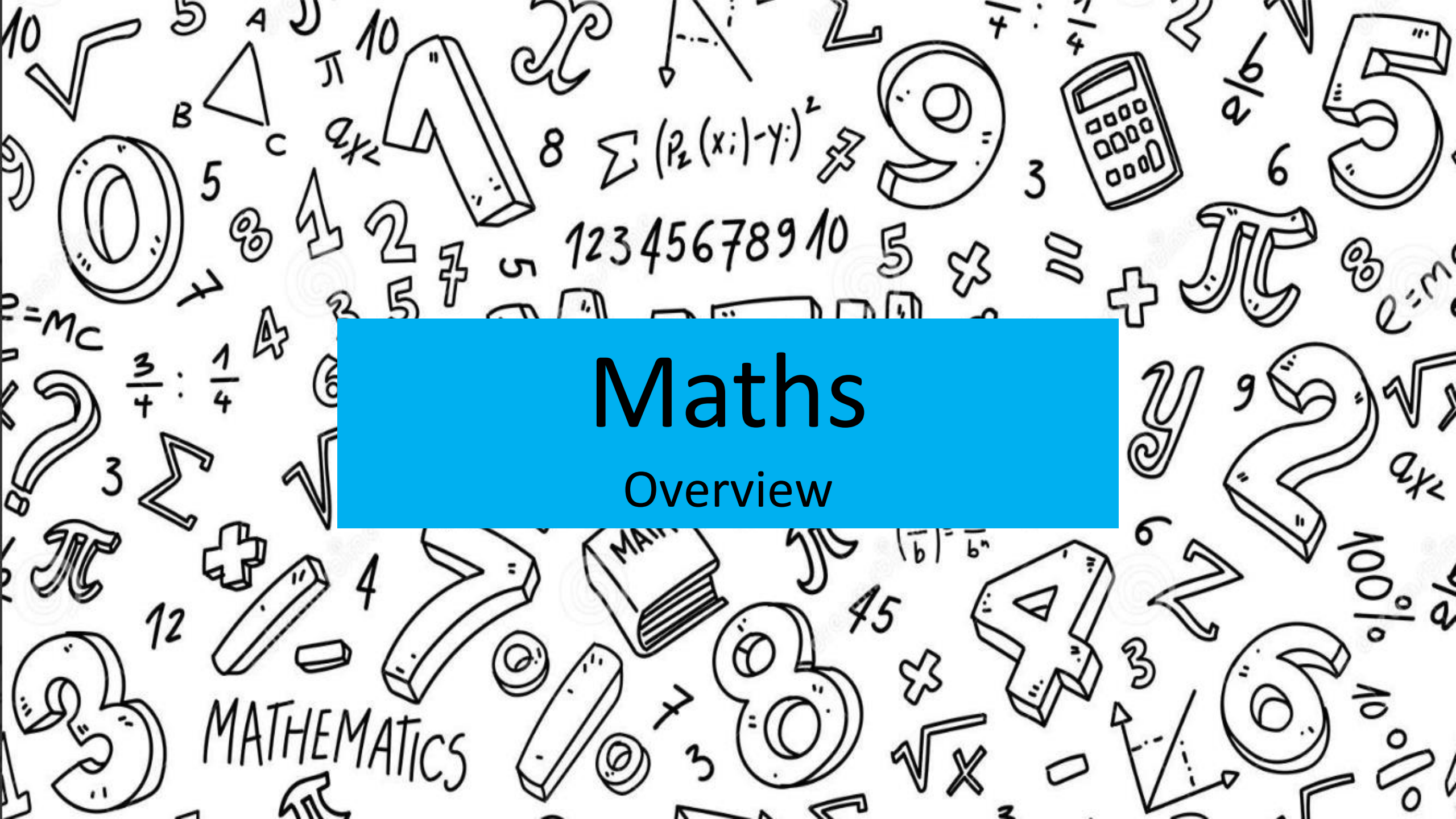




Maths

Overview

Intent Statement

What does maths look like at Golcar JIN School?

It is our intent at Golcar for all our children to be provided with the essential tools, which will allow them to have a deeper understanding of mathematical concepts through the mastery approach. Developing problem solving and reasoning skills is an important thread that runs through our maths lessons. Children are challenged to explain their reasoning, develop their oracy skills and become solution-focused. Learnt skills in maths are applied across the wider curriculum, enabling children to cement information into their long-term memory. Mathematical knowledge will be delivered, using PowerMaths and explored and revisited through our four-part starters. Children will be taught to develop resilience and self-confidence when applying these skills to their learning. The collaboration between learners and their class teacher will drive the learning and develop interpersonal skills. Vocabulary used in lessons will maximise progress and nurture learning opportunities for our pupils. We aim to encourage all our children to achieve their full potential and have high aspirations in maths.

Intent Statement

Why is it important to learn maths?

Maths is an essential skill that enables us to live an independent life. It teaches us how to make sense of the world around us, whether it be: calculating the total amount of money we need to purchase items or budgeting, knowing what time to meet a connecting train or weighing precise amounts of ingredients when following a recipe. Maths prepares us to solve real life problems, using reasoning skills learnt at school.

How do we promote maths at Golcar JIN?

Maths is promoted through national theme days such as NSPCC Number Day and My Money Week. Our children take part in TTRockStar competitions in school and across the pyramid.

Mastering Number

Mastering number aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number. Attention will be given to key knowledge and understanding needed in Reception classes, and progression through KS1 to support success in the future.

In KS2, the project enables pupils in Years 4 and 5 to develop fluency in multiplication and division facts, and a confidence and flexibility with number that exemplifies good number sense.

Currently NCETM Mastering Number is being taught in EYFS, Year 1, 2, 4 and 5. Year 3 and 6 have used elements of the sessions as interventions.

In these year groups, maths starters are reduced to try and accommodate the 20 min lessons.

Golcar Goals

The Golcar Goals have been created using the Ready to Progress document, spearheaded by Debbie Morgan at the NCETM and Development Matters (EYFS). Our goals focus on identifying key mathematical concepts and skills that pupils need to progress successfully through primary mathematics. It aims to provide a coherent and linked curriculum structure, ensuring that learning builds logically over time. Measurement and Statistics are integrated as applications of number criteria, and elements of measurement that relate to shape are included in the Geometry strand. These criteria are not just a set of benchmarks but also a guide for teachers to design lessons and activities that support deep understanding and mastery.

Maths Curriculum Map

	Autumn Term		Spring Term		Summer Term	
Nursery	Colours Matching and sorting	Pattern Number 1 and 2	Numbers 3,4,5	Number 6 Length and height Mass Capacity	Sequencing Positional language More than/ fewer than Shape	Numbers to 5 One more/ One less
Reception	Rote counting Matching and sorting Repeating patterns Numbers 1-5	Repeating patterns Numbers 1-5	Composition of 5 Measures Numbers 6,7,8	Numbers 9 and 10 3D shape Patterns	Number patterns Ordering to 20 Shape and spatial reasoning Addition and subtraction	Doubles Sharing Even and Odd Positional language Problem solving
Year 1	Numbers to 10 Part-whole within 10 Addition within 10 Subtraction within 10 2D and 3D shapes		Numbers to 20 Addition and Subtraction within 20 Numbers to 50 Introducing length and height Introducing mass and capacity		Multiplication and Division Fractions Position and direction Numbers to 100 Money Time	
Year 2	Numbers to 100 Addition and Subtraction Addition and subtraction 2 Properties of Shapes		Money Multiplication and Division Multiplication and Division 2 Length and Height Mass, Capacity and Temperature		Fractions Time Problem solving and efficient methods Position and direction Statistics	

Maths Curriculum Map

	Autumn Term		Spring Term		Summer Term	
Year 3	Place Value within 1000 Addition and Subtraction 1 Addition and Subtraction 2 Multiplication and Division 1 Multiplication and Division 2		Multiplication and Division 3 Length and Perimeter Fractions 1 Mass Capacity		Fractions 2 Money Time Angles and properties of shapes Statistics	
Year 4	Place Value Addition and Subtraction	Division Measurement- Area Multiplication	Multiplication and division B Length and perimeter	Fractions Decimals A	Decimals B Money Time	Shape Statistics Position and direction
Year 5	Place Value within 1,000,000 (1) Place Value within 1,000,000 (2) Addition and Subtraction Multiplication and Division (1) Fractions (1) Fractions (2)		Multiplication and Division (2) Fractions (3) Decimals and Percentages Measure – perimeter and area Graphs and tables		Geometry – properties of shapes Geometry – position and direction Decimals Negative Numbers Measure – converting units Measure - volume	
Year 6	Place Value Four operations Fractions Measures (imperial)		Decimals Percentages Ratio and Proportion Algebra Measures – perimeter, area and volume		Statistics Geometry Problem solving	

Golcar Goals EYFS 3-4

NUMBER

- Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').
- Recite numbers past 5. Say one number for each item in order: 1,2,3,4,5.
- Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').
- Show 'finger numbers' up to 5.
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
- Experiment with their own symbols and marks as well as numerals.
- Solve real world mathematical problems with numbers up to 5.
- Compare quantities using language: 'more than', 'fewer than'

SHAPES, POSITION AND MEASURE

- Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids)
- Use informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.
- Understand position language
- Describe a familiar route.
- Discuss routes and locations, using words like 'in front of' and 'behind'.
- Make comparisons between objects relating to size, length, weight and capacity.
- Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc.
- Combine shapes to make new ones – an arch, a bigger triangle, etc.
- Talk about and identify the patterns around them.
- Extend and create ABAB patterns – stick, leaf, stick, leaf.
- Notice and correct an error in a repeating pattern.
- Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'

Golcar Goals EYFS - GLD

NUMBER

- Recognise numeral to 10
- Order numeral to 10 forwards
- Order numeral to 10 backwards
- Discuss how they know what a number is
- Find missing numbers on a number track

COMPOSITION

- Use number pieces to show composition of numbers 1-10
- Use part wholes to show composition of numbers 1-10
- Use 10 frames and counters to show the composition of numbers 1-10
- See groups of numbers within pictures

SHAPE, POSITION AND MEASURE

- Select, rotate and manipulate shapes to develop spatial reasoning skills.
- Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.
- Continue, copy and create repeating patterns.
- Compare length, weight and capacity.

Golcar Goals Year 1

NUMBER AND PLACE VALUE

Count within 100, forwards and backwards, starting with any number.

Reason about the location of numbers to 20 within the linear number system, including comparing using $<$ $>$ and $=$

NUMBER FACTS

Develop fluency in addition and subtraction facts within 10

Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.

Golcar Goals Year 1

ADDITION AND SUBTRACTION

Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.

Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts

GEOMETRY

Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.

Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.

Golcar Goals Year 2

NUMBER AND PLACE VALUE

Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and nonstandard partitioning.

Reason about the location of any two digit number in the linear number system, including identifying the previous and next multiple of 10.

NUMBER FACTS

Secure fluency in addition and subtraction facts within 10, through continued practice.

ADDITION AND SUBTRACTION

Add and subtract across 10

Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?".

Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two digit number.

Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two digit numbers.

Golcar Goals Year 2

MULTIPLICATION AND DIVISION

Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.

Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division).

GEOMETRY

Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.

Golcar Goals Year 3

NUMBER AND PLACE VALUE

Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.

Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning.

Reason about the location of any three-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10.

Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.

NUMBER FACTS

Secure fluency in addition and subtraction facts that bridge 10, through continued practice.

Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.

Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10).

ADDITION AND SUBTRACTION

Calculate complements to 100.

Add and subtract up to three-digit numbers using columnar methods.

Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.

Golcar Goals Year 3

MULTIPLICATION AND DIVISION

Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.

FRACTION

Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.

Find unit fractions of quantities using known division facts (multiplication tables fluency).

Reason about the location of any fraction within 1 in the linear number system.

Add and subtract fractions with the same denominator, within 1.

GEOMETRY

Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2d shapes presented in different orientations.

Draw polygons by joining marked points, and identify parallel and perpendicular sides.

Golcar Goals Year 4

NUMBER AND PLACE VALUE

Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.

Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning.

Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.

Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.

NUMBER FACTS

Recall multiplication and division facts up to 12×12 , and recognise products in multiplication tables as multiples of the corresponding number.

Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, and interpret remainders appropriately according to the context.

Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100)

MULTIPLICATION AND DIVISION

Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size (measurement link).

Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.

Understand and apply the distributive property of multiplication.

Golcar Goals Year 4

FRACTIONS

Reason about the location of mixed numbers in the linear number system.

Convert mixed numbers to improper fractions and vice versa.

Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.

GEOMETRY

Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.

Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. find the perimeter of regular and irregular polygons.

Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.

Golcar Goals Year 5

NUMBER AND PLACE VALUE

Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.

Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning.

Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.

Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.

Convert between units of measure, including using common decimals and fractions.

NUMBER FACTS

Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.

Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth).

MULTIPLICATION AND DIVISION

Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size (measures link)

Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.

Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.

Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.

Golcar Goals Year 5

FRACTIONS

Find non-unit fractions of quantities.

Find equivalent fractions and understand that they have the same value and the same position in the linear number system.

Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$, and for multiples of these proper fractions.

GEOMETRY

Compare angles, estimate and measure angles in degrees ($^{\circ}$) and draw angles of a given size.

Compare areas and calculate the area of rectangles (including squares) using standard units.

Golcar Goals Year 6

NUMBER AND PLACE VALUE

Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).

Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non-standard partitioning.

Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.

Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.

ADDITION AND SUBTRACTION

Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).

Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.

Solve problems involving ratio relationships.

Solve problems with 2 unknowns.

MULTIPLICATION AND DIVISION

For year 6, md ready-to-progress criteria are combined with as ready-to-progress criteria (please see left).

Golcar Goals Year 6

FRACTIONS

Recognise when fractions can be simplified, and use common factors to simplify fractions.

Express fractions in a common denominator and use this to compare fractions that are similar in value.

Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denominator as a comparison strategy.

GEOMETRY

Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.