



Rainow Primary School

*- Caring - Learning - Achieving -*

# A Guide to the Year 5 Curriculum



# Rainow Primary School

## A Guide to the Year Five Curriculum

### INTRODUCTION

This booklet provides information for parents and carers on the end of year expectations for children in our school. The National Curriculum outlines these expectations as being the minimum requirements your child should meet in order to ensure continued progress.

All the objectives will be worked on throughout the year and will be the focus of direct teaching. Any extra support you can provide in helping your children to achieve these is greatly valued.

If you have any queries regarding the content of this booklet or would like some support in knowing how best to help your child then please talk to your child's teacher.

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In Literacy, your child will increasingly meet a wider range of texts and types of writing and will be encouraged to use their skills in a broader range of contexts. Their knowledge and understanding of grammar and punctuation terminology will also increase which will be practically applied when writing independently.

In Mathematics, children will use their knowledge of number bonds and multiplication tables to tackle more complex problems, including larger multiplication and division, and meeting new material. In Year 5, this includes more work on calculations with fractions and decimals, and using considerably larger numbers than previously.



## READING

Please encourage your child to read regularly; at least ten minutes every day. This could be a story, a non-fiction book, a magazine, newspaper or website.

It is important to make sure that children understand what they are reading. As children become more competent readers, they should be able to answer increasingly complex questions which involve more thinking. The table below might be a useful guide when asking your child questions about their reading.

Question Type	Meaning	Examples
Literal	Information that is given in the text	<ul style="list-style-type: none"><li>• What happened when.....?</li><li>• Why did.....happen?</li><li>• What happened after.....?</li><li>• Why did it happen?</li></ul>
Inference	Information implied but not given in the text	<ul style="list-style-type: none"><li>• How did you know.....?</li><li>• Why do you think.....happened?</li><li>• How do you think he/she felt when.....happened?</li></ul>
Vocabulary	Determining the meaning of words in the text	<ul style="list-style-type: none"><li>• What does this word mean?</li><li>• Why was this word important in the story?</li><li>• What is another word for.....?</li></ul>
Evaluation	Evaluate additional information not given in the text	<ul style="list-style-type: none"><li>• What do you think of the story?</li><li>• What do you think the author meant when they said.....?</li><li>• How was.....like you?</li></ul>
Reorganisation	Using two or more pieces of information given in different parts of the text	<ul style="list-style-type: none"><li>• In your own words tell me what happened in the story?</li><li>• Tell me the main events in the story?</li><li>• Can you tell me an event in the story that has happened to you?</li></ul>
Reaction	Expressing an opinion on information given in the text	<ul style="list-style-type: none"><li>• How did you feel when.....?</li><li>• Have you had an experience like.....?</li><li>• Tell me a time when you felt like.....? Why?</li></ul>

### Rainow Reading Criteria for Y5

#### **Reading words:**

- My reading is fluent and I can read a range of fiction and non-fiction texts with confidence
- I use my knowledge of root words, suffixes and prefixes to help me understand the meaning of new words in context
- I can confidently use dictionaries and thesauruses to check the meaning of unfamiliar words I have read
- I can confidently read a wide range of texts (myths, legends, fairy-tales, poems, play-scripts and non-fiction texts) aloud, experimenting with intonation, volume and actions to make it entertaining for the listener
- I have read and learnt a range of poems by heart and can perform them

#### **Understanding Texts:**

- I can provide detailed and accurate summaries of the texts I have read, commenting on the themes and issues in them
- I can make connections between the key events in stories
- I can distinguish between statements of fact and opinion
- I can retrieve, record and present information from non-fiction texts.
- I can predict what might happen next by finding clues the writer has used to influence my ideas about themes, characters, events and settings
- I can comment on the effectiveness of the author's use of literacy conventions (simile, metaphor etc.)
- I can use evidence from a text to infer a character's feelings, thoughts, motives and actions throughout a story
- I can identify words and phrases that capture the reader's interest and imagination and comment on their effectiveness
- I can identify different conventions in a wide range of books I read
- I can **ask** and **answer** questions about texts I have read to improve my understanding of them

#### **Talking About Reading:**

- I can discuss the texts I have read and link key events to my own experiences
- I can talk about the vocabulary I like in books, why the author might have chosen it and how it makes me feel
- I can talk about similarities and differences when comparing books by the same author or with the same themes
- I can discuss how language, structure and presentation contribute to the meaning of a text
- I confidently take part in group discussion about a range of texts I have read. I listen carefully to others and give reasons for my ideas when it is my turn



## WRITING

During Year Five, children will write a range of fiction and non-fiction pieces with increasing sophistication. They will be encouraged to develop their own 'writer's voice'. The children will need to make decisions about precise and effective word choices and sentence structures; in doing so, they will carefully consider the overall effect on the reader. The emphasis is very much on producing quality, controlled writing.

### Rainow Writing Criteria for Y5

#### **Planning my writing:**

- I can use a range of good writing models to help me plan a variety of writing tasks
- I make notes to develop my ideas for writing drawing on reading and research where necessary

#### **Structuring my writing:**

- I can use paragraphs to organise my writing logically and shape a non-fiction text effectively
- I can develop ideas within a paragraph and begin using topic sentences to introduce them
- I am beginning to use a range of presentational devices in my writing (bullet points, underlining, headings and sub-headings)

#### **Writing sentences & joining clauses**

- I use correct and consistent tense throughout my work
- I use relative clauses appropriately to make the meaning of my sentence clear for the reader
- I am beginning to explore modal verbs and how they can be used to clarify meaning
- I know how to use subordinate clauses to add clarity to my writing
- I explore different classes of conjunction and begin to use them correctly

#### **Engaging and giving detail**

- I use rich and adventurous vocabulary to add interest to my writing
- I write both formal and informal texts using the appropriate language structure
- I use stylistic devices to create effects in writing (simile, metaphor, personification)
- I can use dialogue in stories to move the narrative forward or to give information about characters

#### **Punctuating Sentences**

- I can use punctuation accurately in my writing (Capital letters . ! ? Commas in lists and after fronted adverbials)
- I can punctuate direct speech correctly, including the 'new speaker, new line' rule
- I can use commas to mark phrases or clauses accurately
- I can use brackets to indicate parenthesis
- I am beginning to use colons, semi-colons and dashes

#### **Improving and editing**

- When editing my writing, I can improve sentences and longer sections which impact on the overall effectiveness of the text
- When self- or peer-editing, I always consider the overall impact of the text and suggest relevant improvements
- I can perform my own compositions using appropriate intonation and volume

#### **Handwriting**

- My handwriting is neat, legible and joined and I take care to present my work

a b c d e f g h i j k l m n o p q r s t u v w x y z



# WRITING

What a good one looks like...

Free. He was finally free. Free from camp and reunited with his dog only <sup>ally</sup> ~~ally~~, a young wolf cub that he ~~could understand~~. But the escape was <sup>in the dead of night</sup> ~~very dangerous~~. Not long ago, a roar had shook Raven camp making people run, including Torak and Wdg. Everyone was heading to Thunder Falls which meant the bear would too. To avoid the bear, Torak and the cub took detour into the hills.

When Torak next woke up, he was on a grassy meadow surrounded by tall, steep ridges. He had escaped the bear again. However, they now had to cross many menacing hills. At the summit of this ~~first~~ <sup>first</sup> hill, Torak saw ~~movement~~ <sup>he</sup> ~~movement~~. Relieved, a vulnerable deer stood in front of them. As Torak grabbed his bow, Torak whispered to himself, "yes, an easy hill," with a smile on his face. The ~~note~~ <sup>he</sup> excited wolf got ready to pounce on the ~~tor~~ defenceless deer. Torak released the string and the ~~arrow~~ <sup>arrow</sup> ~~shot~~ <sup>shot</sup> into the bushes chest. Finally, Torak and Wdg could ~~store~~ <sup>renew</sup> energy.

After the hills came many nights and days of nothing but walking. No prey, ~~but~~ no bear, just Torak and his companion. Luckily, Torak and Wdg had food for the hunt to ~~eat~~ <sup>keep</sup> them going ~~but~~, as there was no prey, they couldn't get anything else.

Clear paragraphs which open with adverbials which link and move the action on.

Modal verb shows possibility

Conjunctions (co-ordinating & subordinating)

Subordinate clauses which add extra detail.

Well chosen rich and adventurous vocabulary

## Structuring my writing:

- I can use paragraphs to organise my writing logically and shape a non-fiction text effectively
- I can develop ideas within a paragraph and begin using topic sentences to introduce them
- I am beginning to use a range of presentational devices in my writing (bullet points, underlining, headings and sub-headings)

## Writing sentences & joining clauses

- I use correct and consistent tense throughout my work
- I use relative clauses appropriately to make the meaning of my sentence clear for the reader
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## Engaging and giving detail

- I use rich and adventurous vocabulary to add interest to my writing
- I write both formal and informal texts using the appropriate language structure
- I use stylistic devices to create effects in writing (simile, metaphor, personification)
- I can use dialogue in stories to move the narrative forward or to give information about characters

## Punctuating Sentences

- I can use punctuation accurately in my writing (Capital letters . ! ? Commas in lists and after fronted adverbials)
- I can punctuate direct speech correctly, including the 'new speaker, new line' rule
- I can use commas to mark phrases or clauses accurately
- I can use brackets to indicate parenthesis
- I am beginning to use colons, semi-colons and dashes

Not all objectives will be found in each individual piece but instead will be assessed and evidenced across a range of pieces of writing.



## PUNCTUATION & GRAMMAR

Children will revise and be expected to use grammar and punctuation terminology taught in previous year groups as well as learning new terminology which is outlined below.

**Vocabulary used by pupils:** *modal verb, relative pronoun, relative clause, parenthesis, bracket, dash, cohesion, ambiguity.*

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**By the end of Year 5, children will have been taught:**

- How to use **relative clauses**, beginning with **who, which, where, when, whose, that**, or an omitted relative pronoun.

### RELATIVE CLAUSE

A **relative clause** is a subordinate clause, which adds detail to a noun within a sentence. They are introduced by **relative pronouns**.

### RELATIVE PRONOUNS

– who, whom, whose, when, where, which or that.

### Examples:

The old building, **which had once been a busy factory**, was now empty.

**Main clause** = *The old building was now empty* makes sense by itself so it is the main clause.

**Relative clause** = *which had once been a busy factory* – This does not make sense by itself but gives extra detail about the noun 'building'. It has been sandwiched into the middle of the main clause so that it is immediately after the noun it is describing (the building). This is called an **Embedded Relative Clause** and it uses **commas** to separate itself from the main clause.

I quickly apologised to the lady, **who was looking very angry indeed**.

**Main clause** = *I quickly apologised to the lady* – This makes sense by itself so it is the main clause.

**Relative clause** = *who was looking very angry indeed* – This does not make sense by itself but gives extra detail about the noun 'lady'. It has been added after the noun and sits at the end of the sentence.

The forest exploded. , which was deep and dark,

Imagine a boy alone in a desert on his bike. **Tom, who is ten,** loves exploring and he also loves riding his bike. One day Tom decided he was going wanted to go around the world on



## PUNCTUATION & GRAMMAR

- How to indicate degrees of possibility using **adverbs** (e.g. perhaps, surely) or **modal verbs** (e.g. might, should, will, must).

**MODAL VERBS** and **ADVERBS** both can be used to show possibility. MODAL VERBS are used to change the meaning of other verbs. They can express meanings such as certainty, ability, or obligation. The main modal verbs are will, would, can, could, may, might, shall, should, must, ought. Similarly, suitable adverbs include: surely, possibly, sometimes, never, perhaps, unlikely. These are useful when either trying to be persuasive, commanding or fair and balanced.

### Examples:

**Persuasive** – *Surely* you *would* want to see your child happy.

**Balanced** – *Perhaps* we *could* explore other options.

**Commanding** – You *must* never enter that place.

I **could** go out tonight

I **might** go out tonight

I **should** go out tonight

I **must** go out tonight

I **will** go out tonight

- How to use brackets, dashes or commas to indicate parenthesis This is used to offset additional information in your sentence (called parenthesis)

**PARENTHESIS (BRACKETS, DASHES AND COMMAS)** can all be used to surround extra information that is added to a sentence. The information within the punctuation can be removed without changing the meaning of the sentence.

### Examples:

Mrs Eddie loves teaching Year Five. ← Main clause

Mrs Eddie (a teacher at Rainow Primary School) loves teaching Year Five.

Mrs Eddie, a teacher at Rainow Primary School, loves teaching Year Five.

Mrs Eddie - a teacher at Rainow Primary School - loves teaching Year Five.

Extra information within **PARENTHESIS**



## PUNCTUATION & GRAMMAR

- How to link ideas across paragraphs using **adverbials** of time (e.g. later , before, then), place (e.g. nearby, far away) and number (e.g. secondly, finally) or tense choices (e.g. he had seen her before)

An **ADVERB** OR **ADVERBIAL** tells you **when, where, how, why or how often** something happens. These can be used to help create links between ideas. 'Fronted Adverbials' (adverbials at the start of a sentence) can create a really clear link to previous ideas and points.

### Examples:

**Later that night, the three boys crept back outside.**

*Later that night* is an adverbial telling you **when** they crept. It links to a previous sentence that would have been about what happened earlier that night. *back outside* is an adverbial telling you **where** they crept. It suggests that they were outside earlier too so it makes another link to previous ideas.

**In addition to reducing traffic, cycling also has significant health benefits to consider.**

*In addition to reducing traffic* is an adverbial telling you **where** the new idea fits within the argument. It makes a clear link back to the previous point and makes it easier for the reader to follow the argument.

Adverbial: **In a state of shock, the team made their way forward to collect the trophy.**

Adverb: **Nervously, the team made their way forward to collect the trophy.**

These examples show **how** the team were feeling when they went forward. Placing the adverb/adverbial at the start in this case suggests that previous sentences are about how unlikely they were to win.

When Torak next woke up, he was on a grassy meadow surrounded by tall, steep ridges. He

shuddered into the buck's chest. Finally, Torak and Nala could restore <sup>some</sup> energy.

After the hills came many nights and days of nothing but walking. No prey, ~~but~~ no bear, just Torak and

Bobbing and wobbling in my boat, I saw a red cloud of fire erupting from a large mountain. I could ~~here~~ hear someone, something singing. I went to observe the sound

- How to use commas to **clarify meaning** or avoid **ambiguity** in writing.

Ambiguity arises when writing is not clear and could be interpreted in more than one way. Commas can be used to clarify the meaning in the sentence.

### Examples:

**Let's eat Grandma.**

(this suggests that we should eat Grandma)

**Let's eat, Grandma.**

(this suggests that Grandma is being invited to eat)



# SPELLING

During Year Five, children will be taught the following:

- develop a range of personal strategies for learning new and irregular words
- develop a range of personal strategies for spelling at the point of composition
- develop a range of strategies for checking and proof reading spellings after writing
- use further prefixes (co-/sub-/auto-/micro-) and suffixes (-able/-ible/-ibly) and understand how to add them
- spell some words with 'silent' letters (for example, knight, psalm, solemn)
- spell words which contain -ough and ie/ei
- continue to distinguish between homophones and other words which are often confused
- use knowledge of morphology and etymology in spelling and understand that the spelling of some words needs to be learnt specifically
- use dictionaries to check the spelling and meaning of words
- use a thesaurus
- proofread for spelling errors.

## Statutory Word List for Years Five and Six:

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

Children should be practising spellings from the current pattern/rule and the Y5/6 Word List. What do the words mean? Can they include them in a sentence? Can they spot them whilst they are reading? Do they know any synonyms or antonyms for the word?

## Making spelling fun...

- Find the words in the paper or magazines
- Cut out the letters and see how quickly your child can rearrange them in the correct order
- Say speech rhymes and tongue twisters together
- Play detective games with words – ask your child to be a detective and find: words that rhyme, begin/end with the same sound or letter, little words in big words (e.g. 'am' in 'pyjamas'), words that sound the same but are spelt differently (e.g. ate, eight)
- Play word games that focus on sounds of words (Scrabble, Boggle, Word Snap, I Spy)
- Draw a picture, then write words to label items in the picture
- Use alphabet stamps and coloured ink pads or felt pens/crayons to make spelling artwork
- Write a short story that uses all of the spelling words
- Find the meaning of words in a dictionary and write them in a sentence
- Write words in a bucket of sand or make them from playdough
- Make secret agent words by numbering the alphabet from 1-26 and then converting spelling words into a number code
- Make a crossword puzzle or word search from the words in the spelling list
- Try to find spelling words used in a newspaper or magazine article
- Make flashcards to help practise spelling words

Please see the Year Five webpage for our 'Spelling Activity Menu' which outlines the strategies that we will use in class to help us learn spellings. <http://www.rainowpri.cheshire.sch.uk/class/class-5>



## MATHEMATICS

By Year 5, children should know basic number bonds (e.g.  $2+6=8$ ,  $20+60=80$ ,  $200+600=800$ ) and all multiplication facts (and associated division facts) up to  $12 \times 12$ . They need to have learnt them so well that they can be recalled **instantly** (no thinking time). Being able to do this enables efficient calculating, allowing them to fully focus on making sense of problems. Much of the knowledge in Year 5 relies on number facts being easily recalled. For example, to find common factors or to make simple conversions, knowledge of multiplication tables is essential.

[http://www.wldps.com/gordons/Hit the button.swf](http://www.wldps.com/gordons/Hit_the_button.swf) is a useful game to practise instant recall.

Pupils are encouraged to ask themselves:

***Can I do it in my head?***

***Do I need to make jottings?***

***Do I need to use a formal column method?***

When introducing new concepts, concrete materials (hands-on resources) and pictorial representations (models and images) will be used to aid understanding before expecting children to work in an abstract way.

--- CONCRETE --- PICTORIAL --- ABSTRACT ---

### Tips for helping with maths development:

*+ Listen to your child – ask them to explain how they found an answer. Expect your child to use different strategies to solve problems – ask “Is there another way you could solve this?”*

***They truly understand what they are doing if they can explain or teach a concept to you.***

*+ Ask your child what they are doing in maths at school and try to use it in everyday life (e.g. fractions – what fraction of people in our family are children? What fraction of pizza is left/did you eat?) This gives them practise and shows them that maths relates to the ‘real’ world.*

*+ Give them opportunities to do maths – maths is everywhere!*

Some great contexts for maths are:

- Money – counting and calculating – pocket money, banking, shopping
- Measuring – length, area, volume, cooking ingredients
- Travelling – reading numbers on signs, calculating distances & speeds, giving directions, timetables
- Games – Monopoly, Bingo, board games such as Snakes and Ladders



# MATHEMATICS

## SOME USEFUL FACTS TO LEARN KNOW OFF BY HEART:

### TIME

1 minute = 60 seconds  
1 hour = 60 minutes  
1 day = 24 hours  
1 week = 7 days  
1 leap year = 366 days  
1 year = 365 days or 52 weeks or 12 months  
1 century = 100 years  
1 millennium = 1000 years

30 days has September, April, June and dark November.  
All the rest have 31 days clear, except for February  
which has 28 and 29 in each leap year.

### SQUARE NUMBERS

$1 \times 1 = 1$                        $6 \times 6 = 36$   
 $2 \times 2 = 4$                        $7 \times 7 = 49$   
 $3 \times 3 = 9$                        $8 \times 8 = 64$   
 $4 \times 4 = 16$                      $9 \times 9 = 81$   
 $5 \times 5 = 25$                      $10 \times 10 = 100$

### PRIME NUMBERS <50

2, 3, 5, 7, 11, 13, 17, 19,  
23, 29, 31, 37, 41, 43, 47

### MEASURES

#### Length:

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

#### Mass:

1000 grams (g) = 1 kilogram (kg)  
1000 kilograms = 1 tonne

#### Capacity:

1000 millilitres (ml) = 1 litre (l)

### WORD ORIGINS/MEANING

mono- = one  
uni- = one  
bi- = two  
tri- = three  
quad- = four  
pent- = five  
hex- = six  
hept- = seven  
sept- = seven  
oct- = eight  
nona- = nine  
dec- = ten  
cent- = hundred  
mille- = thousand  
kilo- = thousand

### Fractions

One whole (1)							
$\frac{1}{2}$ (half)				$\frac{1}{2}$ (half)			
$\frac{1}{4}$ (quarter)		$\frac{1}{4}$		$\frac{1}{4}$		$\frac{1}{4}$	
$\frac{1}{8}$ (eighth)	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

One whole					
$\frac{1}{3}$ (third)			$\frac{1}{3}$		
$\frac{1}{6}$ (sixth)	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

One whole									
$\frac{1}{5}$ (fifth)		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$		$\frac{1}{5}$	
$\frac{1}{10}$ (tenth)	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{10}$

### Fraction / Decimal / Percentage Equivalence

Fraction	Decimal	Percentage
1 (whole)	1.0	100%
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{3}{4}$	0.75	75%
$\frac{1}{10}$	0.1	10%
$\frac{2}{10}$	0.2	20%



# MATHEMATICS – ADDITION

## OBJECTIVES

### Pupils should be taught to:

- ✓ add whole numbers with more than 4 digits, including using formal written methods (columnar addition)
- ✓ Add numbers mentally with increasingly large numbers
- ✓ use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- ✓ solve addition and subtraction multi-step problems in contexts, deciding which operations & methods to use & why.

## METHODS

Children will continue to practise using a range of strategies to add mentally.

For example, they might 'partition' the number:  $2476 + 3832 = (2000 + 3000) + (400 + 800) + (70 + 30) + (6 + 2)$

We will extend our knowledge of column addition, using it to add yet bigger amounts. Using Place Value counters or Dienes, we will explore our understanding of how the method works.

Solve:

Th	H	T	O
4	4	3	4
+	3	3	2
<hr/>			
7	7	6	6

**NB. Care must be taken when 'carrying' (this is where knowledge and understanding of Place Value is essential)**

**The concept of zero as a placeholder needs to be understood and utilised when adding numbers of different sizes (in different columns)**

In this example, the child has realised their mistake. Placing a zero in the thousands column could help.

Addition is the inverse of subtraction; this relationship is demonstrated through 'Fact Families'.

369	
247	122

$$122 + 247 = 369$$

$$247 + 122 = 369$$

so  $369 - 122 = 247$

$$369 - 247 = 122$$

## Vocab:

add, addition, more than, sum, and, make, total, altogether, increase, plus, double, near double, partition, ones, tens, hundreds, thousands, ten thousands, carry, carrying, carry marks, columns, equals, is equal to, zero, placeholder



# MATHEMATICS – SUBTRACTION

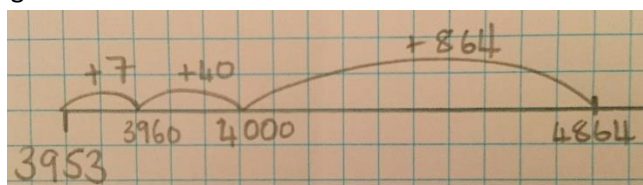
## OBJECTIVES

### Pupils should be taught to:

- ✓ subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction)
- ✓ subtract numbers mentally with increasingly large numbers
- ✓ use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- ✓ solve addition and subtraction multi-step problems in contexts, deciding which operations & methods to use & why.

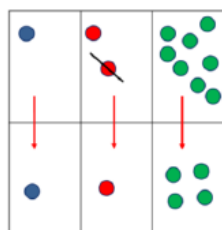
## METHODS

'Counting On' on a numberline to find the difference between numbers is a useful method to use.

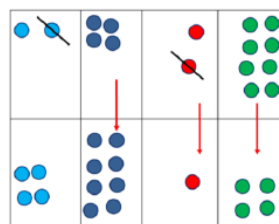


• nearest multiple of 10?  
• next multiple of 100?  
• next multiple of 1000?  
 $864 + 40 + 7 = 911$

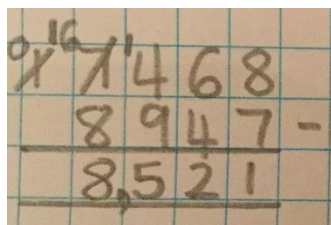
When understanding of the expanded method is secure, children will move on to the formal method of decomposition, which can be modelled using place value counters.



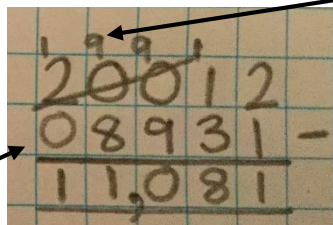
$$\begin{array}{r} 200 \ 30 \ 2 \\ - 100 \ 10 \ 4 \\ \hline 100 \ 10 \ 8 \end{array}$$



$$\begin{array}{r} 6232 \\ - 4814 \\ \hline 1418 \end{array}$$



The concept of zero as a placeholder needs to be understood and used when adding numbers of different sizes (in different columns)



Care must be taken when exchanging across more than one column (this is where knowledge and understanding of Place Value is essential).

Subtraction is the inverse of addition; this relationship is demonstrated through 'Fact Families'. These are particularly useful in helping us solve missing number problems.

10,754	
a	2,709

$$\begin{aligned} 10,754 - 2,709 &= a \\ 10,754 - a &= 2,709 \end{aligned}$$

$$\begin{aligned} \text{so } a + 2,709 &= 10,754 \\ 2,709 + a &= 10,754 \end{aligned}$$

$$\text{Therefore, } a = 10,754 - 2,709 = 8,045$$

## Vocab:

subtraction, subtract, minus, decrease, less than, find the difference (between), count on, number line, number track, fewer, take (away), how many are left/left over? how many more/fewer is... than...? how much more/less is...? exchange, columns, decomposition, equals, zero, place holder



# MATHEMATICS – MULTIPLICATION

## OBJECTIVES

### Pupils should be taught to:

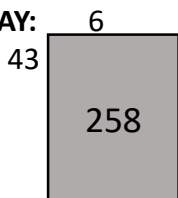
- ✓ identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- ✓ know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- ✓ establish whether a number up to 100 is prime and recall prime numbers up to 19
- ✓ multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers
- ✓ multiply numbers mentally drawing upon known facts
- ✓ multiply whole numbers and those involving decimals by 10, 100 and 1000

## METHODS

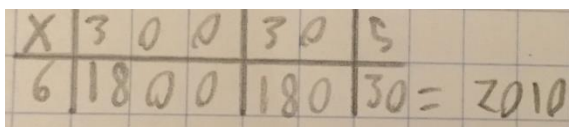
Children will continue to practise using known facts to help them multiply. For example, if  $6 \times 7 = 42$  then  $60 \times 7 = 420$  and  $6 \times 70 = 420$ .

Explicit links will be made between the array model and the grid method:

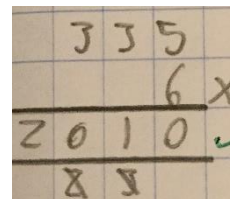
**ARRAY:**



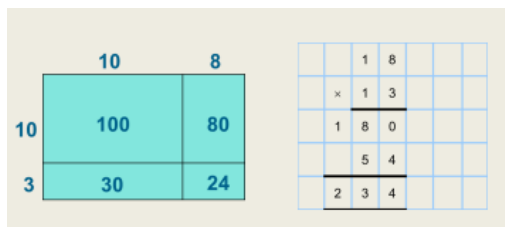
**GRID METHOD:**



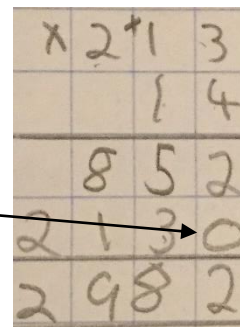
**SHORT MULTIPLICATION:**



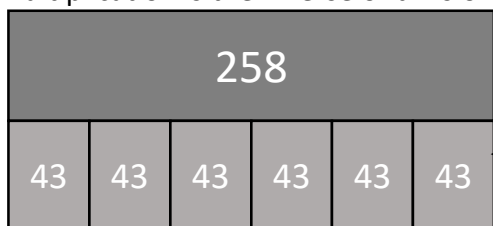
Children will also explore how the grid method supports understanding of long multiplication (2d x 2d)



Children will use their understanding of place value to explain why a zero is needed here:



NB. Multiplication is the inverse of division; this relationship is demonstrated through 'Fact Families'.



$$43 \times 6 = 258$$

$$6 \times 43 = 258$$

so  $258 \div 6 = 43$

$$258 \div 43 = 6$$

6 equal groups of 43

## Vocab:

array, lots of, groups of, times, multiplication, multiply, multiplied by, multiple of, product, factor, once, twice, three times, four times, five times... ten times, ...times as (big, long, wide, and so on), repeated addition, array, row, column, carry, zero, place holder, decimal point, decimals, short multiplication, long multiplication, grid



# MATHEMATICS – DIVISION

## OBJECTIVES

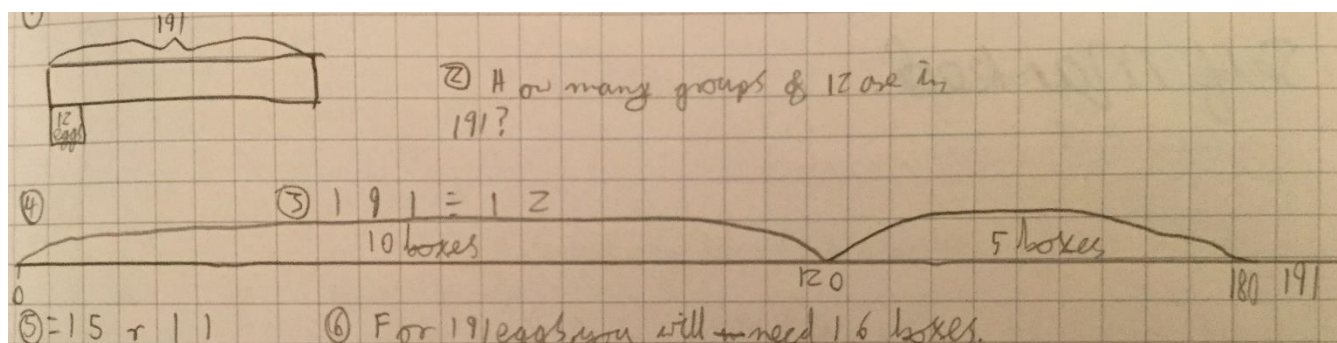
### Pupils should be taught to:

- ✓ divide numbers mentally drawing upon known facts
- ✓ divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context
- ✓ divide whole numbers and those involving decimals by 10, 100 and 1000

## METHODS

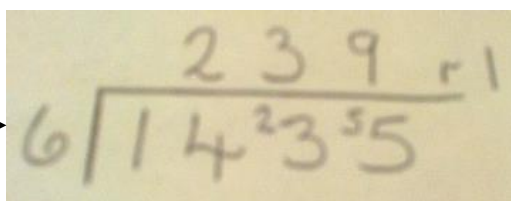
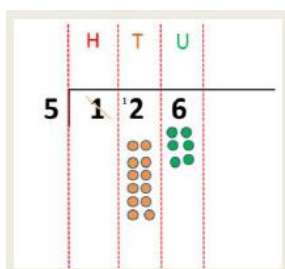
### Sharing, Grouping and using a number line

Children will continue to explore division as sharing and grouping and to represent calculations on a number line until they have a secure understanding. They will encounter calculations with remainders as well as without. Remainders should be interpreted according to the context (i.e. rounded up or down to relate to the answer to the problem)

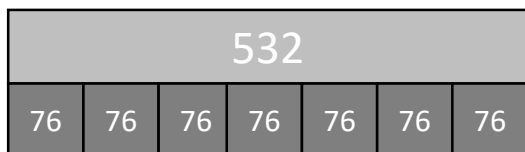


### Short Division

This method is introduced using Place Value counters or Dienes to reinforce understanding.



NB. Division is the inverse of multiplication; this relationship is demonstrated through 'Fact Families'.



$$532 \div 7 = 76$$
$$532 \div 76 = 7$$

so  $7 \times 76 = 532$   
 $76 \times 7 = 532$

### Vocab:

array, lots of, groups of, multiples, repeated subtraction, number line, share, share equally, one each, two each, three each... group in pairs, threes... tens, equal groups of, divide, division, divided by, divided into, remainder, factor, divisor, quotient, divisible by, 'bus stop', short division, long division, chunk.





# MATHEMATICS – Y5 ALL OTHER OBJECTIVES

## Pupils should be taught to:

### **PLACE VALUE**

- ✓ read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
- ✓ count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
- ✓ interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero
- ✓ round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000
- ✓ solve number problems and practical problems that involve all of the above
- ✓ read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

### **MEASURES**

- ✓ convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- ✓ understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
- ✓ measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- ✓ calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes
- ✓ estimate volume [for example, using 1 cm<sup>3</sup> blocks to build cuboids (including cubes)] and capacity [for example, using water]
- ✓ solve problems involving converting between units of time
- ✓ use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

### **GEOMETRY**

- ✓ identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- ✓ know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- ✓ draw given angles, and measure them in degrees (o)
- ✓ identify:
  - angles at a point and one whole turn (total 360°)
  - angles at a point on a straight line and 1/2 a turn (total 180°)
  - other multiples of 90°
- ✓ use the properties of rectangles to deduce related facts and find missing lengths and angles
- ✓ distinguish between regular and irregular polygons based on reasoning about equal sides and angles
- ✓ identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

### **STATISTICS**

- ✓ solve comparison, sum and difference problems using information presented in a line graph
- ✓ complete, read and interpret information in tables, including timetables.