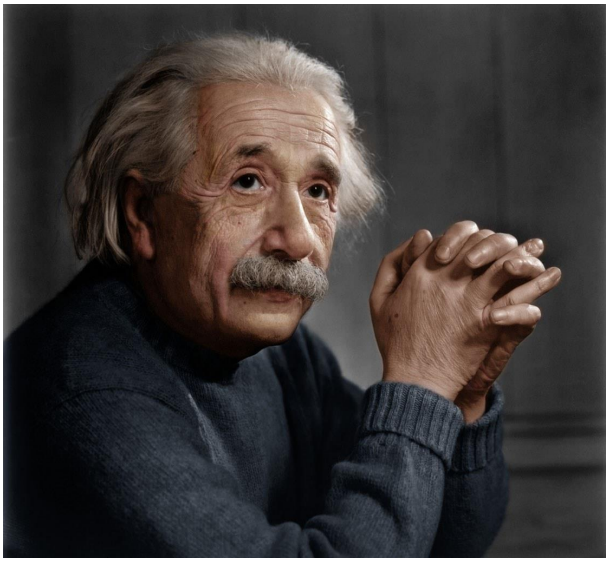
Maths At St John Bosco



1 - "Education is not the learning of facts but the training of the mind to think." – Albert Einstein.

Intent

Mathematics is important in everyday life and, with this is mind; the purpose of Mathematics at St John Bosco Primary School is to develop an ability to solve problems, to reason, to think logically and to work systematically and accurately. All children are challenged and encouraged to excel in Maths. New mathematical concepts are introduced

using a ‘Concrete, Pictorial and Abstract’ approach; enabling all children to experience hands-on learning when discovering new mathematical topics, and allows them to have clear models and images to aid their understanding. Arithmetic and basic math skills are practised daily to ensure key mathematical concepts are embedded and children can recall this information to see the links between topics in Maths.

Implementation

Maths at St John Bosco:

- Basic Maths skills are taught daily. Memory Joggers are used as a means of revisiting and ensuring key concepts from previous domains and years are embedded in long term memory. Memory joggers focus on key mathematical skills, for example place value, the four operations and fractions.
- A range of reasoning resources are used to challenge all children and give them the opportunity to reason with their understanding as part of daily maths lessons.
- Maths meetings and immediate interventions are used to support children to ensure children are ready for their next Maths lesson.
- Children are taught through targeted differentiated small group and mixed ability whole class lessons where a distinct structure of fluency, structure and modelling, applying and reflecting and assessing can be seen in each individual lesson and sequence of lessons.
- Lessons use a Concrete, Pictorial and Abstract approach to guide children through their understanding of mathematical processes.
- Revise and Review consolidation lessons for catch up intervention are used to revisit previous learning and ensure Maths skills are embedded.
- Homework is set to develop and review children's learning.
- Where possible, links are made with other subjects across the curriculum and applied outside maths lessons which support consolidation of learning.

Mastery approach to Mathematics

St John Bosco has adopted the Mastery approach to teaching and learning Mathematics.

Aims of mastery curriculum:

- Provide challenging learning opportunities for all which also allow more able pupils to develop a depth of learning before moving on to new skills.
- As part of curriculum planning, class teachers plan for children to master concepts and apply learning before moving children onto more difficult skills.

- Differentiation will be evident through the use of rich problem solving and reasoning activities and the opportunity to communicate reasoning using precise mathematical language.
- The implementation of the Concrete-Pictorial-Abstract approach (CPA) to teaching and learning to model and scaffold learning for all pupils, especially those working below age-related expectations and with SEN. This will support pupils to develop conceptual understanding alongside procedural fluency.
- The CPA approach is to be visible in all lessons. When first introducing a new concept, children are not shown abstract methods. The new concept is modelled using concrete resources and then visual representations. Children will only be taught abstract methods of recording and solving problems once they have a secure understanding of the concept.
- Provide opportunities to develop language and communication. Children deepen their understanding by explaining, creating problems, justifying and proving using mathematical language. Their use of language also acts as a scaffold for their thinking.
- Provide opportunities to develop mathematical thinking. Children deepen their understanding by asking and investigating questions, by giving examples, by sorting and comparing, or by looking for patterns and rules in the mathematics they are exploring.
- Provide opportunities to develop conceptual understanding. Children deepen their understanding by representing concepts using objects and pictures, making connections between different representations and considering what different representations stress and ignore.
- Provide children with the opportunities to polish and improve their work. This is achieved through response to making and feedback.

Impact

As a result of our Maths teaching at St John Bosco you will see:

- Engaged children who are all challenged.
- Confident children who can talk about Maths and their learning and the links between Mathematical topics.
- Lessons that use a variety of resources to support learning.
- Different representations of mathematical concepts.
- Learning that is tracked and monitored to ensure all children make good progress.

Maths[1] Policy

Curriculum Organisation

[1] https://www.stjohnboscosunderland.org.uk/wp-content/uploads/sites/7/2022/03/mathematicspolicy.pdf

Long Term Plan Maths RTP nursery

ST. JOHN BOSCO RC PRIMARY SCHOOL							
Long Term Plan					Year Group:	Nursery	
	Autumn Term		Spring Term		Summer Term		
Number and Place Value	• Understanding what 'one' means. • Select one. • Recognise the numeral 1. • Represent 1 in different ways. • Subitise 1. • Make comparisons between 1 and more than 1. • Place one object on a 5 frame.	• Understand what 2 is • 1 more than 1 • Select 2 from a larger group • Recognise numeral 2 • Represent 2 in different ways • Subitise 2 • Compare 2 groups- which has fewer/more • Know when one more or less is needed to make the desired total. • Count 2 objects accurately • Place 2 objects on a 5 frame	• Understand 3 is a number after 2 • Select 3 from a group • Count to three • Recognise numeral 3 • Subitise 3 • Know the amount doesn't change if nothing is added or taken away • Place 3 objects on a 5 frame • Understand fingers represent objects in a rhyme	• Subitise and count 4 objects • Recognise more and fewer than 4 • To represent 4 with fingers • Compare amounts • Understand how to make a given number by adding or taking away 1 object • Know that a single object can be split into smaller sized parts and recombined to make the whole • Know that a given number can be made by adding different amounts together • Place 4 objects on a 5 frame	• Subitise 5 items • Count 5 objects accurately • See that 5 can represent actions as well as physical objects • Recognise more and fewer than 5 • Understand fingers represent objects in a rhyme]understand that taking one away is the same as making one less • Compare amounts =, knowing which is the same, which is more and which is fewer • Understand how to make a given number by adding or taking away 1 object. • Know that a given number can be made by adding different amounts together • Represent numbers 0-5 on a 5 frame	• This final half term is used to consolidate children's understanding in all areas covered to date.
Numerical Pattern Space, shape and measure	• 2D shape- circle	• Sorting by colour/shape • Pattern- 2 part patterns • 2D shape- triangle	• 2D shape- Square/Rectangle • Compare length/height • Sort by shape feature (corners, no corners etc.)	• Days of the week/sequencing • Capacity	• Positional language • Weight • Recap 2d shapes	

Long Term Plan Maths RTP reception

ST. JOHN BOSCO RC PRIMARY SCHOOL							
Long Term Plan			**Using WRM as a guide (including continuous provision)**		**Year Group:**	**Reception**	
	Autumn Term		**Spring Term**		**Summer Term**		
Number and Place Value	• Match and Sort • Compare amounts • Representing 1,2 and 3 • Comparing 1,2 and 3 • Composition of 1,2 and 3	• Compare Amounts • Representing numbers to 5 • One more and one less	• Introducing zero • Comparing 4 and 5 • Composition of 4 and 5 • 6,7 and 8	• Counting to 9 and 10 • Comparing numbers to 10	• Building numbers beyond 10 • Counting numbers beyond 10	• Even and Odd • Deepening understanding • Patterns and relationships	
Addition and Subtraction **Multiplication and Division**	•	•	• Combining two amounts • Making pairs	• Bonds to 10	• Adding more • Taking away • Doubling • Sharing and grouping	• Sharing and grouping	
Measure **Shape** **Spatial Thinking**	• Compare size, mass and capacity • Exploring pattern	• Circles and triangles • Positional language • Shapes with 4 sides • Time	• Comparing mass • Comparing capacity • Length and height	• Time • 3-d shapes • Spatial awareness patterns	▪ Spatial reasoning: match, rotate and manipulate ▪ Spatial reasoning: Compose and decompose	▪ Spatial Reasoning: Visualise and build ▪ Spatial reasoning: mapping	

Long Term Plan Maths Y1

ST. JOHN BOSCO RC PRIMARY SCHOOL						
Long Term Plan			**Maths**		**Year Group:**	**1**
	Autumn Term		**Spring Term**		**Summer Term**	
	1st Half	**2nd Half**	**1st Half**	**2nd Half**	**1st Half**	**2nd Half**
Number and Place Value	**Number and Place Value: within 10 (4weeks)** ▪ To sort objects ▪ To count objects ▪ To represent objects ▪ To count, read and write forwards from any number 0 to 10 ▪ To count, read and write backwords from any number 0 to 10 ▪ To count one more ▪ To count one less ▪ To use one-to-one correspondence to start to compare groups ▪ To compare groups using language such as equal, more/greater, less/fewer ▪ To introduce <, > and = symbols ▪ To compare numbers ▪ To order groups of objects ▪ To order numbers ▪ To use ordinal numbers (1st, 2nd, 3rd …) ▪ To use a number line	**Number and Place Value: within 20 (2 weeks)** ▪ To count forwards and backwards and write numbers to 20 in numerals and words ▪ To use numbers 11-20 ▪ To recognise tens and ones ▪ To count one more and one less ▪ To compare groups of objects ▪ To compare numbers ▪ To order groups of objects ▪ To order numbers		**Number and Place Value: within 50 (3 weeks)** ▪ Recognise numbers to 50 ▪ Recognise tens and ones ▪ Represent numbers to 50 ▪ To calculate one more and one less ▪ To compare objects within 50 ▪ To order numbers within 50 ▪ To count in 2s ▪ To count in 5s		**Number and Place Value within 100 (2 weeks)** ▪ To count forwards and backwards within 100 ▪ To partition numbers ▪ To compare numbers ▪ To order numbers ▪ To find one more and one less
Addition and Subtraction **Multiplication and Division** **Fractions**	**Addition: within 10 (3 weeks)** ▪ To use a part-whole model ▪ To use and understand the addition symbol ▪ To find fact families – addition facts ▪ To find number bonds for numbers within 10 ▪ To use number bonds to 10 ▪ To compare number bonds ▪ To explore addition- adding together ▪ To explore addition- adding more	**Subtraction: within 10 (2 weeks)** ▪ To find a part ▪ To explore subtraction- taking away, how many left? Crossing out ▪ To explore subtraction- taking away, how many left? Introducing the subtraction symbol ▪ To explore subtraction- finding a part, breaking apart ▪ To find fact families- the 8 facts ▪ To explore subtraction- counting back ▪ To explore subtraction- finding the difference **Addition and subtraction (1 week)** ▪ To compare addition and subtraction statements a+b > c ▪ To compare addition and subtraction statements a+b > c+d	**Addition and Subtraction: within 20 (3 weeks)** ▪ To add by counting on ▪ To find and make number bonds ▪ To add by making 10 ▪ To explore subtraction- not crossing 10 ▪ To explore subtraction- crossing 10 ▪ To use related facts ▪ To compare number sentences		**Multiplication and Division (3 weeks)** ▪ To count in 2s ▪ To count in 5s ▪ To count in 10s ▪ To make equal groups ▪ To add equal groups ▪ To make arrays ▪ To make doubles ▪ To make equal groups- grouping To make equal groups- sharing **Fractions (2 weeks)** ▪ To find a half ▪ To find a quarter	
Geometry **Measurement**		**Geometry: Shape(1 week)** ▪ To recognise and name 3-D shapes ▪ To sort 3-D shapes ▪ To recognise and name 2-D shapes ▪ To sort 2-D shapes ▪ To explore patterns with 3-D and 2-D shapes	**Measurement: Length and Height (2 weeks)** ▪ To compare lengths and heights ▪ To measure length	**Measurement: Weight and Volume (2 weeks)** ▪ To introduce weight and mass ▪ To measure mass ▪ To compare mass ▪ To introduce capacity and volume ▪ To measure capacity ▪ To compare capacity	**Geometry: Position and Direction (1 week)** ▪ To describe turns ▪ To describe position	**Measurement: Money (1 week)** ▪ To recognise coins ▪ To recognise notes ▪ To count in coins **Measurement: Time (2 weeks)** ▪ To recognise the language of before and after ▪ To use dates ▪ To recognise time to the hour ▪ To recognise time to the half hour
						▪ To write time ▪ To compare time

Long Term Plan Maths Y2

ST. JOHN BOSCO RC PRIMARY SCHOOL

Long Term Plan	Maths	Year Group: 2

	Autumn Term		Spring Term		Summer Term	
	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
Number and Place Value	**Number and Place Value (3weeks)** • To count forwards and backwards within 20 • To recognise and use tens and ones within 20 • To count forwards and backwards within 50 • To recognise and use tens and ones within 50 • To compare numbers within 50 • To count objects to 100 and read and write numbers in numerals and words • To represent numbers to 100 • To use tens and ones with a part-whole model • To recognise tens and ones using addition • To use a place value chart • To compare objects • To compare numbers • To order objects and numbers	**Number and Place Value:** • To count in 2s • To count in 5s • To count in 10s • To count in 3s (if appropriate)	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*
Addition and Subtraction **Multiplication and Division** **Fractions**	**Addition and Subtraction (4 weeks)** • To use fact families for addition and subtraction bonds to 20 • To check calculations • To compare number sentences • To find related facts • To explore and learn bonds to 100 (tens) • To add and subtract 1s • To calculate 10 more and 10 less • To add and subtract 10s • To add by making 10 • To find and make number bonds • To add three 1-digit numbers	**Addition (1 week)** • To add a 2-digit and 1-digit number – crossing ten • To add two 2-digit numbers – not crossing ten – add ones and add tens • Add two 2-digit numbers – crossing ten – add ones and add tens **Subtraction (1 week)** • To use subtraction-crossing10 • To subtract a 1-digit number from a 2-digit number- crossing ten • Subtract a 2-digit number from a 2-digit number – not crossing ten • To subtract a 2-digit number from a 2-digit number – crossing ten – subtract ones and tens **Multiplication and Division (1 week)** • To make equal groups • To add equal groups • To make arrays	**Multiplication and Division (4 weeks)** • To recognise equal groups • To make equal groups • To add equal groups • To write multiplication sentences using the x symbol • To form multiplication sentences from pictures • To use arrays • To make doubles • To explore and learn the 2 times-table • To explore and learn the 5 times-table • To explore and learn the 10 times-table • To make equal groups – sharing • To make equal groups- grouping • To divide by 2 • To divide by 5 • To divide by 10 • To identify odd and even numbers	**Fractions (4 weeks)** • To make equal parts • To recognise a half • To find a half • To recognise a quarter • To find a quarter • To recognise a third • To find a third • To describe unit fraction • To describe non-unit fractions • To recognise the equivalent and one half and two quarters • To find three quarters • To count in fractions	**Multiplication and Division (3 weeks)** • To count in 2s • To count in 5s • To count in 10s • To make equal groups • To add equal groups • To make arrays • To make doubles • To make equal groups- grouping To make equal groups- sharing **Fractions (2 weeks)** • To find a half • To find a quarter	
Geometry **Measurement**		**Measurement: Money (2 weeks)** • To recognise coins and notes	**Statistics (2 weeks)** • To make tally charts	**Geometry: Properties of shapes (2 weeks)**	**Measurement: Length and Height (2 weeks)**	**Measurement: Mass, Capacity and Temperature (3 weeks)**
		• To count money- pence • To count money- pounds (notes and coins) • To count money- notes and coins • To select money • To make the same amount • To compare money • To find the total • To find the difference • To find change • To solve two-step problems	• To draw pictograms (1-1) • To interpret pictograms (1-1) • To draw pictograms (2, 5 and 10) • To interpret pictograms (2, 5 and 10) • To use block diagrams	• To recognise 2-D and 3-D shapes • To count sides on 2-D shapes • To count vertices on 2-D shapes • To draw 2-D shapes • To identify lines of symmetry • To sort 2-D shapes • To make patterns with 2-D shapes • To count faces on 3-D shapes • To count edges on 3-D shapes • To count vertices on 3-D shapes • To sort 3-D shapes • To make patterns with 3-D shapes	• To compare lengths and heights • To measure lengths • To measure lengths (cm) • To measure lengths (m) • To compare lengths • To order lengths • To use the four operations with lengths **Geometry: Position and Direction (2 weeks)** • To describe position • To describe movement • To describe turns • To describe movement and turns • To make patterns with shapes **Measurement: Time (2 weeks)** • To tell time to the hour • To tell time to the half hour • To use o'clock and half past • To use quarter past and quarter to • To tell time to 5 minutes	• To explore weight and mass • To measure mass • To compare mass • To measure mass in grams • To measure mass in kilograms • To explore capacity and volume • To measure capacity • To compare volume • To use millilitres • To use litres • To measure and describe temperature
					• To write time • To use hours and days • To find durations of time • To compare durations of time	

Long Term Plan Maths Y3

ST. JOHN BOSCO RC PRIMARY SCHOOL

Long Term Plan	Maths	Year Group:	3

	Autumn Term		Spring Term		Summer Term	
	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
Number and Place Value	**Number and Place Value (3 weeks)** • To represent numbers to 100 • To identify tens and ones using addition • To identify hundreds • To represent numbers to 1000 • To use 100s, 10s and 1s • To use a number line to 1000 • To find 1, 10 and 100 more or less than a given number • To compare objects to 1000 • To compare numbers to 1000 • To order numbers • To count in 50s	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*
Addition and Subtraction **Multiplication and Division** **Fractions**	**Addition and Subtraction (4 weeks)** • To add and subtract multiples of 100 • To add and subtract 1s • To add and subtract 3-digit and 1-digit numbers – not crossing 10	**Subtraction (2 weeks)** • To subtract a 1-digit number from 2-digits – crossing 10 • To subtract a 1-digit number from a 3-digit number – crossing 10 • To subtract 3-digit and 2-digit numbers – not crossing 100 • To subtract a 2-digit number from a 3-digit number- crossing 100	**Multiplication and Division (3 weeks)** • To consolidate the 2, 4 and 8 times-tables • To compare statements • To find related calculations • To multiply 2-digits by 1-digit	**Number: Fractions (2 weeks)** • To make equal parts • To recognise a half • To find a half • To recognise a quarter • To find a quarter • To recognise a third • To find a third	**Number: Fractions (3 weeks)** • To make a whole • To recognise tenths • To count in tenths • To recognise tenths as decimals • To place fractions on a number line • To find fractiosn-set of objects	
	• To add a 2-digit number and 1-digit number- crossing 10 • To add 3-digit and 1-digit numbers- crossing 10 • To add 3-digit and 2-digit numbers- not crossing 100 • To add3-digit and 2-digit numbers- crossing 100 • To add 100s • To add two 2-digit numbers- crossing 10- add ones and add tens • To add 2-digit and 3-digit numbers – not crossing 10 or 100 • To add a 2-digit and 3-digit numbers- crossing 10 or 100 • To add two 3-digit numbers- not crossing 10 or 100 • To add two 3-digit numbers- crossing 10 or 100 • To spot a pattern-making it explicit • To estimate answers to calculations • To check answers	• To subtract 100s • To subtract a 2-digit number from a 2-digit number – crossing 10 • To subtract a 2-digit and 3-digit number – not crossing 10 or 100 • To subtract a 2-digit number from a 3-digit number – crossing 10 or 100 • To subtract a 3-digit number from a 3-digt number- no exchange • To subtract a 3-digit number from a 3-digit number- exchange • To spot the pattern-making it explicit • To estimate answers to calculations • To check answers **Multiplication and Division (4 weeks)** • To recognise multiplication- equal groups • To use the multiplication symbol • To use arrays • To recall the 2 times-table • To recall the 5 times-table • To make equal groups- sharing • To make equal groups- grouping • To divide by 2 • To divide by 5 • To divide by 10 • To multiply by 3 • To divide by 3	• To divide 2-digits by 1 digit • To use scaling • To explore how many ways	• To describe unit fraction • To describe non-unit fractions • To recognise the equivalent and one half and two quarters • To find three quarters • To count in fractions	• To find equivalent fractions • To compare fractions • To order fractions]to add fractions • To subtract fractions	
		• To learn the 3 times-table • To multiply by 4 • To divide by 4 • To learn the 4 times-table • To multiply by 8 • To divide by 8 • To learn the 8 times-table				
Geometry **Measurement** **Statistics**			**Measurement: Money (1 week)** • To count money-pence • To count money-pounds • To use pounds and pence • To convert pounds and pence • To add money • To subtract money • To give change **Statistics (1 week)** • To make tally charts • To draw pictograms (2, 5 and 10) • To interpret pictograms (2,5 and 10)	**Statistics (1 week)** • To construct and interpret pictograms • To construct and interpret Bar Charts • To construct and interpret tables **Measurement: Length and Perimeter (2 weeks)** • To measure length • To measure length in metres • To find equivalent lengths- m and km • To find equivalent lengths- mm and cm • To compare lengths • To add lengths • To subtract lengths • To measure perimeter • To calculate perimeter	**Measurement: Time (3 weeks)** • To use o'clock and half past • To use quarter past and quarter to • To tell the time to 5 minutes • To tell the time to the minute • To use a.m. and p.m. • To tell time using the 24-hour clock • To find the duration • To compare durations • To calculate start and end times • To measure time in seconds • To calculate the number of hours in a day • To recognise months and years	**Geometry: Properties of shape (2 weeks)** • To describe and calculate turns and angles • To identify right angles in shapes • To compare angles • To draw accurately • To recognise horizontal and vertical • To recognise parallel and perpendicular • To recognise and describe 2-D shapes • To recognise and describe 3-D shapes • To make 3-D shapes **Measurement: Mass and Capacity (3 weeks)** • To compare mass • To measure mass • To add and subtract mass • To compare volume
						• To measure capacity • To add and subtract capacity • To measure and describe temperature

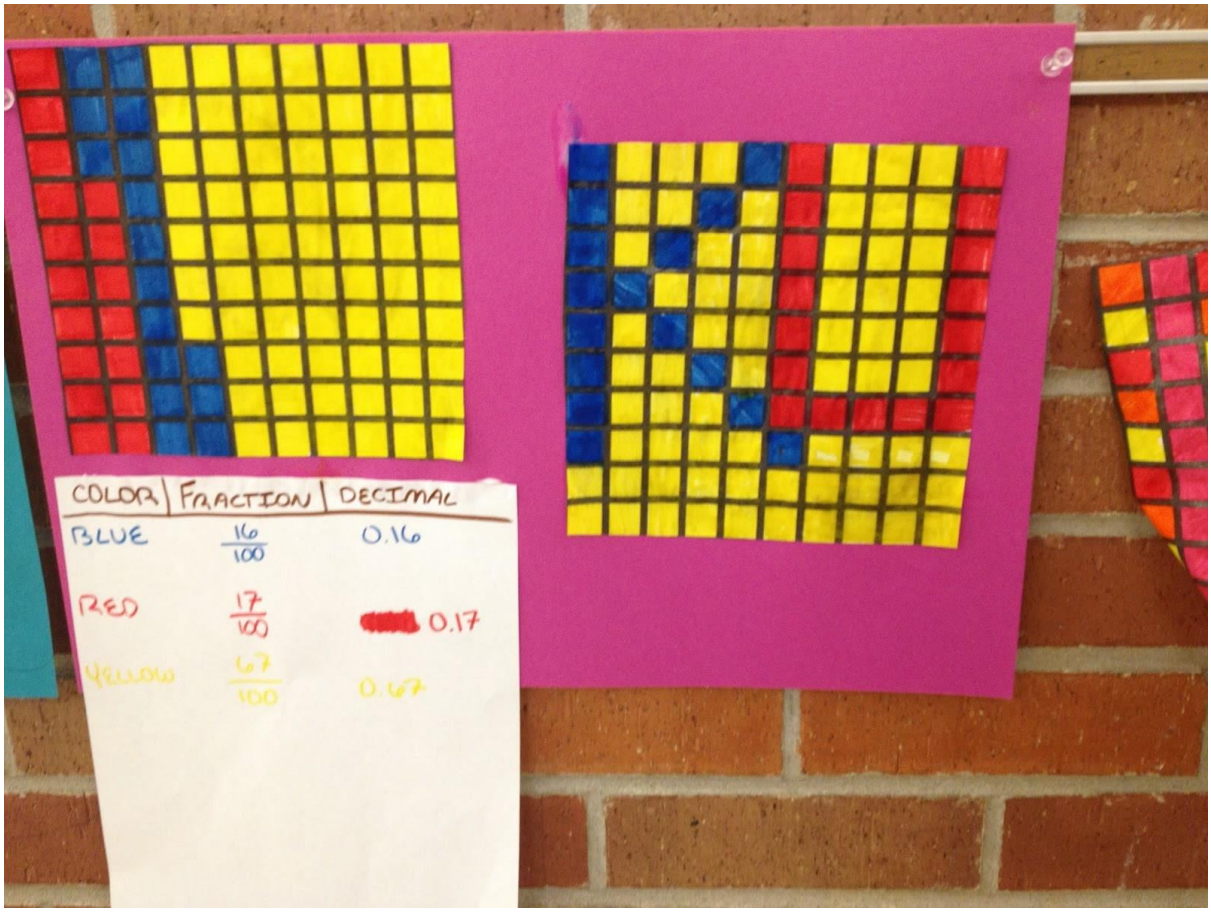
Long Term Plan Maths Y4

ST. JOHN BOSCO RC PRIMARY SCHOOL

Long Term Plan	Maths	Year Group:	4

	Autumn Term		Spring Term		Summer Term	
	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half
Number and Place Value	**Number and Place Value (4 weeks)** • To represent numbers to 1000 • To recognise 100s, 10s and 1s • To use a number line to 1000 • To round to the nearest 10 • To round to the nearest 100 • To count in 1000s • To use partitioning • To use a number line to 10,000 • To find 1, 10, 100 more or less • To calculate 1,000 more or less • To compare numbers • To order numbers • To round to the nearest 1,000 • To count in 25s • To use negative numbers • To recognise Roman 1s to 100	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	**Decimals (3 weeks)** • To recognise tenths and hundredths • To calculate tenths as decimals • To represent tenths on a place value grid • To place tenths on a number line • To divide 1-digit by 10 • To divide 2-digits by 10 • To recognise hundredths • To calculate hundredths as decimals • To represent hundredths on a place value grid • To divide 1 or 2-digits by 100	**Decimals (2 weeks)** • To recall and use bonds to 10 and 100 • To make a whole • To write decimals • To compare decimals • To order decimals • To round decimals • To find halves and quarters	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*
Addition and Subtraction **Multiplication and Division** **Fractions**	**Addition and Subtraction (3 weeks)** • To add and subtract 1s, 10s, 100's and 1000s	**Multiplication and Division (3 weeks)** • To multiply by 10 • To multiply by 100 • To divide by 10 • To divide by 100	**Multiplication and Division (3 weeks)** • To recall the 11 and 12 times-table • To multiply 3 numbers	**Number: Fractions (2 weeks)** • To find equivalent fractions • To find and describe fractions greater than 1	**Number: Fractions (3 weeks)** • To make a whole • To recognise tenths • To count in tenths	
	• To add two 3-digit numbers- not crossing 10 or 100 • To add two 4-digit numbers – no exchange • To add 3-digit numbers – crossing 10 or 100 • To add two 4-digit numbers – one exchange • To add two 4-digit numbers- more than one exchange • Subtract a 3-digit number from a 3-digit number- no exchange • Subtract two 4-digit numbers- no exchange • To subtract a 3-digit number from a 3-digit number- exchange • To subtract two 4-digit numbers- one exchange • To subtract two 4-digit numbers- more than one exchange • To use efficient subtraction • To estimate answers • To use checking strategies	• To multiply by 1 and 0 • To divide by 1 and itself • To multiply and divide by 3 • To recall the 3 times-table • To multiply and divide by 6 • To recall and use the 6 times-table and division facts • To multiply and divide by 9 • To recall and use the 9 times-table and division facts • To multiply and divide by 7 • To recall and use the 7 times-table and division facts	• To find factor pairs • To use efficient multiplication • To use written methods • To multiply 2-digits by 1-digit • To multiply 3-digits by 1-digit • To divide 2-digits by 1-digit **Fractions (1 week)** • To recognise unit and non-unit fractions • To explain what a fraction is • To recognise tenths • To count in tenths	• To count in fractions • To add fractions • To add 2 or more fraction	• To recognise tenths as decimals • To place fractions on a number line • To find fractions- set of objects • To find equivalent fractions • To compare fractions • To order fractions]to add fractions • To subtract fractions	
Geometry **Measurement** **Statistics**		**Measurement: Length and Perimeter (2 weeks)** • To find equivalent lengths- m and cm	**Measurement: Area (1 week)** • To find out what area is		**Measurement: Money (2 weeks)** • To recognise and use pounds and pence • To order money	**Geometry: Properties of shape (2 weeks)** • To describe and calculate turns and angles
		• To find equivalent lengths- mm and cm • To use kilometres • To add lengths • To subtract lengths • To measure perimeter • To calculate perimeter on a grid. • To find the perimeter of a rectangle • To find the perimeter of rectilinear shapes	• To find area by counting squares • To make shapes • To compare area		• To estimate money • To convert pounds and pence • To add money • To subtract money • To find change • To use the four operations with money **Measurement: Time (2 weeks)** • **To tell the time to five minutes** • **To tell the time to the minute** • **To use a.m. and p.m.** • **To use hours, minutes and seconds** • **To recognise years, months, weeks and days** • **To convert analogue to digital- 12 hour** • **To convert analogue to digital – 24 hour** **Statistics (1 week)** • **To interpret charts** • **To make comparisons and find the sum and difference**	• To identify right angles in shapes • To compare angles • To identify angles • To compare and order angles • To recognise and describe 2-D shapes • To identify triangles • To identify quadrilaterals • To identify horizontal and vertical • To identify lines of symmetry • To complete a symmetric figure **Geometry: Position and Direction (2 weeks)** • To describe position • To draw position on a grid • To move on a grid • To describe movement on a grid
					• **To construct and interpret line graphs**	

Long Term Plan Maths Y5



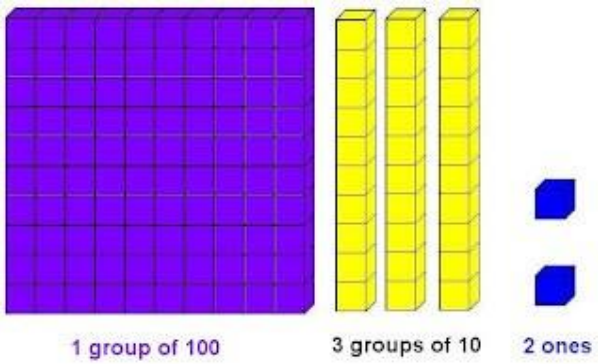
ST. JOHN BOSCO RC PRIMARY SCHOOL						
Long Term Plan			**Maths**		**Year Group:**	5
	Autumn Term		**Spring Term**		**Summer Term**	
	1st Half	**2nd Half**	**1st Half**	**2nd Half**	**1st Half**	**2nd Half**
Number and Place Value	**Number and Place Value (3 weeks)** • To represent 1000s, 100s, 10s and 1s. • To recognise numbers to 10,000 • To round to the nearest 10 • To round to the nearest 100 • To round to the nearest 1,000 • To recognise numbers to 100,000 • To compare and order numbers to 100,000 • To round numbers within 100,000 • To recognise numbers to a million • To count in 10s, 100s, 1000s, 10,000s and 100,000s • To compare and order numbers to one million • To recognise and use negative numbers • To recognise Roman Numerals to 1,000	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	**Decimals and percentages (2 weeks)** • To represent decimals up to 2.d.p • To identify decimals as fractions • To understand thousandths • To represent thousandths as decimals • To round decimals • To order and compare decimals • To understand percentages • To calculate percentages as fractions and decimals • To find equivalent F.D.P	**Decimals (3 weeks)** • To add decimals within 1 • To subtract decimals within 1 • To find compliments to 1 • To add decimals- crossing the whole • To add decimals with the some number of decimal places • To subtract decimals with the same number of decimal places • To add decimals with a different number of decimal places • To subtract decimals with a different number of decimal places • To add and subtract wholes and decimals • To find decimal sequences	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*
					• To multiply decimals by 10, 100 and 1000 • To divide decimals by 10, 100 and 1000	
Addition and Subtraction **Multiplication and Division** **Fractions**	**Addition and Subtraction (2 weeks)** • To add two 4-digit numbers- one exchange • To add two 4-digit numbers- more than one exchange • To add whole numbers with more than 4-digits (column method) • To subtract two 4-digit numbers- one exchange • To subtract two 4-digit numbers- more than one exchange • To subtract whole numbers with more than 4 digits (column method) • To round to estimate and approximate • To use inverse operations • To solve multi-step addition and subtraction problems	**Multiplication and Division (3 weeks)** • To find multiples • To find factors • To find common factors • To find prime numbers • To find square numbers • To find cube numbers • To multiply by 10 • To multiply by 100 • To multiply by 1000 • To divide by 10 • To divide by 100 • To divide by 1000 • To identify multiples of 10, 100 and 1000	**Multiplication and Division (3 weeks)** • To multiply 2-digits by 1-digit • To multiply 3-digits by 1-digit • To multiply 4-digits by 1-digit • To multiply 2-digits (area model) • To multiply 2-digits by 2-digits • To multiply 3-digits by 2-digits • To multiply 4-digits by 2-digits • To divide 2-digits by 1 digit • To divide 3-digits by 1-digit • To divide 4-digits by 1-digit • To divide with remainders **Fractions (2 weeks)** • To identify fractions • To find equivalent fractions • To find fractions greater than 1 • To convert improper fractions to mixed numbers • To convert mixed numbers to improper fractions • To use number sequences with fractions • To compare and order fractions less than 1 • To compare and order fractions greater than 1	**Number: Fractions (3 weeks)** • To add and subtract fractions • To add fractions within 1 • To add 2 or more fractions • To add mixed numbers • To subtract fractions • To subtract mixed numbers • To subtract- breaking the whole • To subtract 2 mixed numbers • To multiply unit fractions by an integer • To multiply non-unit fractions by an integer • To multiply mixed numbers by integers • To calculate fractions of a quantity • To find a fraction of an amount • To use fractions as operators		
Geometry **Measurement** **Statistics**	**Statistics (2 weeks)** • To interpret charts • To use charts to solve comparison, sum and difference problems • To use line graphs • To read and interpret line graphs • To draw line graphs	**Measurement: Perimeter and Area (2 weeks)** • To measure perimeter • To find perimeter on a grid • To find perimeter of rectangles • To find the perimeter of rectilinear shapes • To calculate perimeter • To find area by counting squares • To find the area of rectangles			**Geometry: Properties of shape (3 weeks)** • To identify angles • To compare and order angles • To measure angles in degrees • To measure with a protractor • To draw lines and angles accurately • To calculate angles on a straight line	**Geometry: Position and Direction (2 weeks)** • To describe position • To draw position on a grid • To find position in the first quadrant • To translate shapes • To translate with coordinates • To identify lines of symmetry
	• To use line graphs to solve problems • To read and interpret tables • To use two-way tables • To read timetables	• To find the area of compound shapes • To find the area of irregular shapes			• To calculate angles around a point • To identify types of triangle • To identify quadrilaterals • To calculate lengths and angles in shapes • To identify regular and irregular polygons • To reason about 3-D shapes	• To complete a symmetric figure • To reflect shapes • To reflect with coordinates **Measurement: Converting Units (2 weeks)** • To use and calculate with kilometres • To use and calculate with kilograms and kilometres • To use and calculate with millimetres and millilitres • To identify, use and convert between metric units • To identify, use and convert between imperial units • To convert units of time • To read and use timetables **Measurement: Volume (1 week)** • To recognise and describe volume • To compare volume • To estimate volume • To estimate capacity

Long Term Plan Maths Y6

ST. JOHN BOSCO RC PRIMARY SCHOOL						
Long Term Plan			**Maths**		**Year Group:**	**6**
	Autumn Term		**Spring Term**		**Summer Term**	
	1st Half	**2nd Half**	**1st Half**	**2nd Half**	**1st Half**	**2nd Half**
Number and Place Value	**Number and Place Value (2 weeks)** • To represent numbers to 10,000 • To represent numbers to 100,000 • To represent numbers ti a million • To represent numbers to ten million • To compare and order any number • To round numbers to 10, 100 and 1000 • To round any number • To identify, represent and calculate with negative numbers	*Place value concepts will continue to be a focus in the remaining terms as part of memory jogger and daily maths meetings*	**Decimals (2 weeks)** • To represent decimals up to 2 decimal places • To understand and represent thousandths • To use three decimal places • To multiply by 10, 100 and 1000 • To divide by 10, 100 and 100 • To multiply by 10, 100 and 1000 • To divide by 10, 100 and 1000 • To multiply decimals by integers • To divide decimals by integers • To use division to solve problems • To represent decimals as fractions • To convert fractions to decimals	**Decimals and percentages (2 weeks)** • To represent decimals up to 2.d.p • To identify decimals as fractions • To understand thousandths • To represent thousandths as decimals • To round decimals • To order and compare decimals • To understand percentages • To calculate percentages as fractions and decimals • To find equivalent F.D.P	**Decimals (3 weeks)** • To add decimals within 1 • To subtract decimals within 1 • To find compliments to 1 • To add decimals- crossing the whole • To add decimals with the some number of decimal places • To subtract decimals with the same number of decimal places • To add decimals with a different number of decimal places • To subtract decimals with a different number of decimal places • To add and subtract wholes and decimals • To find decimal sequences	*Consolidation, investigations and preparations for KS3*
					• To multiply decimals by 10, 100 and 1000 • To divide decimals by 10, 100 and 1000	
Addition and Subtraction **Multiplication and Division** **Fractions** **Percentages** **Algebra**	**Addition and Subtraction (2 weeks)** • To add whole numbers with more than 4 digits • To subtract whole numbers with more than 4 digits • To use inverse operations (addition and subtraction) • To solve multi-step addition and subtraction problems • To add and subtract integers **Multiplication and Division (3 weeks)** • To multiply 4-digits by 1-digit • To multiply 2-digits (area model) • To multiply 2-digits by 2-digits • To multiply 3-digits by 2-digits • To multiply up to a 4-digit number by a 2-digit number • To divide 4-digits by 1-digit • To divide with remainders	**Fractions (5 weeks)** • To find equivalent fractions • To simplify fractions • To convert improper fraction to mixed numbers • To convert mixed numbers to improper fractions • To place fractions on a number line • To compare and order fractions using the denominator • To compare and order fractions using the numerator • To add and subtract fractions • To add mixed numbers]to add fractions • To subtract mixed numbers • To subtract fractions • To calculate mixed addition and subtraction • To multiply fractions by integers • To multiply fractions by fractions • To divide fractions by integers • To use the four rules with fractions • To find a fraction of an amount	**Percentages (2 weeks)** • To understand percentages • To convert fractions to percentages • To find equivalent FDP • To order FDP • To find a percentage of an amount • To calculate with percentages- missing values **Algebra (2 weeks)** • To find a rule- one step • To find a rule- two step • To form expressions • To use substitution • To use formulae • To form equations • To solve simple one-step equations • To solve two-step equations • To find pairs of values	**Ratio (2 weeks)** • To use the language of ratio • To represent ratio and fractions • To use the ratio symbol • To calculate using ratio • To use scale factors • To calculate scale factors • To solve ratio and proportion problems **Statistics (1 week)** • To read and interpret line graphs • To draw line graphs • To use line graphs to solve problems • To construct pie charts • To read and interpret pie charts • To construct pie charts with percentages • To draw pie charts • To calculate the mean	*Consolidation, investigations and preparations for KS3*	*Consolidation, investigations and preparations for KS3*
	• To use short division • To divide using factors • To use long division • To find factors • To find common factors • To find common multiples • To find primes to 100 • To find squares and cubes • To use order of operations • To use mental calculations and operations • To reason from known facts	• To find a fraction of an amount- find the whole	• To enumerate possibilities			
Geometry **Measurement** **Statistics**		**Geometry: Position and Direction (1 week)** • To find position in the first quadrant • To find position in the four quadrants • To translate shapes and objects • To reflect shapes and objects			**Geometry: Properties of Shape (3 weeks)** • To measure with a protractor • To draw lines and angles accurately • To calculate angles on a straight line • To find angles around a point • To calculate angles • To find vertically opposite angles • To find angles in a triangle • To find angles in a triangle- special cases	*Consolidation, investigations and preparations for KS3*
					• To find angles in a triangle- missing angles • To find angles in special quadrilaterals • To find angles in regular polygons • To draw shapes accurately • To draw nets of 3-D shapes	

Progression of Skills

1+Progression+Map+Place+Value

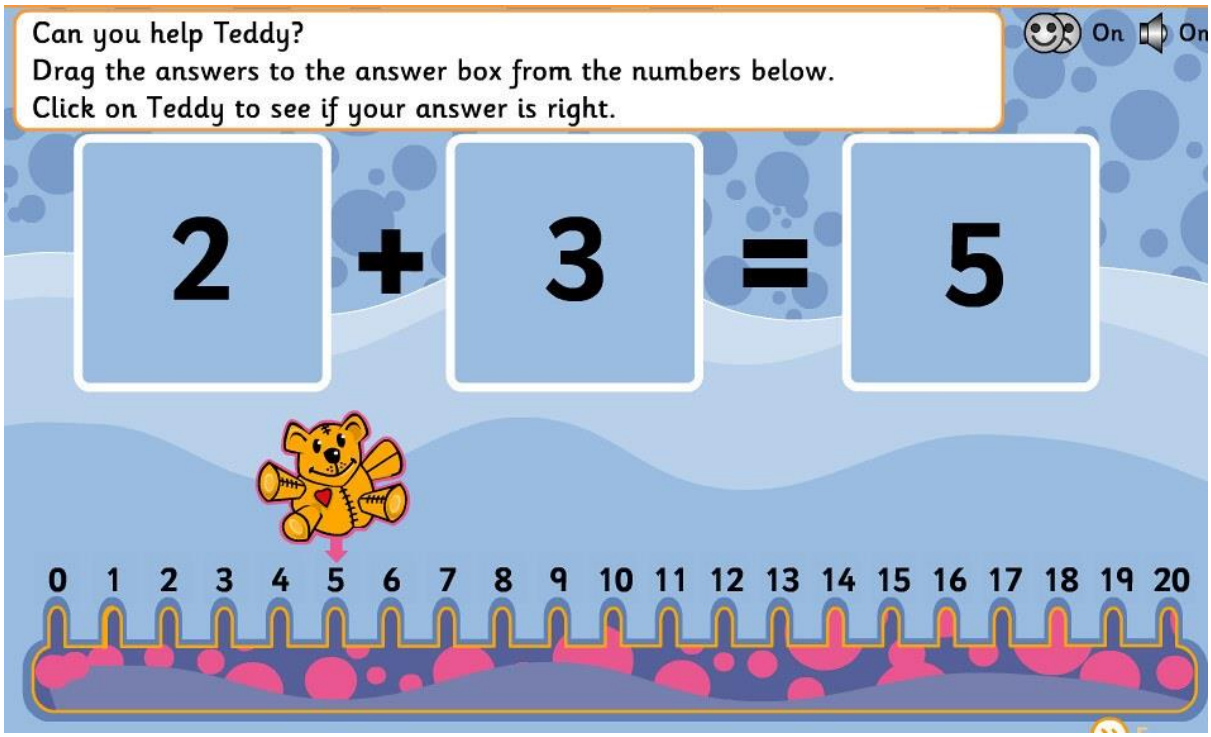


COUNTING							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Subitise up to 3 objects	Rote count beyond 10 Count accurately with 1 to 1 correspondence to 10	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number			count backwards through zero to include negative numbers	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	use negative numbers in context, and calculate intervals across zero
Rote count beyond 5 Secure 1 to 1 correspondence to 5	Accurately count items that cannot be moved	count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward	count from 0 in multiples of 4, 8, 50 and 100;	count in multiples of 6, 7, 9, 25 and 1000	count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	
Know how many they have without needing to recount (Cardinal principle) Show up to 5 using their fingers	Subitise to 5 Subitise (recognise quantities without counting) up to 5.	given a number, identify one more and one less		find 10 or 100 more or less than a given number	find 1000 more or less than a given number		
Recognise the numbers to 5 Match the correct numeral to the corresponding quantity to 5 Represent numbers through mark-making in their own way Find solutions to everyday problems with numbers up to 5	Count and accurately match a group of objects to the corresponding numeral within 10 Verbally count beyond 20, recognising the pattern of the counting system						
COMPARING NUMBERS							
Compare quantities saying 'more than'/'fewer than'	Compare numbers to 10 Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	use the language of: equal to, more than, less than (fewer), most, least	compare and order numbers from 0 up to 100; use <, > and = signs	compare and order numbers up to 1000	order and compare numbers beyond 1 000 *compare numbers with the same number of decimal places up to two decimal places* (copied from Fractions)	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)
IDENTIFYING, REPRESENTING AND ESTIMATING NUMBERS							
	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally	identify and represent numbers using objects and pictorial representations including the number line	identify, represent and estimate numbers using different representations, including the number line	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations		

READING AND WRITING NUMBERS (including Roman Numerals)							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		read and write numbers from 1 to 20 in numerals and words.	read and write numbers to at least 100 in numerals and in words	read and write numbers up to 1 000 in numerals and in words		read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Comparing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value)
				tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks (copied from Measurement)	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.	read Roman numerals to 1 000 (M) and recognise years written in Roman numerals.	
UNDERSTANDING PLACE VALUE							
	Have a deep understanding of number to 10, including the composition of each number.		recognise the place value of each digit in a two-digit number (tens, ones)	recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)	read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)	read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)
					find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths (copied from Fractions)	*recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents*	*identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places* (copied from Fractions)
						(copied from Fractions)	

ROUNDING							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					round any number to the nearest 10, 100 or 1 000	round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000	round any whole number to a required degree of accuracy
					round decimals with one decimal place to the nearest whole number (copied from Fractions)	*round decimals with two decimal places to the nearest whole number and to one decimal place* (copied from Fractions)	*solve problems which require answers to be rounded to specified degrees of accuracy* (copied from Fractions)
PROBLEM SOLVING							
			use place value and number facts to solve problems	solve number problems and practical problems involving these ideas.	solve number and practical problems that involve all of the above and with increasingly large positive numbers	solve number problems and practical problems that involve all of the above	solve number and practical problems that involve all of the above

2+Progression+Map+Addition+and+Subtraction

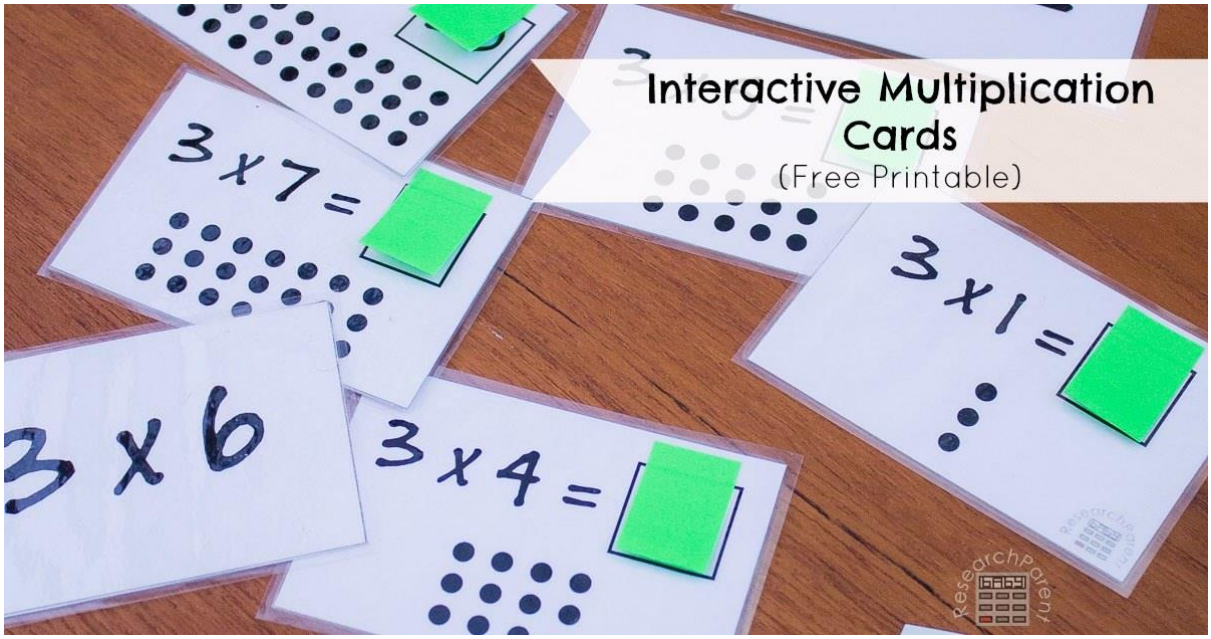


NUMBER BONDS							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	represent and use number bonds and related subtraction facts within 20	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100				
	Recall some number bonds within 10						
MENTAL CALCULATION							
	Name one more and one less than a given number to 10	add and subtract one-digit and two-digit numbers to 20, including zero	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers	add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds		add and subtract numbers mentally with increasingly large numbers	perform mental calculations, including with mixed operations and large numbers
		read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot				use their knowledge of the order of operations to carry out calculations involving the four operations
		(appears also in Written Methods)					

WRITTEN METHODS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation)		add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	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)	
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS					
	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	estimate the answer to a calculation and use inverse operations to check answers	estimate and use inverse operations to check answers to a calculation	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.

PROBLEM SOLVING							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally	solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = [redacted] - 9	solve problems with addition and subtraction: * using concrete objects and pictorial representations, including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	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 addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
			solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement)				Solve problems involving addition, subtraction, multiplication and division

3 Progression Map Multiplication and Division



MULTIPLICATION & DIVISION FACTS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
count in multiples of twos, fives and tens (copied from Number and Place Value)	*count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward* (copied from Number and Place Value)	*count from 0 in multiples of 4, 8, 50 and 100* (copied from Number and Place Value)	*count in multiples of 6, 7, 9, 25 and 1 000* (copied from Number and Place Value)	*count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000* (copied from Number and Place Value)	
	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	recall multiplication and division facts for multiplication tables up to 12 × 12		

MENTAL CALCULATION

		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 (appears also in Written Methods)	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 and divide numbers mentally drawing upon known facts	perform mental calculations, including with mixed operations and large numbers
	show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot		recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers)	multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	*associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)* (copied from Fractions)

WRITTEN CALCULATION

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit	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 multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
		numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Mental Methods)			
				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 numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context 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
					use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals))

PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			recognise and use factor pairs and commutativity in mental calculations (repeated)	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.	identify common factors, common multiples and prime numbers
				know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	*use common factors to simplify fractions; use common multiples to express fractions in the same denomination* (copied from Fractions)
				establish whether a number up to 100 is prime and recall prime numbers up to 19	
				recognise and use square numbers and cube numbers, and the	*calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre*
				notation for squared (^{2}) and cubed (^{3})	*cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3* (copied from Measures)

ORDER OF OPERATIONS

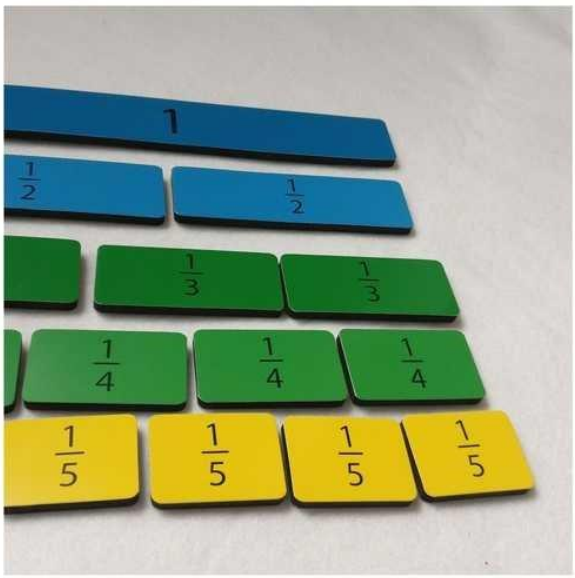
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					use their knowledge of the order of operations to carry out calculations involving the four operations

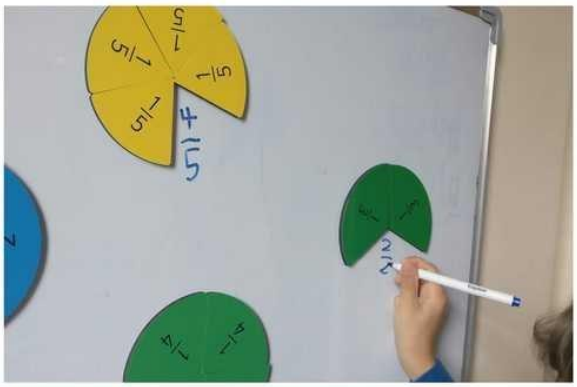
INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS

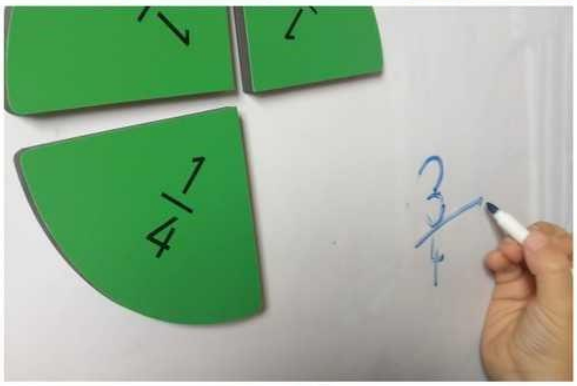
		estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction)	*estimate and use inverse operations to check answers to a calculation* (copied from Addition and Subtraction)		use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy

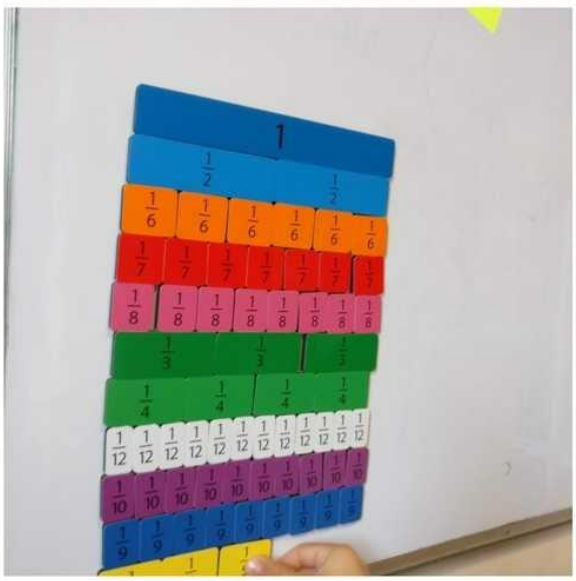
PROBLEM SOLVING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	solve problems involving addition, subtraction, multiplication and division
				solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	
				solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	*solve problems involving similar shapes where the scale factor is known or can be found* (copied from Ratio and Proportion)

4 Progression Map Fractions









COUNTING IN FRACTIONAL STEPS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)	count up and down in tenths	count up and down in hundredths		
RECOGNISING FRACTIONS					
recognise, find and name a half as one of two equal parts of an object, shape or quantity	recognise, find, name and write fractions $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ of a length, shape, set of objects or quantity	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence)	
		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 name a quarter as one of four equal parts of an object, shape or quantity		recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators			
COMPARING FRACTIONS					
		compare and order unit fractions, and fractions with the same denominators		compare and order fractions whose denominators are all multiples of the same number	compare and order fractions, including fractions >1

COMPARING DECIMALS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			compare numbers with the same number of decimal places up to two decimal places	read, write, order and compare numbers with up to three decimal places	identify the value of each digit in numbers given to three decimal places

ROUNDING INCLUDING DECIMALS

			round decimals with one decimal place to the nearest whole number	round decimals with two decimal places to the nearest whole number and to one decimal place	solve problems which require answers to be rounded to specified degrees of accuracy

EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)

	write simple fractions e.g. $^1/_2$ of 6 = 3 and recognise the equivalence of $^2/_4$ and $^1/_2$.	recognise and show, using diagrams, equivalent fractions with small denominators	recognise and show, using diagrams, families of common equivalent fractions	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	use common factors to simplify fractions; use common multiples to express fractions in the same denomination
			recognise and write decimal equivalents of any number of tenths or hundredths	read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$) recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)
			recognise and write decimal equivalents to $^1/_4$; $^1/_2$; $^3/_4$	recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100 as a decimal fraction	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

ADDITION AND SUBTRACTION OF FRACTIONS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		add and subtract fractions with the same denominator within one whole (e.g. $^5/_7 + ^1/_7 = ^6/_7$)	add and subtract fractions with the same denominator	add and subtract fractions with the same denominator and multiples of the same number recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
				statements > 1 as a mixed number (e.g. $^2/_5 + ^4/_5 = ^6/_5 = 1^1/_5$)	

MULTIPLICATION AND DIVISION OF FRACTIONS

				multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^1/_4 \times ^1/_2 = ^1/_8$) multiply one-digit numbers with up to two decimal places by whole numbers
					divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = ^1/_6$)

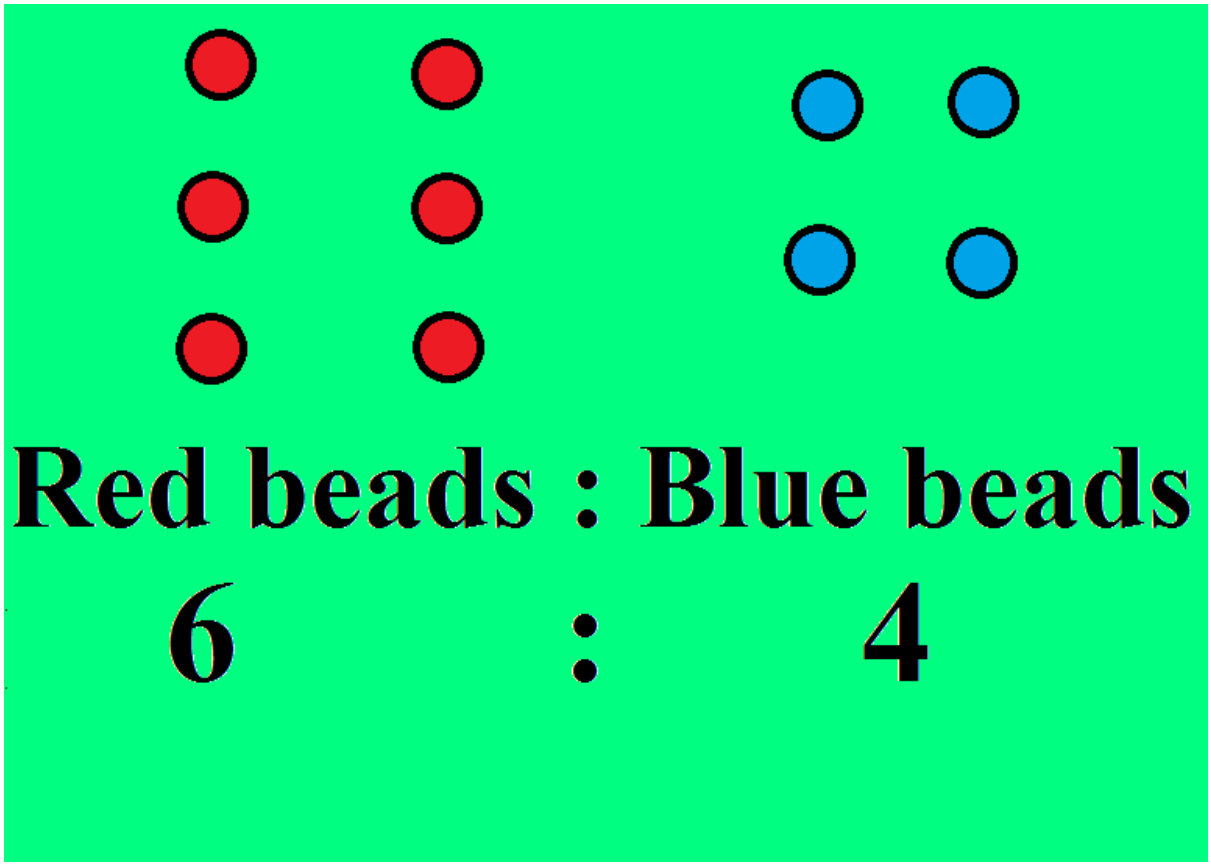
MULTIPLICATION AND DIVISION OF DECIMALS

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
					multiply one-digit numbers with up to two decimal places by whole numbers
			find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths		multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
					identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places
					associate a fraction with division and calculate decimal fraction
					equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)
					use written division methods in cases where the answer has up to two decimal places

PROBLEM SOLVING

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		solve problems that involve all of the above	solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number	solve problems involving numbers up to three decimal places	
			solve simple measure and money problems involving fractions and decimals to two decimal places.	solve problems which require knowing percentage and decimal equivalents of $^1/_2$, $^1/_4$, $^1/_5$, $^2/_5$, $^4/_5$ and those with a denominator of a multiple of 10 or 25.	

5 Progression Map Ratio and Proportion



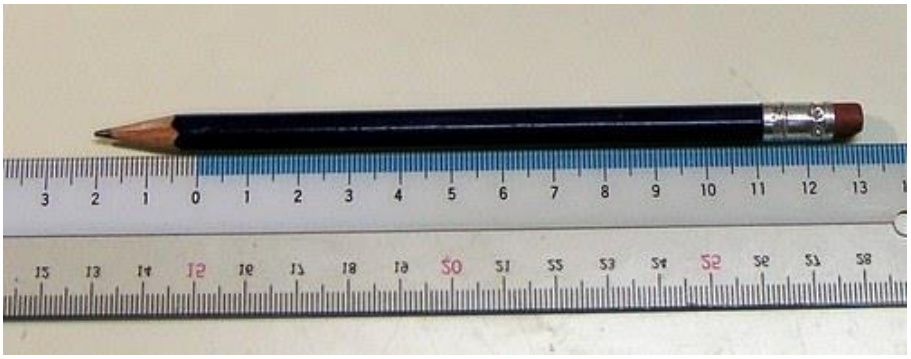
Statements only appear in Year 6 but should be connected to previous learning, particularly fractions and multiplication and division					
					Year 6
					solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
					solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
					solve problems involving similar shapes where the scale factor is known or can be found
					solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

6 Progression Map Algebra

EQUATIONS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and ***missing number problems*** *such as* *7 = ■ - 9* (copied from Addition and Subtraction)	*recognise and use the inverse relationship between addition and subtraction and use this to check calculations and* ***missing number*** *problems.* (copied from Addition and Subtraction)	solve problems, *including* ***missing number*** *problems, using number facts, place value, and more complex addition and subtraction.* (copied from Addition and Subtraction) *solve problems, including* ***missing number*** *problems, involving multiplication and division, including integer scaling* (copied from Multiplication and Division)		*use the properties of rectangles to deduce related facts and find* ***missing lengths and angles*** (copied from Geometry: Properties of Shapes)	express missing number problems algebraically
	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 (copied from Addition and Subtraction)				find pairs of numbers that satisfy number sentences involving two unknowns
represent and use number bonds and related subtraction facts within 20 (copied from Addition and Subtraction)					enumerate all possibilities of combinations of two variables

FORMULAE					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
			Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit. (Copied from NSG measurement)		use simple formulae *recognise when it is possible to use* ***formulae*** *for area and volume of shapes* (copied from Measurement)
SEQUENCES					
sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening (copied from Measurement)	*compare and sequence intervals of time* (copied from Measurement) *order and arrange combinations of mathematical objects in patterns* (copied from Geometry: position and direction)				generate and describe linear number sequences

7 Progression Map Measurement



COMPARING AND ESTIMATING							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Compare the size, weight, length and capacity of 2 familiar objects	Compare the length, weight, size and capacity of more than 2 familiar objects	compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later]	compare and order lengths, mass, volume/capacity and record the results using >, < and =		estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)	calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes (also included in measuring) estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)	calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3.
		sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	compare and sequence intervals of time	compare durations of events, for example to calculate the time taken by particular events or tasks			
				estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time)			

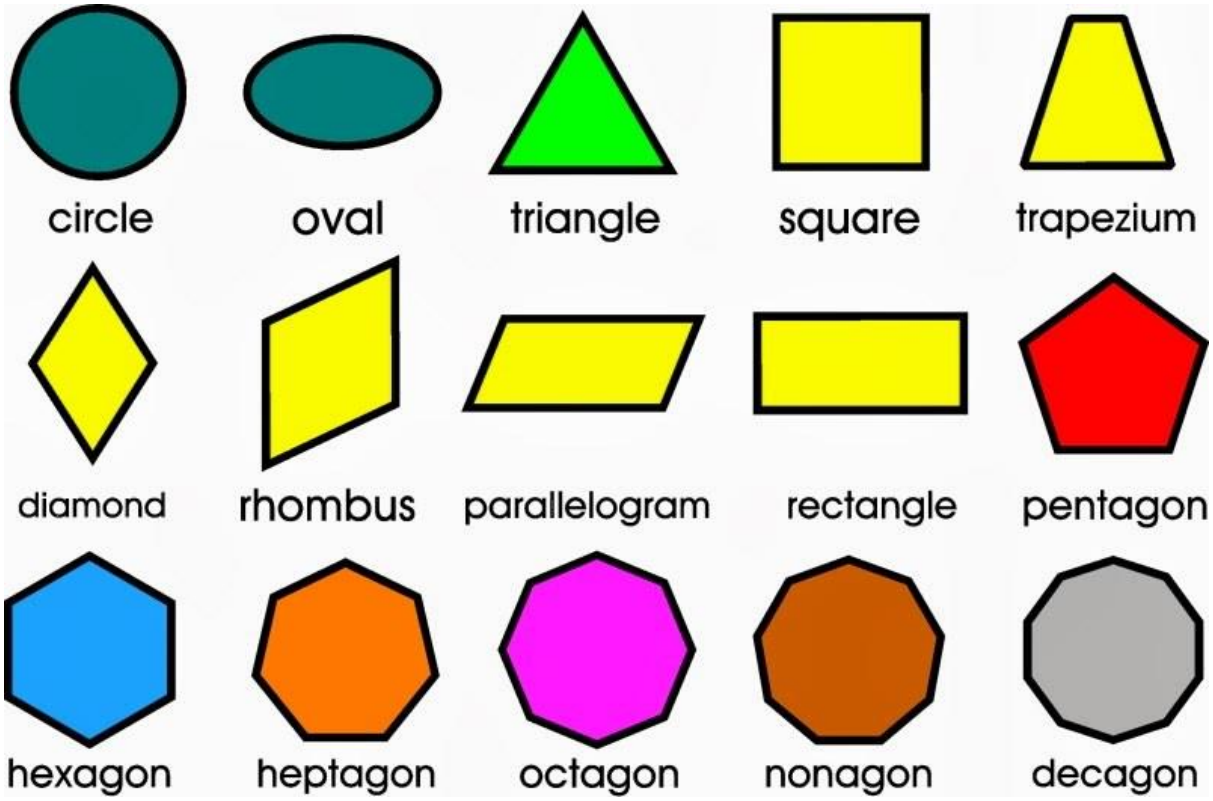
MEASURING and CALCULATING							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		measure and begin to record the following: * **lengths and heights** * **mass/weight** * **capacity and volume** * **time** (hours, minutes, seconds)	choose and use appropriate standard units to estimate and measure **length/height** in any direction (m/cm); **mass** (kg/g); **temperature** (°C); **capacity** (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	measure, compare, add and subtract: **lengths** (m/cm/mm); **mass** (kg/g); **volume/capacity** (l/ml)	estimate, compare and calculate **different measures,** including **money in pounds and pence** (appears also in Comparing)	use all four operations to solve problems involving measure (e.g. **length, mass, volume, money**) using decimal notation including scaling.	solve problems involving the calculation and conversion of **units of measure**, using decimal notation up to three decimal places where appropriate (appears also in Converting)
				measure the **perimeter** of simple 2-D shapes	measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres	measure and calculate the **perimeter** of composite rectilinear shapes in centimetres and metres	recognise that shapes with the same areas can have different **perimeters** and vice versa

MEASURING and CALCULATING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
recognise and know the value of different denominations of **coins and notes**	recognise and use symbols for pounds **(£) and pence (p)**; combine amounts to make a particular value find different combinations of coins that equal the same amounts of money **solve simple problems** in a practical context involving addition and subtraction of money of the same unit, including giving change	add and subtract amounts of **money** to give change, using both £ and p in practical contexts			
			find the area of rectilinear shapes by counting squares	calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes *recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})* (copied from Multiplication and Division)	calculate the area of parallelograms and triangles calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [e.g. mm^3 and km^3]. recognise when it is possible to use formulae for area and volume of shapes

TELLING THE TIME					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)		
recognise and use language relating to dates, including days of the	know the number of minutes in an hour and	estimate and read time with increasing accuracy to the nearest			
week, weeks, months and years	the number of hours in a day. (appears also in Converting)	minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating)			
			solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting)	solve problems involving converting between units of time	

CONVERTING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	know the number of minutes in an hour and the number of hours in a day. (appears also in Telling the Time)	know the number of seconds in a minute and the number of days in each month, year and leap year	convert between different units of measure (e.g. kilometre to metre; hour to minute)	convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)	use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
			read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting)	solve problems involving converting between units of time	solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Measuring and Calculating)
			solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Telling the Time)	understand and use equivalences between metric units and common imperial units such as inches, pounds and pints	convert between miles and kilometres

8 Progression Map Geometry properties of shapes

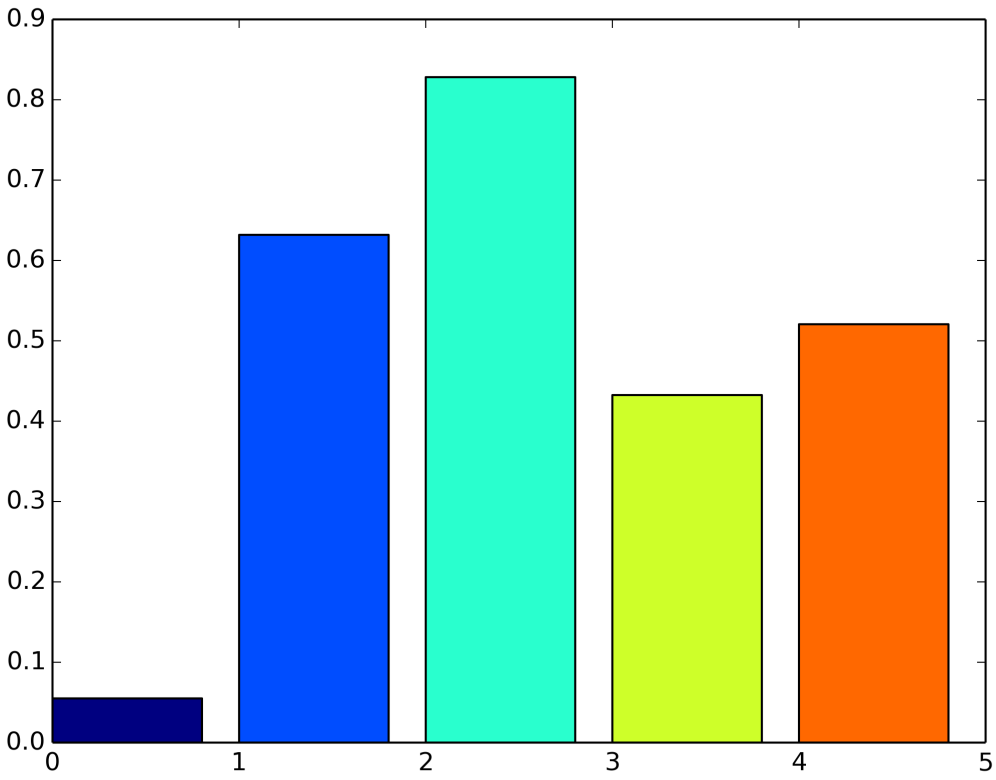


IDENTIFYING SHAPES AND THIER PROPERTIES							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Talk about basic 2D shapes i.e. circle, triangle, square, rectangle using every day and mathematical language		recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].	identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line		identify lines of symmetry in 2-D shapes presented in different orientations	identify 3-D shapes, including cubes and other cuboids, from 2-D representations	recognise, describe and build simple 3-D shapes, including making nets (appears also in Drawing and Constructing)
Talk about familiar 3D shapes using both every day and mathematical language			identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces				illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
			identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]				
DRAWING AND CONSTRUCTING							
Use shapes effectively when building in their play Recognise that they can combine shapes to	Choose, rotate and manipulate a shape to use it effectively			draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	complete a simple symmetric figure with respect to a specific line of symmetry	draw given angles, and measure them in degrees (°)	draw 2-D shapes using given dimensions and angles recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying
make new ones							Shapes and Their Properties)
COMPARING AND CLASSIFYING							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Recognise a shape can have smaller shapes within it		compare and sort common 2-D and 3-D shapes and everyday objects		compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes	use the properties of rectangles to deduce related facts and find missing lengths and angles	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
						distinguish between regular and irregular polygons based on reasoning about equal sides and angles	
		ANGLES					
				recognise angles as a property of shape or a description of a turn		know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	
				identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle	identify acute and obtuse angles and compare and order angles up to two right angles by size	identify: * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and ½ a turn (total 180°) * other multiples of 90°	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles
				identify horizontal and vertical lines and pairs of perpendicular and parallel lines			

9 Progression Map Geometry posistion direction and movement

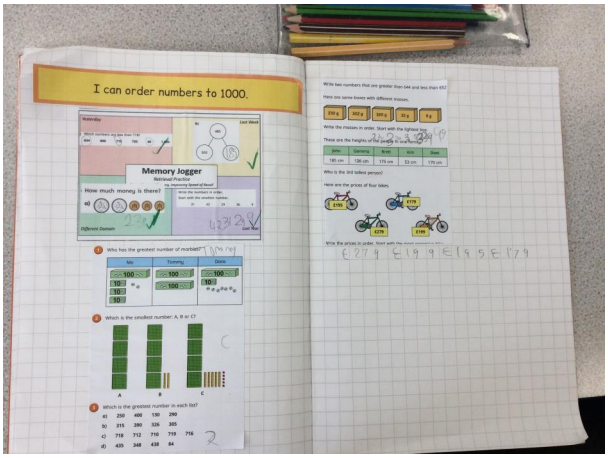
POSITION, DIRECTION AND MOVEMENT							
Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Understand simple position words without visual cues		describe position, direction and movement, including half, quarter and three-quarter turns.	use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)		describe positions on a 2-D grid as coordinates in the first quadrant	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	describe positions on the full coordinate grid (all four quadrants)
Accurately use simple position words					describe movements between positions as translations of a given unit to the left/right and up/down		draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
Describe a familiar route in their own words					plot specified points and draw sides to complete a given polygon		
PATTERN							
Talk about everyday patterns using their own words Create and continue ABAB patterns Correct a mistake in a repeating pattern Use some language of sequencing accurately, e.g. first, then	Copy, continue and create their own repeating pattern		order and arrange combinations of mathematical objects in patterns and sequences				

10 Progression Map Statistics

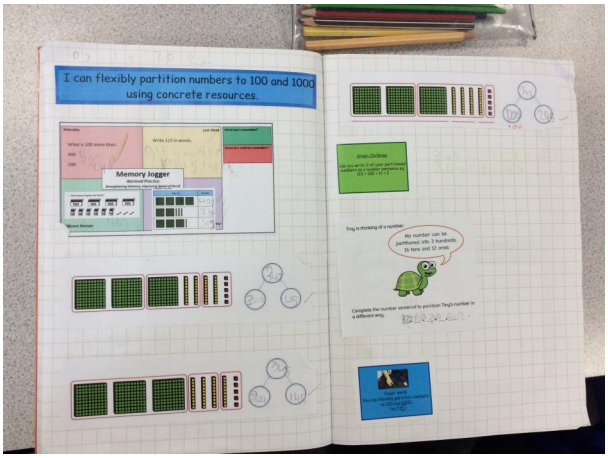


INTERPRETING, CONSTRUCTING AND PRESENTING DATA					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	interpret and construct simple pictograms, tally charts, block diagrams and simple tables	interpret and present data using bar charts, pictograms and tables	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	complete, read and interpret information in tables, including timetables	interpret and construct pie charts and line graphs and use these to solve problems
	ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity				
	ask and answer questions about totalling and comparing categorical data				
SOLVING PROBLEMS					
		solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	solve comparison, sum and difference problems using information presented in a line graph	calculate and interpret the mean as an average

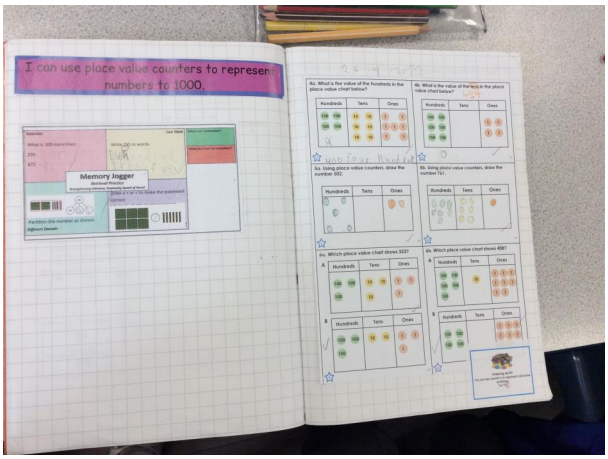
Pupil Voice



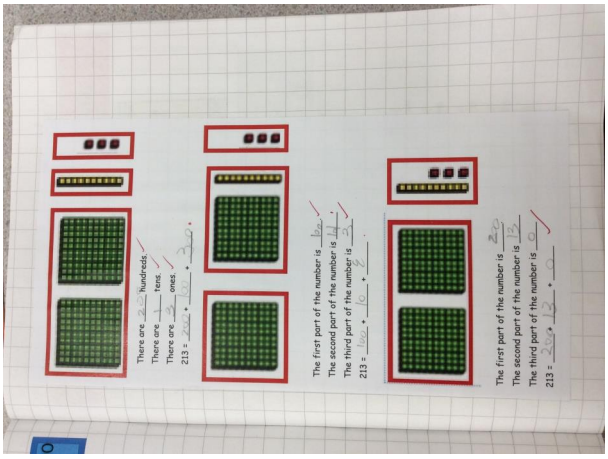
2 - "Memory joggers help me to remember what we have been doing."



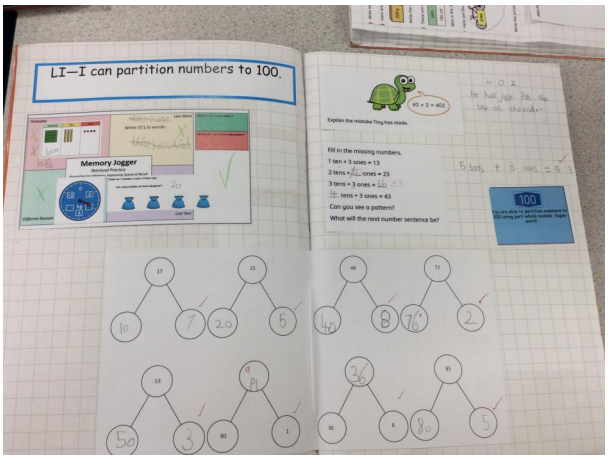
3 - "I like using pictures to help me work things out."



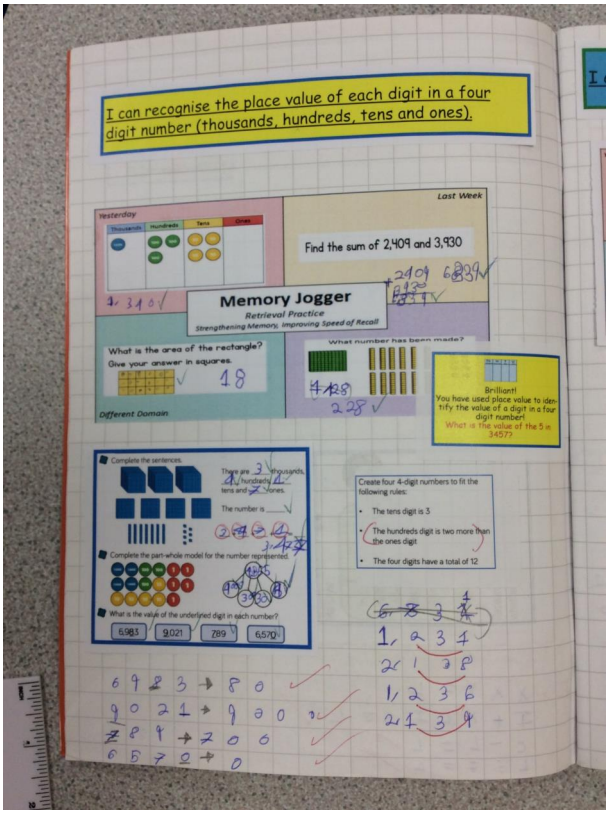
4 - "I can use place value counters to help me find the answers by myself."



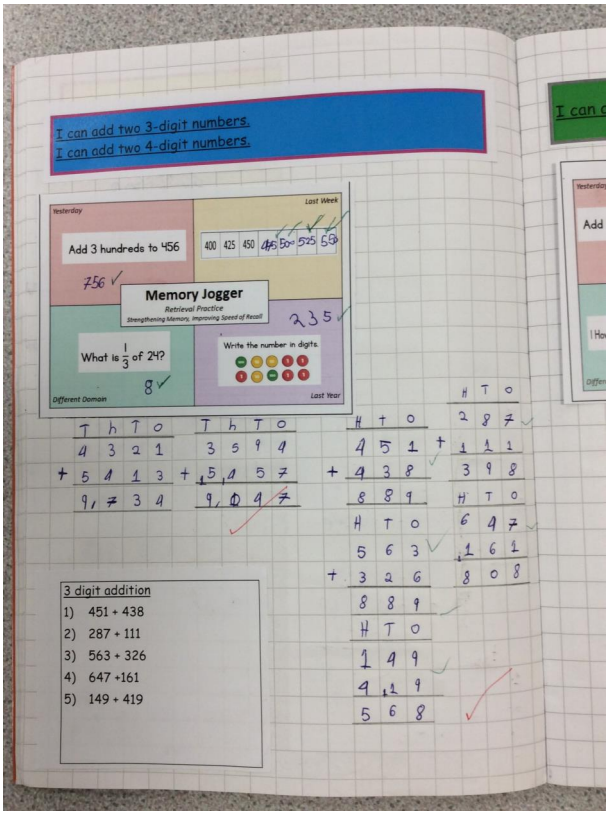
5 - "We get sentences to help us to explain what we can see/"

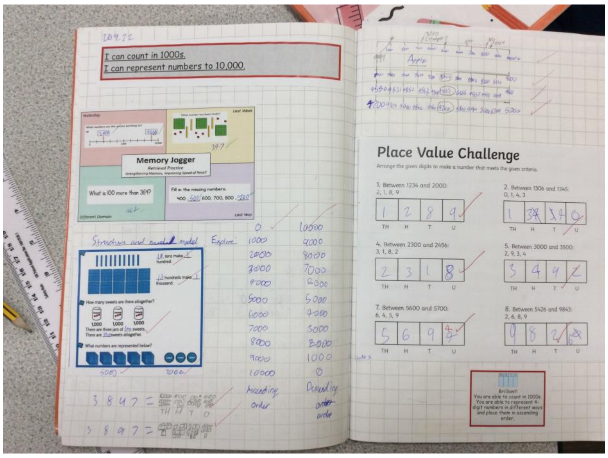


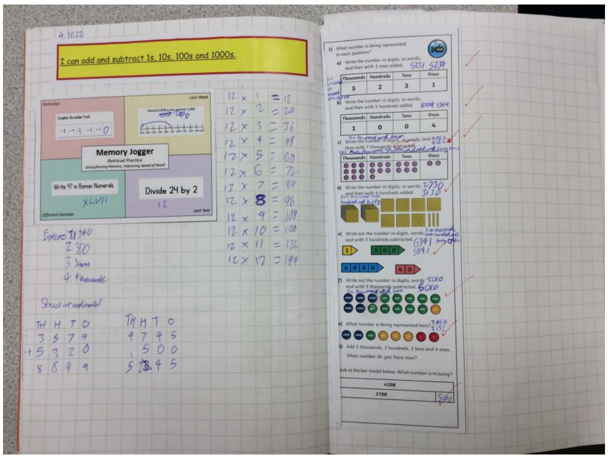
6 - "I think maths is fun because we do it in lots of different ways."

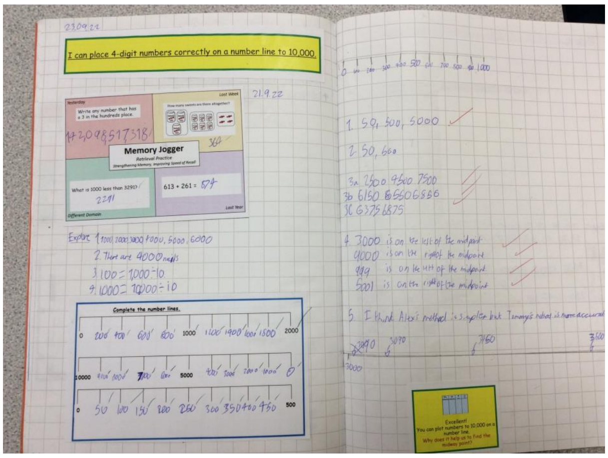


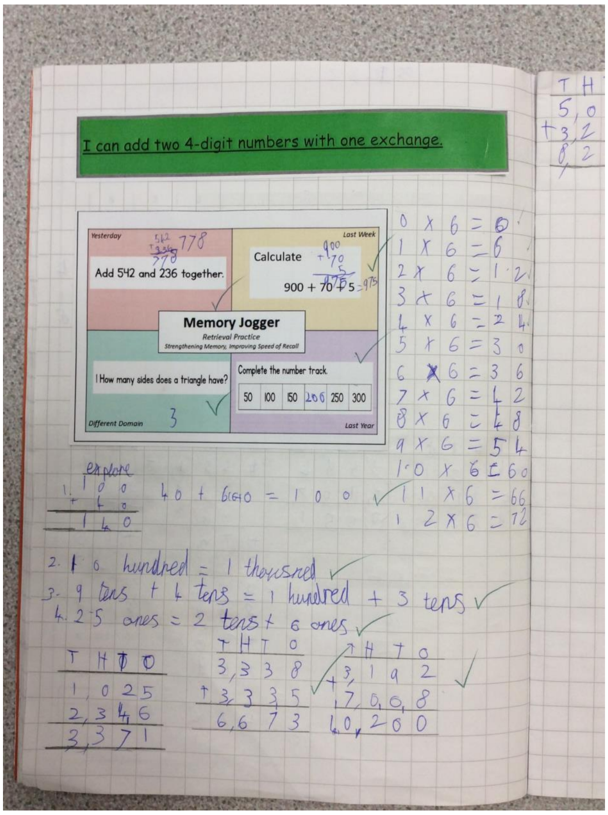
7 - "Sometimes maths can be tricky but pictures help me work it out."

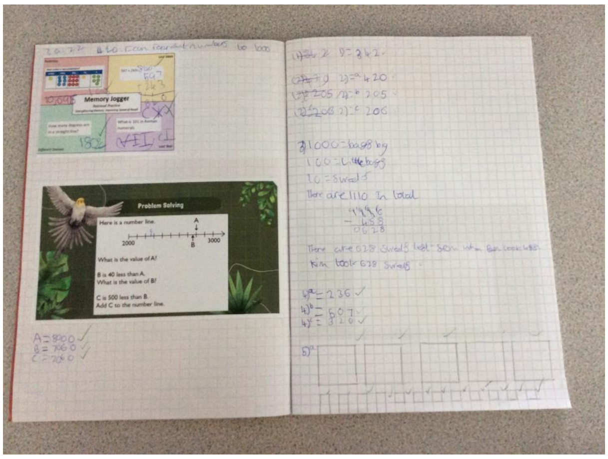


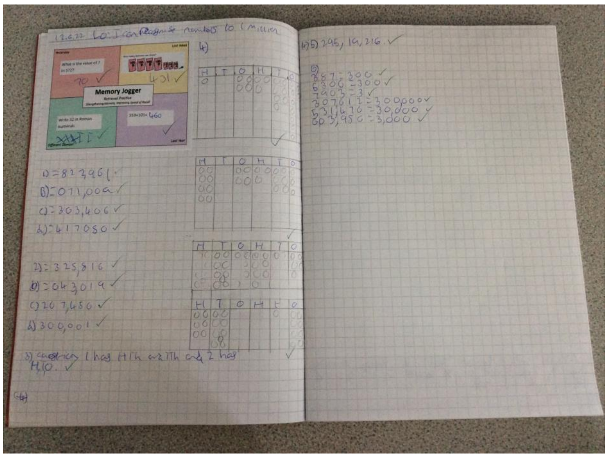

I can count in 1000s.
I can represent numbers to 10,000.
Memory Jogger
What is 100 more than 3917?
Place Value Challenge

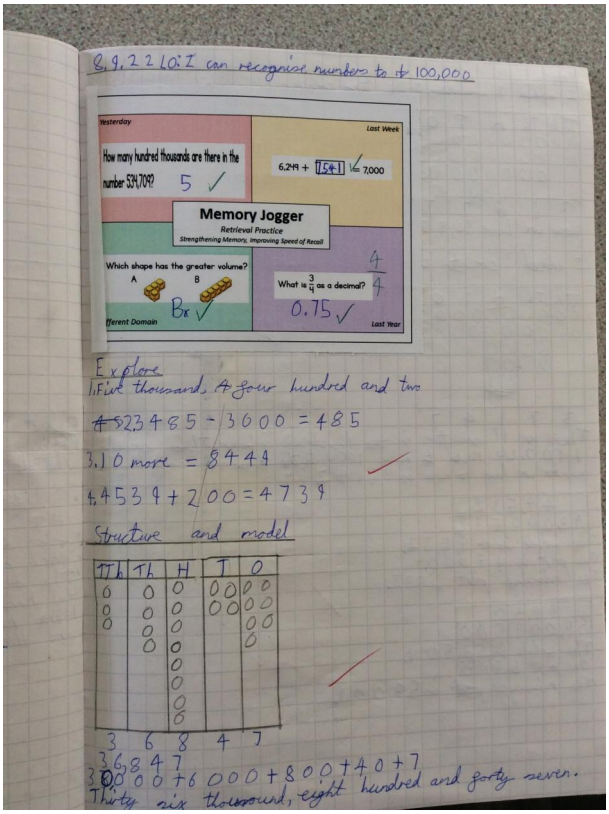

I can add and subtract 1s, 10s, 100s and 1000s.
Memory Jogger
Write 47 in Roman Numerals
Divide 24 by 2

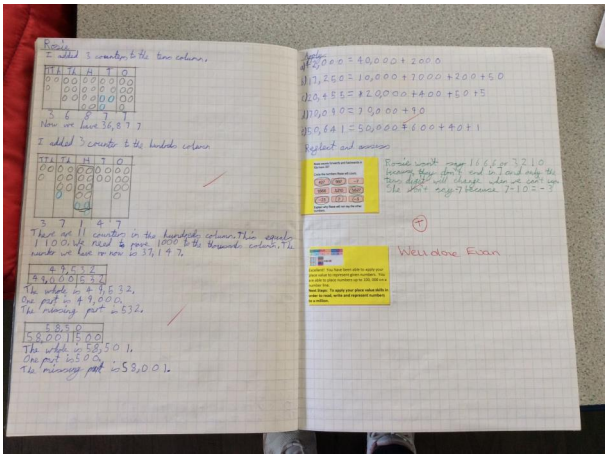

I can place 4-digit numbers correctly on a number line to 10,000.
Memory Jogger
What is 1000 less than 3291?
613 + 261 =
Complete the number lines.

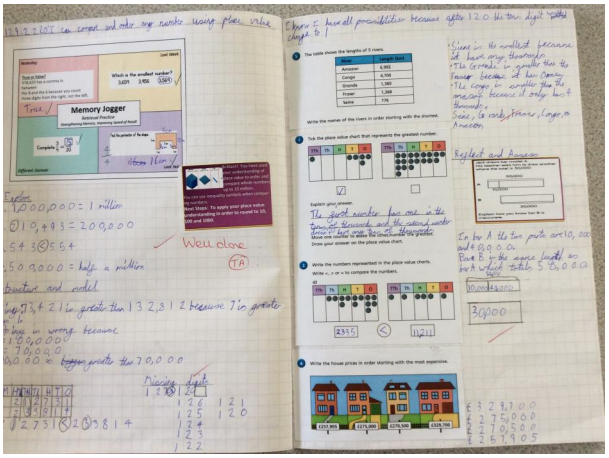

I can add two 4-digit numbers with one exchange.
Yesterday
Add 542 and 236 together.
Last Week
Calculate
900 + 70 + 5
Memory Jogger
Retrieval Practice
Strengthening Memory, Improving Speed of Recall
How many sides does a triangle have?
Complete the number track.
50 100 150 200 250 300
Different Domain
Last Year


Memory Jogger
Problem Solving
Here is a number line.
2000
3000
What is the value of A?
B is 40 less than A.
What is the value of B?
C is 500 less than B.
Add C to the number line.


Memory Jogger


6.2.1 6.2.2 6.2.3 I can recognise numbers to & 100,000
Yesterday
How many hundred thousands are there in the number 534,709?
5
Last Week
6,249 + 751 = 7,000
Memory Jogger
Retrieval Practice
Strengthening Memory, Improving Speed of Recall
Which shape has the greater volume?
A
B
Br
What is 3/4 as a decimal?
0.75
Different Domain
Last Year
Explore
1. Five thousand, four hundred and two
5,402 - 3000 = 485
3. 10 more = 8449
4. 4534 + 200 = 4739
Structure and model
Th | H | T | O
3 6 8 4 7
36,847
30,000 + 6000 + 800 + 40 + 7
Thirty six thousand, eight hundred and forty seven.


Reveal
I added 3 counters to the tens column.
Th | H | T | O
3 7 1 4 7
There are 11 counters in the hundreds column. This equals 1100. We need to move 1000 to the thousands column. The number we have now is 37,147.
4,762
4,000 700 60 2
The whole is 4,762.
One part is 4,000.
The missing part is 762.
58,501
50,000 8,000 500 1
The whole is 58,501.
One part is 500.
The missing part is 58,001.
Explore
40,000 = 40,000 + 2000
17,250 = 10,000 + 7000 + 200 + 50
20,455 = 20,000 + 400 + 50 + 5
10,091 = 10,000 + 90
50,641 = 50,000 + 600 + 40 + 1
Reflect and Answer
Well done Evan


Memory Jogger
Retrieval Practice
Strengthening Memory, Improving Speed of Recall
Well done
Explore
1,000,000 = 1 million
Structure and model
Reflect and Answer

I can solve number and practical problems that involve increasingly large positive numbers.

Magic Vs

Place each of the numbers 1 to 5 in the V shape so that the two arms of the V have the same total.

How many different possibilities are there?

Can you convince someone that you have all the solutions?

What happens if we use the numbers from 2 to 6? From 12 to 16? From 37 to 41? From 103 to 107?

Investigate the same problem with a V that has arms of length 4.

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What do I know?
- I can only use the numbers; 1, 2, 3, 4, 5.
- I can only use each number once.
- The two sides of the V have to add up to the same number.

Skill
I will use trial and improvement to find a solution and all of the possibilities

=12

5 + 3 + 4 = 12

1 + 2 + 3 = 6

This doesn't work because both sides are not equal.
I notice that one side is double the other

26.9.22

4 + 1 + 3 = 8

This combination works because both sides are equal

This combination works because both sides are equal

This combination works because all sides are equal.

Our conjecture is that when there is an odd number at the bottom of the V you can make both sides equal.

What if?
- We change the numbers 2, 3, 4, 5, 6.

Not equal.

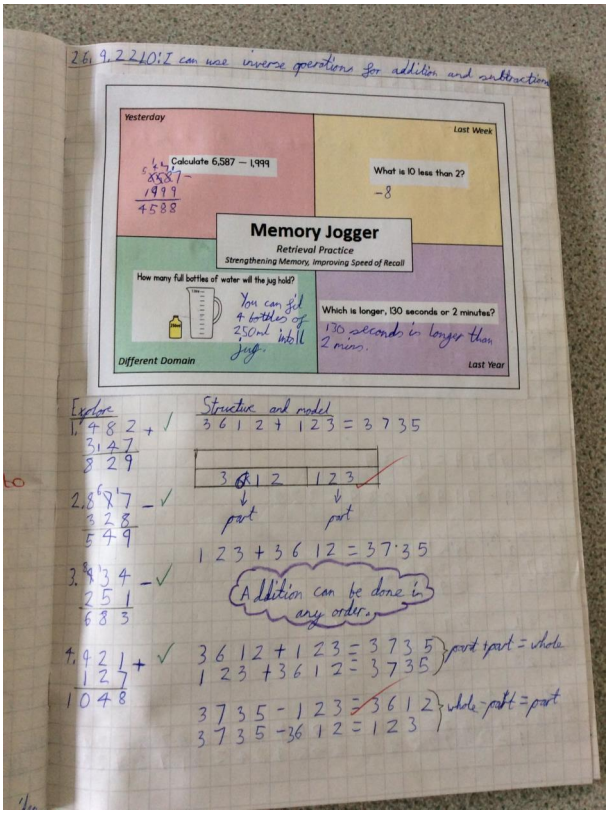
Not equal

I notice that an even number at the bottom gave equal sides

Brilliant! You were able to explain your conjectures to the group.

Brilliant problem solving!
You have worked within the 'Do, Talk, Record' framework to work out a solution to our magic v challenge.
You are starting to work systematically when solving problems.

What would you do differently next time?


26.9.22 LO: I can use inverse operations for addition and subtraction
Yesterday
Calculate 6,587 − 1,999
6587 − 1999 = 4588
Last Week
What is 10 less than 2?
−8
Memory Jogger
Retrieval Practice
Strengthening Memory, Improving Speed of Recall
How many full bottles of water will the jug hold?
You can fill 4 bottles of 250ml bottle jugs.
Which is longer, 130 seconds or 2 minutes?
130 seconds is longer than 2 mins.
Different Domain
Last Year
Explore
1. 482 + 347 = 829 ✓
2. 876 − 328 = 549 ✓
3. 834 − 251 = 583 ✓
4. 421 + 127 = 1048 ✓
Structure and model
3612 + 123 = 3735
3612
123
part
part
123 + 3612 = 3735
Addition can be done in any order.
3612 + 123 = 3735 } part + part = whole
123 + 3612 = 3735
3735 − 123 = 3612 } whole − part = part
3735 − 3612 = 123