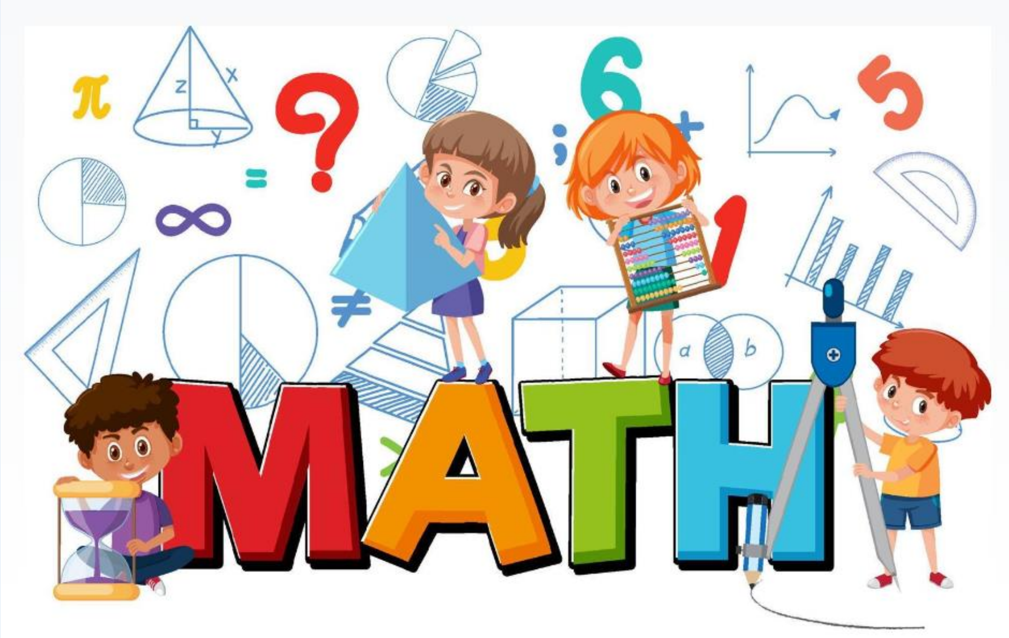
Welcome to our Maths workshop

Year 5 and Year 6

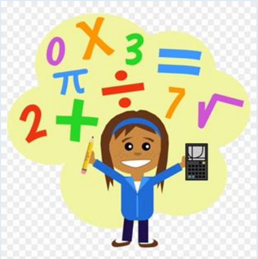


Aims

- To help you get a better understanding of how maths is taught through White Rose in our school with a focus on the four operations and fractions.

- To understand what maths looks like in Year 5 and Year 6.

- To know how to support children at home.



How is Maths Taught at Owlsmoor Primary School?

KS2 National Curriculum expects us to cover:

- Mathematical fluency
- Reasoning
- Problem solving

The 4 'strands' of mathematics which are Number, Shape, Measure, Data

National Curriculum Programmes of Study for Key Stage 1 and Key Stage 2

Year 5 Maths Coverage

Autumn term	Number **Place value** VIEW	Number **Addition and subtraction** VIEW	Number **Multiplication and division A** VIEW	Number **Fractions A** VIEW		
Spring term	Number **Multiplication and division B** VIEW	Number **Fractions B** VIEW	Number **Decimals and percentages** VIEW	Measurement **Perimeter and area** VIEW	**Statistics** VIEW	
Summer term	Geometry **Shape** VIEW	Geometry **Position and direction** VIEW	Number **Decimals** VIEW	Number **Negative num...** VIEW	Measurement **Converting units** VIEW	Measurement **Volume** VIEW

Year 6 Maths Coverage

Autumn term	Number **Place value** VIEW	Number **Addition, subtraction, multiplication and division** VIEW	Number **Fractions A** VIEW	Number **Fractions B** VIEW	Measurement **Converting units** VIEW	
Spring term	Number **Ratio** VIEW	Number **Algebra** VIEW	Number **Decimals** VIEW	Number **Fractions, decimals and percentages** VIEW	Measurement **Area, perimeter and volume** VIEW	**Statistics** VIEW
Summer term	Geometry **Shape** VIEW	Geometry **Position and di...** VIEW	**Themed projects, consolidation and problem solving** VIEW			

Starter Slides in Maths Lessons

Most lessons begin with a starter slide. This helps to develop children's fluency and consolidate their prior learning, providing an opportunity to practise key skills or revisit concepts.

Starter: Monday **SHOW YOUR WORKING OUT**

1. 4,567- 57 =
2. What is 156 x 28?
3. Round this number to 1 decimal place: 0.35
4. Turn this mixed number into an improper fraction. $3\frac{2}{6}$

Challenge

1. What is the missing angle in a triangle where the other two angles are 35° and 45 °?
2. Sam leaves the house at the time shown on the clock. She returns after 1 hour and 20 minutes. What time did she return home?

Activat

Starter: Wednesday **SHOW YOUR WORKING OUT!!**

1. 197 x 4 =
2. What does the underlined number represent? 2<u>9</u>,464
3. What is a half of 300?
4. Two thousand, nine hundred and twenty two divided by three.
5. How many g is 38kg?

Challenge

- What is the area of a rectangle with sides 7cm and 12cm?
- Use these number cards to make the total. You can add, times, divide or multiply but remember you can only use the cards once.

150

50	8	3	6	4	5

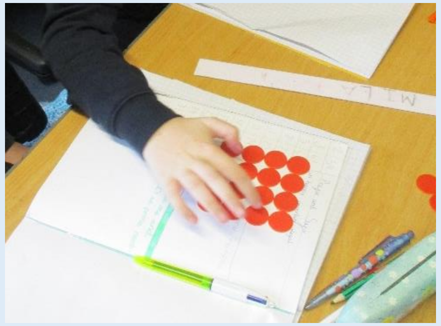
Ac

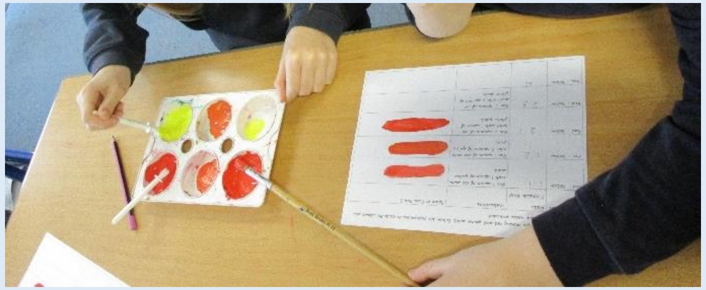
Maths Lesson

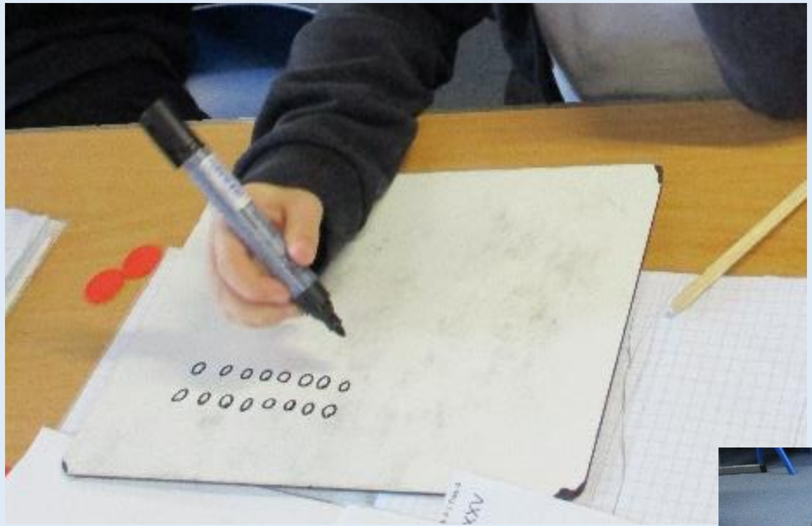
Children might use white boards/apparatus

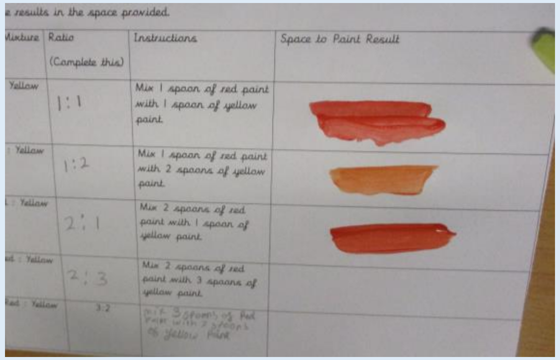
- Learning objective shared with the class at the start of the lesson
- Teacher explains and models the concept or method
- Children have a go on whiteboards before trying independently
- Children use the skill they learnt during the input to solve the challenge (calculation/problem) they have been presented with
- Children encouraged to work independently where appropriate and supported where needed.

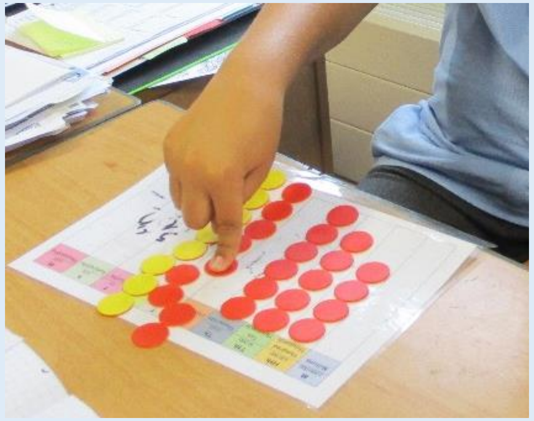
Concrete , pictorial, abstract











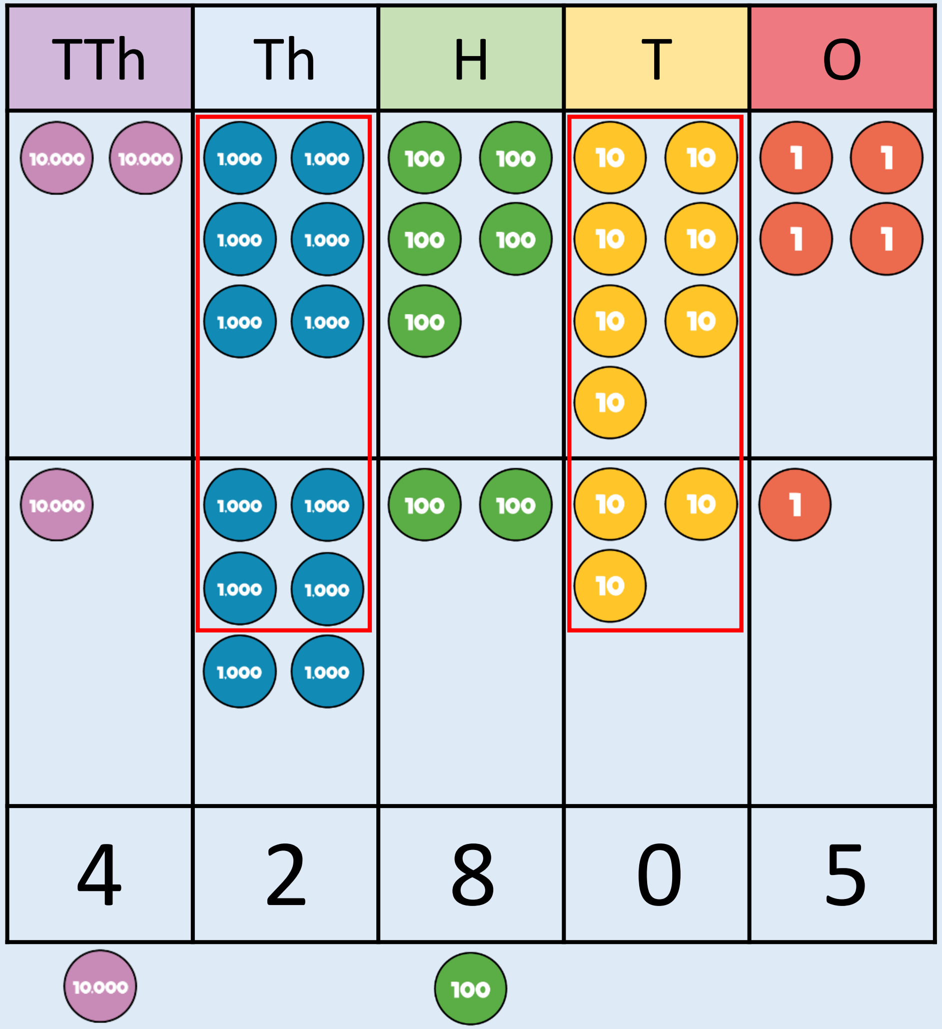
Addition and subtraction – Progressions of skills

Calculations

Year 4	Year 5	Year 6
• add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers	• perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations involving the four operations

Problems

Year 4	Year 5	Year 6
• solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	• solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

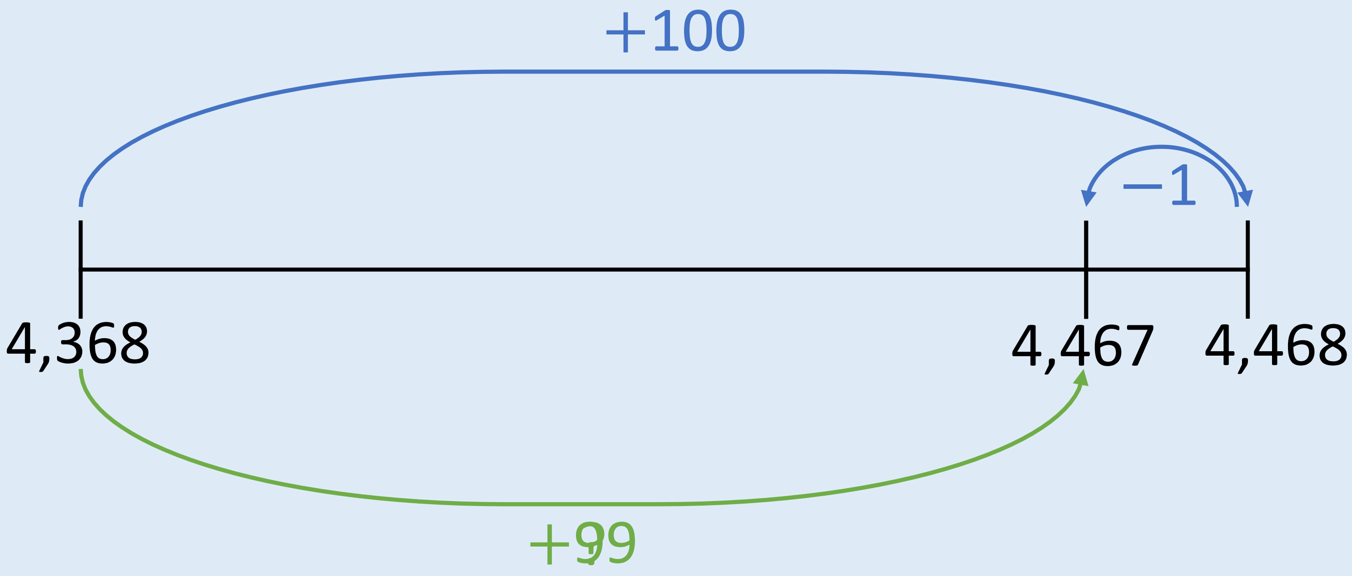


	2	6	5	7	4
+	1	6	2	3	1
	4	2	8	0	5
	1		1		

Mental Strategies

Addition

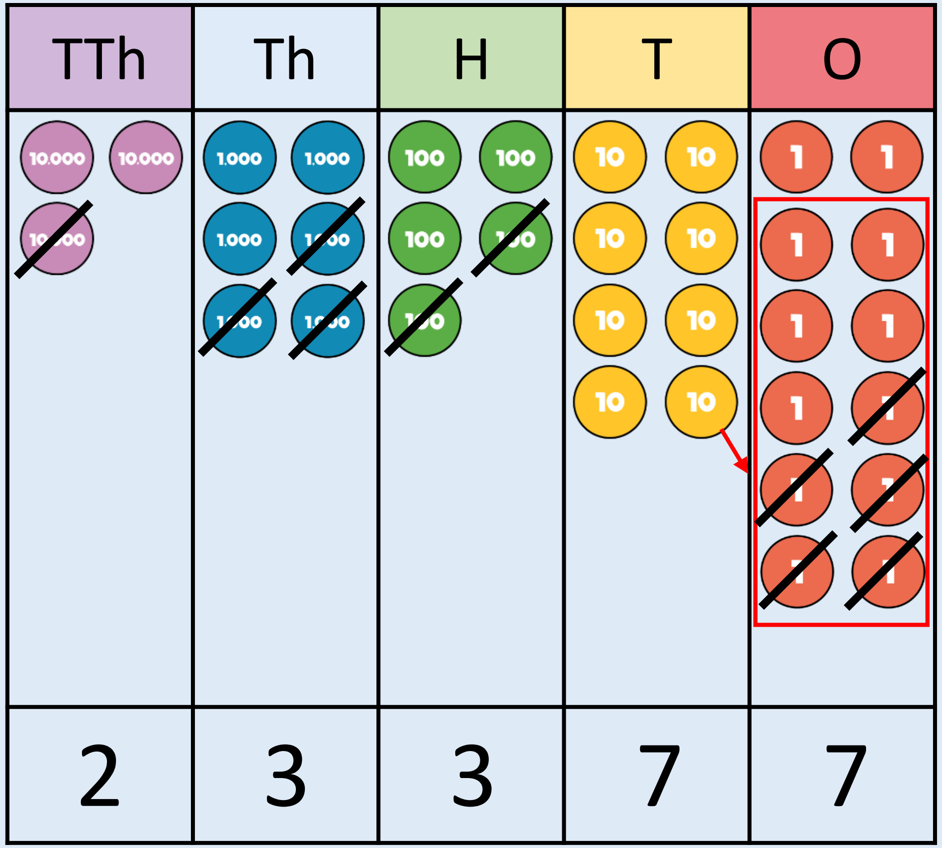
$$4{,}368 + 99 = 4{,}467$$



Number Bonds

Year 5

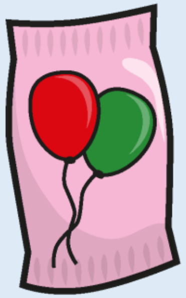
Y6 with larger numbers



$$
\begin{array}{cccccc}
 & & & & 7 & \\
 & 3 & 6 & 5 & \cancel{8} & {}^{1}2 \\
- & 1 & 3 & 2 & 0 & 5 \\
\hline
 & 2 & 3 & 3 & 7 & 7 \\
\hline
\end{array}
$$

Year 5/6

A factory packs 24,638 bags of balloons in a month.
They sell 16,545 bags of balloons.
How many bags of balloons do they have left?



24,638	
?	~~16,545~~

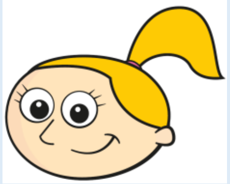
$$\begin{array}{cccccc} & 1 & & 5 & & \\ & \cancel{2} & {}^{1}4 & \cancel{6} & {}^{1}3 & 8 \\ - & 1 & 6 & 5 & 4 & 5 \\ \hline & 0 & 8 & 0 & 9 & 3 \\ \hline \end{array}$$

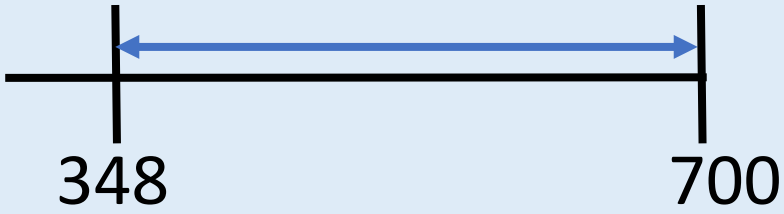
There are 8,093 bags of balloons left.

Have a think

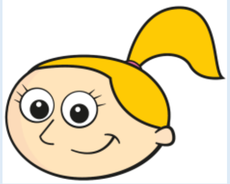
Subtraction

$$\begin{array}{cccc} & {}^{6}\cancel{7} & {}^{1}\cancel{0}^{9} & {}^{1}0 \\ - & 3 & 4 & 8 \\ \hline & 3 & 5 & 2 \\ \hline \end{array}$$

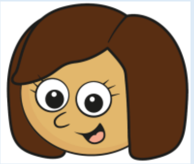




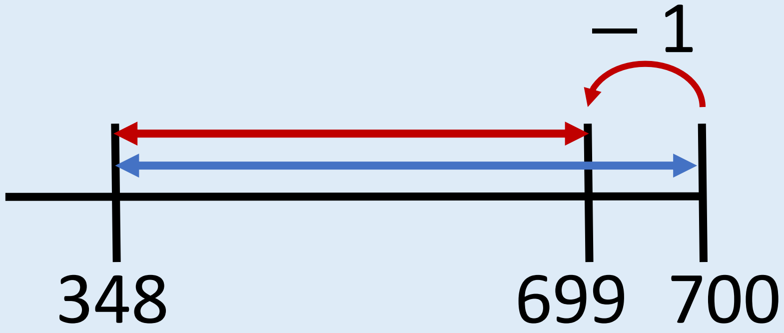
$$\begin{array}{r} {}^{6}\cancel{7}\;{}^{1}\cancel{0}{}^{9}\;{}^{1}0 \\ -\;3\;\;4\;\;8 \\ \hline 3\;\;5\;\;2 \end{array}$$



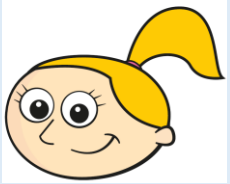
$$\begin{array}{r} 6\;\;9\;\;9 \\ -\;3\;\;4\;\;8 \\ \hline 3\;\;5\;\;1 \end{array}$$



$351 + 1 = 352$

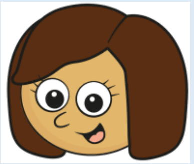


$$
\begin{array}{cccc}
 & \overset{6}{\cancel{7}} & \overset{1\,9}{\cancel{0}} & {}^{1}0 \\
- & 3 & 4 & 8 \\
\hline
 & 3 & 5 & 2 \\
\hline
\end{array}
$$

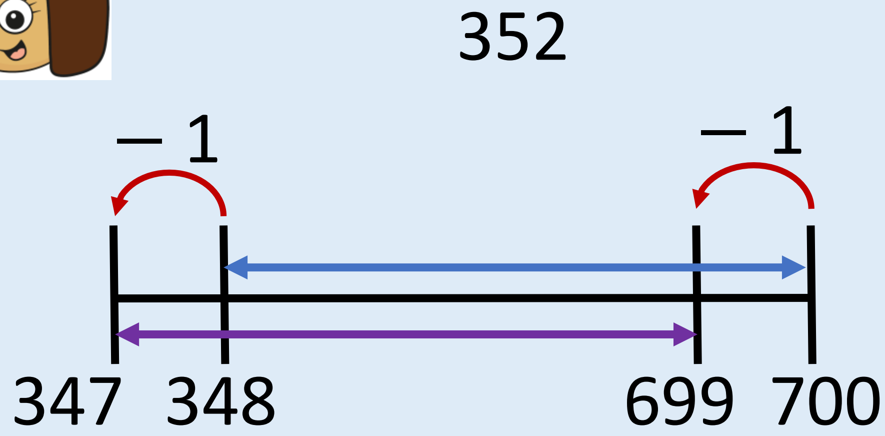


$$
\begin{array}{cccc}
 & 6 & 9 & 9 \\
- & 3 & 4 & 7 \\
\hline
 & 3 & 5 & 2 \\
\hline
\end{array}
$$

$$
\begin{array}{cccc}
 & 6 & 9 & 9 \\
- & 3 & 4 & 8 \\
\hline
 & 3 & 5 & 1 \\
\hline
\end{array}
$$



$351 + 1 = 352$



Multiplications and Division

Year 4	Year 5	Year 6
• multiply two-digit and three-digit numbers by a one-digit number using formal written layout	• 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 and 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 • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context • perform mental calculations, including with mixed operations and large numbers

solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

use their knowledge of the order of operations to carry out calculations involving the four operations

Year 5 Block 1
TS4
Multiply

132×23

	Th	H	T	O	
		1	3	2	
$\times$			2	3	
		3	9	6	
$+$					

(132×3)

132 × 23

	Th	H	T	O		
		1	3	2		
×			2	3		
		3	9	6		(132 × 3)
+	2	6	4	0		(132 × 20)
	3	0	3	6		
	1	1				

Year 6 Multiplication Block 2 – TS7

Multiply up to a 4-digit number by a 2-digit number

$1,207 \times 36$

		1	2	0	7	
	$\times$			3	6	
		7 ~~1~~	2	4 ~~4~~	2	

$(1,207 \times 6)$

Year 6 Multiplication Block 2 – TS7

Multiply up to a 4-digit number by a 2-digit number

1,207 × 36

		1	2	0	7	
	×			3	6	
+		7	2	4	2	
	3	~~1~~ 6	2	~~4~~ 1	0	
	4	3	~~2~~ 4	5	2	
	1					

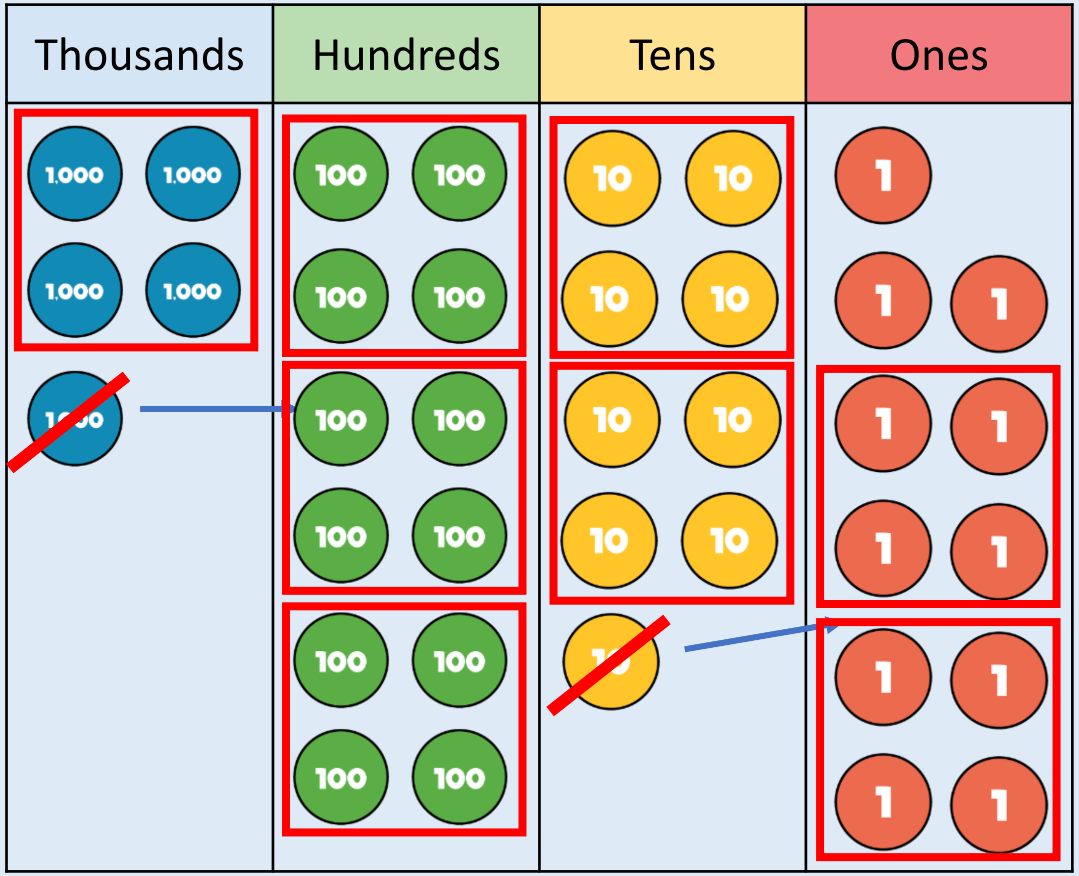
(1,207 × 6)

(1,207 × 30)

Year 5/6

$5{,}291 \div 4 = 1{,}322 \text{ r}3$

Year 6 remainders as fractions and decimals.



	1	3	2	2	r3
4	5	^{1}2	9	^{1}1	

Year 6 Block 2 TS12
Long division with remainders

Calculate $359 \div 16 = 22\ r7$

16	32	48	64	80	96	112	128	144	160

		2	2
16	3	5	9
–	3	2	
		3	9
–		3	2
			7

Have a think

Fractions

Recognise and write

Year 4	Year 5	Year 6
• count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5}+\frac{4}{5}=\frac{6}{5}=1\frac{1}{5}$]	

Compare

Year 4	Year 5	Year 6
• recognise and show, using diagrams, families of common equivalent fractions	• compare and order fractions whose denominators are all multiples of the same number	• use common factors to simplify fractions; use common multiples to express fractions in the same denomination • compare and order fractions, including fractions > 1

Year 4	Year 5	Year 6
• add and subtract fractions with the same denominator	• add and subtract fractions with the same denominator and denominators that are multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	• add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4}\times\frac{1}{2}=\frac{1}{8}$] • divide proper fractions by whole numbers [for example $\frac{1}{3}\div 2=\frac{1}{6}$]

Activities

How can I help my child at home?

In 2011, Ofsted stated that parental engagement has a clear impact of achievement in school for pupils. They also noted how children have higher attainment levels and are more likely to achieve academically when parents are involved with their education.

Positive mindset
Play maths games together
Learn times tables – games , chanting, singing you tube videos TTRS to build their speed
Practise telling the time
Use money (where possible) – budgeting
Cooking with them
Involve them in problem solving
Use fractions in daily life.

The handout has more information. *Maths is all around us!*

Useful Websites

Mathsbot ttps://mathsbot.com/primaryMenu
Enrich https://nrich.maths.org/parents/primary
Oak academy - https://www.thenational.academy/pupils/years
BBC bitesize - https://www.bbc.co.uk/bitesize/primary

How to add, subtract, multiply and divide fractions activities in Kiwis Class.

Please complete a quick questionnaire ☺

Thank you for coming. We hope you found this session useful.

Any questions….