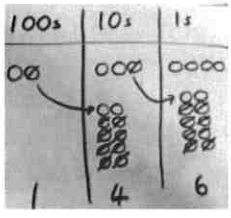
Formal column method. Children must understand that when they have exchanged the 10 they still have 41 because 41 = 30 + 11.

3 11
4 1
- 2 6
1 5

Column method using place value counters.
234 - 88



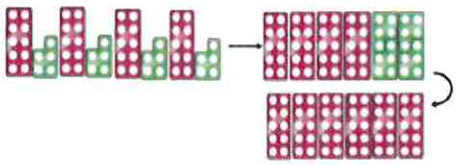
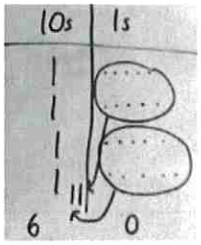
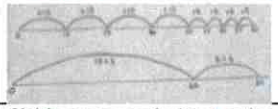
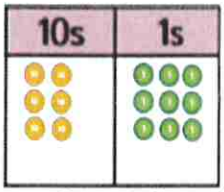
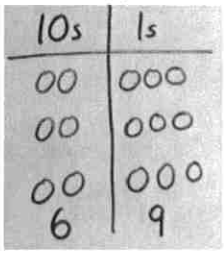
Represent the place value counters pictorially; remembering to show what has been exchanged.



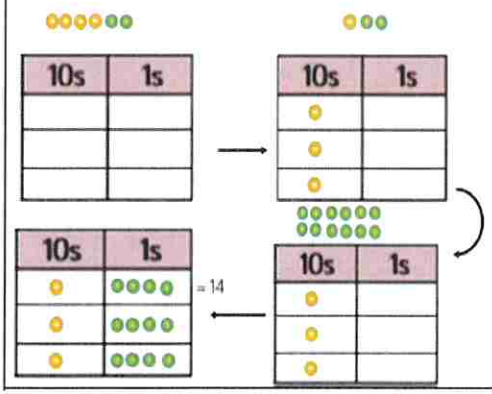
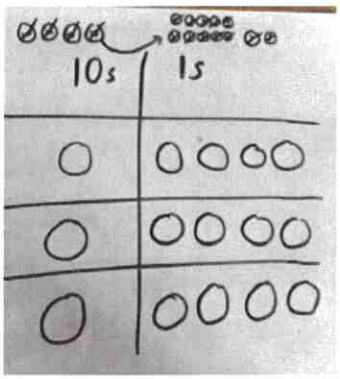
Formal colum method. Children must understand what has happened when they have crossed out digits.

2 1
2 3 4
- 8 8
6

Multiplication

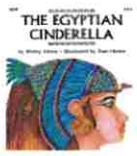
Partition to multiply using Numicon, base 10 or Cuisenaire rods. 4 × 15 	Children to represent the concrete manipulatives pictorially. 	Children to be encouraged to show the steps they have taken. 4 x 15 10 5 10 x 4 = 40 5 x 4 = 20 40 + 20 = 60 A number line can also be used 
Formal column method with place value counters (base 10 can also be used.) 3 × 23 	Children to represent the counters pictorially. 	Children to record what it is they are doing to show understanding. 3 × 23 20 3 3 × 20 = 60 3 × 3 = 9 60 + 9 = 69 23 × 3 69

Division

Sharing using place value counters. 42 ÷ 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 ÷ 3 42 = 30 + 12 30 ÷ 3 = 10 12 ÷ 3 = 4 10 + 4 = 14

Literacy

Texts year 4 are reading

Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Flood  Hurricane  Fiction Description	Escape from Pompeii  Fiction Diary	The Egyptian Cinderella  Fiction Narrative	Secrets of the Sun King  Fiction Diary	The theives of Ostia  Fiction Narrative	Tiger Tiger  Fiction Narrative
Earth Shattering Events  Non-Fiction Information text	Non-Fiction Newspaper Report	Non-Fiction Letters	So you think you got it bad  Non-fiction Explanation (Explain why it was difficult to be a child in ancient Egypt?)	Non-Fiction Discussion	Non-Fiction Non-Chronological

Literacy; writing

By the end of the year.....

- Spell most words from the YR 3-4 word list.
- Writing is legible and joined.
- Use the apostrophe to mark singular and plural possession, include irregular plurals.

Possession

Singular

The boy's shirt was red.

The cat's purr was loud.

The rat's cheese

Plural

The girls' football team

The children's coats

The men's uniform

- Describe characters, settings and plot, with some interesting details.
- Use dialogue, although balance between dialogue and narrative may be uneven.

"Hello!" said the child, as a smile crossed their face.

"Good morning," responded the teacher with a nod if his head.

- Organise writing into sections or paragraphs
- Write to suit purpose and with a growing awareness of audience, using some appropriate features
- Experiment with sentences with more than one clause.

Examples:

It was raining outside, however the children continued to play.

Although it was snowing, he refused to wear his gloves.

- Use expanded noun phrases and adverbial phrases to expand sentences.

Examples:

The old, wooden bookcase which was full of books—expanded noun phrase

Early in the morning, as the sun was rising—adverbial phrase

- Use sentence demarcation with accuracy e.g. capital letters, full stops, ? !
- Use inverted commas accurately for direct speech.

"Hello!" said the child, as a smile crossed their face.

"Good morning," responded the teacher with a nod if his head.

- Usually use the past or present tense, and 1st/3rd person, consistently.

Example:

1st—I, me, us, we, our 3rd person—he, she, it, they, them

Literacy; writing

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

- Spell accurately all words from the YR 3-4 statutory word list and some from the year 5 and 6 list.
- Writing is legible and fluent.
- Organise writing into meaningful paragraphs.
- Use dialogue to show character and to advance the action. Balance dialogue with narrative.
- Describe characters, settings and plot, with sufficient detail to capture the reader's interest.
- Use Standard English forms for verb inflections instead of local spoken forms.

Example:
We did everything we could instead of we done everything we could.

The shoes were broken instead of the shoes was broken.

- Write a range of sentence types which are grammatically accurate, including sentences with more than one clause.

Example:

Whilst the moon dance across the sky, the mouse scuttled quickly along the dark floor, so that it could not be seen by the deadly cat lurking nearby.

Literacy; reading

By the end of the year.....

- Fully engage with and enjoy a wide range of texts.
- Express their views about a wide range of texts.
- Become increasingly more confident at identifying themes and conventions with in texts.
- Draw inferences and justify with evidence. Draw comparisons.
- Predict what might credibly happen.
- Explain the meaning of words in context.
- Check the text makes sense, reading to the punctuation and habitually re-reading.
- Explain and discuss their understanding of the text.
- Identify and summarise main ideas drawn from more than one paragraph.
- Identify how language, structure and presentation contribute to meaning.

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

- Listen to, discuss, express and justify views about a wide range of texts.
- Evaluate and review different books.
- Without prompting, draw inferences.
- Provide credible and insightful predictions.
- Provide explanations which show their high level of understanding of the text.
- Confidently identify and summarise main ideas drawn from more than one paragraph.
- Discuss and precisely 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

Word list – years 5 and 6

accommodate
accompany
according
achieve
aggressive
amateur
ancient
apparent
appreciate
attached
available
average
awkward
bargain
bruise
category
cemetery
committee
communicate
community
competition
conscience*
conscious*
controversy
convenience
correspond
criticise (critic + ise)
curiosity
definite
desperate
determined
develop
dictionary
disastrous
embarrass
environment
equip (–ped, –ment)
especially
exaggerate
excellent
existence
explanation
familiar
foreign
forty
frequently
government
guarantee
harass
hindrance
identity
immediate(ly)
individual
interfere
interrupt
language
leisure
lightning
marvellous
mischievous
muscle
necessary
neighbour
nuisance
occupy
occur
opportunity
parliament
persuade
physical
prejudice
privilege
profession
programme
pronunciation
queue
recognise
recommend
relevant
restaurant
rhyme
rhythm
sacrifice
secretary
shoulder
signature
sincere(ly)
soldier
stomach
sufficient
suggest
symbol
system
temperature
thorough
twelfth
variety
vegetable
vehicle
yacht

YEAR: 4 Sound

Lenny's words to learn	
vibration	lower
ear	instrument
sound	canal
pitch	fluid
pattern	damage
source	quiet
louder	vibrate
quieter	blow
higher	rattle

Lenny's facts to learn
Sounds are made by vibrations
Vibrations from sound travel to the ear
The stronger the vibration the louder the sound
Pitch is how high or low a sound is
Sound gets fainter the further away you are from the source

YEAR: 4 States of matter

Lenny's words to learn	
material	Celsius
matter	evaporation
solid	condensation
liquid	water
gas	cycle
molecules	rain
state	droplets
temperature	heated
degrees	cooled

Lenny's facts to learn
I can group solids, liquids and gases
I can explain what happens when materials are heated or cooled
I can measure temperature
I know temperature is measured in degrees Celsius
I can describe the water cycle

YEAR: 4 Electricity

Lenny's words to learn	
electricity	appliance
electric	lamp
circuit	close
cells	open
battery	conductor
mains	insulator
switch	metals
bulb	connect
buzzer	wire

Lenny's facts to learn
I can name appliances that run off electricity
I can create a circuit
I can name the parts in a circuit
I know a switch opens or closes a circuit
I know metals are good conductors

YEAR: 4 Animals including humans

Lenny's words to learn	
digestion	canine
system	premolar
human	molar
oesophagus	food chain
stomach	producer
acid	consumer
intestine	predator
teeth	prey
incisor	protein

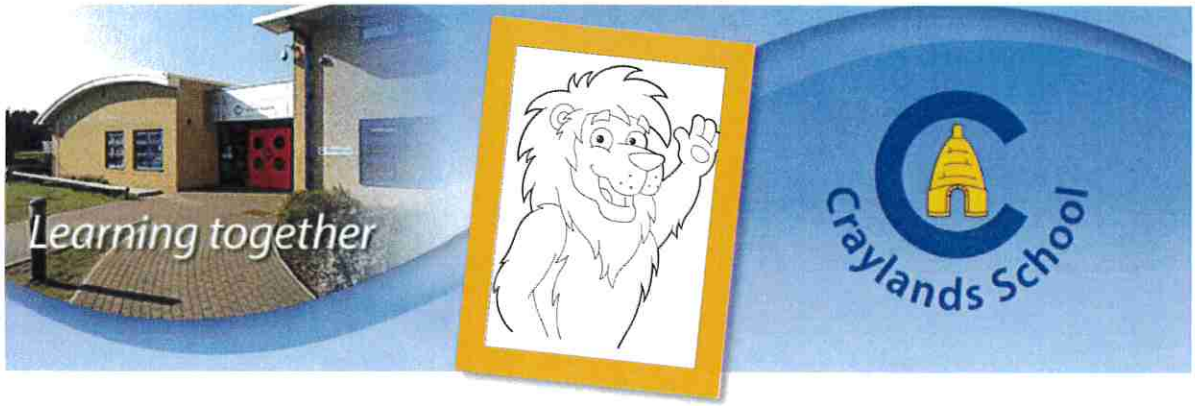
Lenny's facts to learn
I know which teeth cut, tear and chew your food
I know how food is digested in the stomach
I know why herbivores and carnivores have teeth that are different to each other
I can describe what a food chain is
I can create a food chain

YEAR: 4 Living things and their habitats

Lenny's words to learn	
habitat	organism
microhabitat	tree
pond	plant
meadow	animal
log pile	deciduous
woodland	evergreen
river	mammal
lake	reptile
cliff	amphibian

Lenny's facts to learn
I know that living things can be grouped in different ways
I can name living things that are mammals, birds, fish, insects, reptiles and amphibians
I can use a classification key
I can create a classification key
I know that changing environments can be a danger to living things

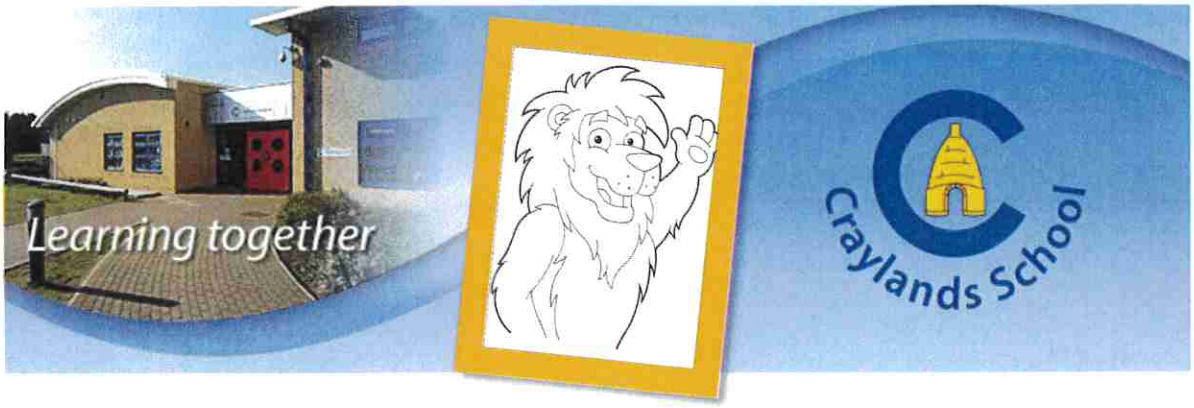
YEAR: 4 TOPIC: Nasty Natural Disasters



Lenny's words to learn	
crust	The crust is the outermost solid shell of Earth
tectonic plates	The Earth's crust is made up of these; large slabs that move over a liquid mantle.
Mantle	The rocky layer under the crust.
Magma	Hot liquid below the Earth's crust from which lava is formed.
Tremor	Movement of the Earth before an earthquake.
lava	Hot molten rock erupted from a volcano.
eruption	Gases and rock shoot up through the opening of a volcano and spill over or fill the air with lava fragments.
dormant	When a volcano has not erupted for a long time.
Equator	The imaginary line around the centre of the world where the climate is hottest.
natural resources	Materials we use from nature to make things we need including energy.

Lenny's facts to learn
A **natural disaster** is a major event caused by **natural** processes of the Earth; examples include floods, hurricanes, tornadoes, volcanic eruptions, earthquakes and tsunamis.
The Earth is made up of a core, mantle and crust; the movement of tectonic plates are the cause of natural disasters including volcanoes erupting, earthquakes and tsunamis.
To help locate where a place is in the world, people use imaginary lines called **latitude** and **longitude**.
North America is hit by tornadoes and hurricanes each year; in 1906 San Franciso was hit by a powerful earthquake.
There are **23 countries in North America**; Canada is the largest of the countries.

YEAR: 4 TOPIC: Ancient Egypt



Lenny's words to learn	
Ancient	Belonging to the very distant past and no longer in existence.
Egyptians	A person who lived or now lives in Egypt.
pharaohs	A ruler in ancient Egypt.
pyramid	A structure with a square or triangular base and sloping sides that meet in a point at the top, especially one built of stone as a royal tomb in ancient Egypt.
canopic jars	A covered urn used in ancient Egyptian burials to hold the entrails and other organs from an embalmed body.
Nile	The river that runs through Egypt.
Afterlife	Life after death.
Rosetta Stone	A stone with writing on found near Rosetta on the western mouth of the Nile in Egypt in 1799. Its text is written in three scripts: hieroglyphic, demotic, and Greek. It led to the interpretation of many other early records of Egyptian civilization.
hieroglyphics	A picture of an object representing a word, syllable, or sound, as found in ancient Egyptian.

Lenny's facts to learn

The civilization of Ancient Egypt was located along the Nile River in northeast Africa. The Nile was the source of much of the Ancient Egypt's wealth.

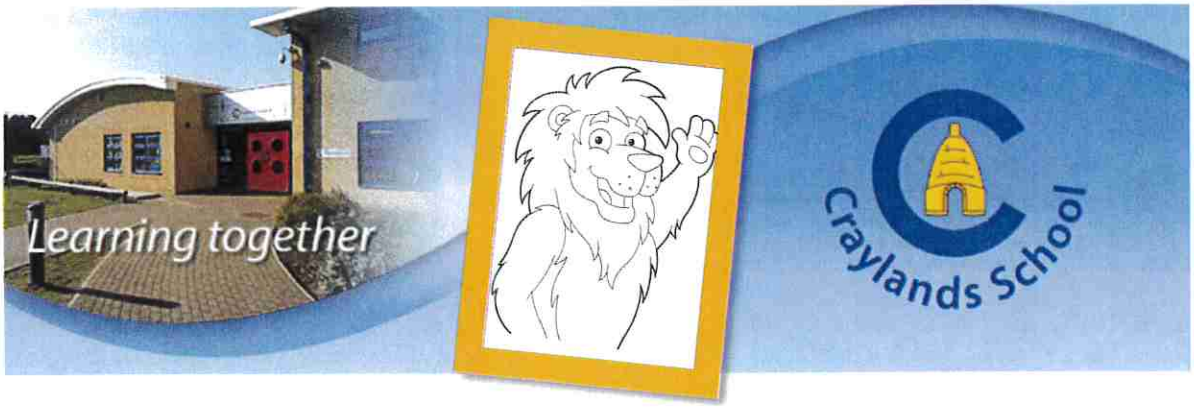
The Nile provided food, soil, water, and transportation for the Egyptians. Great floods would come each year and would provide fertile soil for growing food.

The Pharaohs of Egypt were often buried in giant pyramids or in secret tombs. They believed that they needed treasure to be buried with them to help them in the afterlife.

There were over 2,000 names of gods in Ancient Egypt.
Some images of Ancient Egyptian gods and goddesses show them with a human body and the head of a bird or an animal. Animals were chosen to represent the powers of the god.

They were one of the first civilizations to invent writing. They also used ink to write and paper called papyrus.

YEAR: 4 TOPIC: Romans



Lenny's words to learn	
Romans	People who came from Rome, in Italy. They invaded Britain 2000 years ago.
centurion	A Roman army officer commanding 100 Roman soldiers.
Emperor	A man who rules an Empire.
gladiator	A professional fighter in Ancient Rome.
democracy	In a **democracy** the people have a say in how the government is run. They do this by voting.
mosaic	A decoration on a surface made by setting small pieces of glass, stone, or tile of different colors into another material to make patterns or pictures
Republic	A form of government in which the people elect, or choose, their leaders.
Senate	**Roman senate** was a governing body of prominent members of **Roman** society.
toga	The loose outer garment worn in public by citizens of ancient Rome
Celts	All of the people who lived in Britain and northwest Europe during the Iron Age – from 600 BC to 43 AD,
Boudicca	A Celtic queen who is famous for rising up against the Roman occupation in AD60 or 61.

Lenny's facts to learn
Romulus and his twin brother Remus were the sons of the God Mars. Romulus built the city of Rome.
In August 55 B.C. (55 years before Jesus was born) the Roman general, **Emperor Julius Caesar** invaded Britain.
In 43 A.D. (43 years after Jesus was born), **Emperor Claudius** organised the final and successful Roman invasion of Britain.
The Romans were cross with Britain for helping the Gauls (now called the French) fight against the Roman general Julius Caesar. They came to Britain looking for riches - land, slaves, and most of all, iron, lead, zinc, copper, silver and gold.
Queen Boudicca led an attack against the Romans after they took her land away.
The Romans gave us Language The Calendar Laws and a legal system straight roads central heating