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Maths Assessment Guidance

We make tracking forecasts and judgements based on formative and summative assessments that take place throughout the year. For clarity, we do not base our judgements solely on children's scores in the White Rose Maths termly tests, however if a child greatly under or over performed in these tests in comparison to the judgement that you make there would need to be a clear, evidence-based rationale as to why there tracking forecasts/judgements are different.

We have a number of tools available to use to support our assessments of year group objectives.

Summative Assessment

Rising Stars Arithmetic Tests – These must be done fortnightly and scores should be recorded to easily identify progress (an example spreadsheet for this is available).

White Rose Maths Hub Tests – These should be done termly. Do not use the Autumn test just prior to data being collected in Autumn as much of the curriculum content being assessed will not yet have been taught. The same would be true in Spring and Summer. All three tests should be completed throughout the year though. (Where the tests include questions that cover curriculum content that has not yet been taught, please disregard these questions from your summative assessments.) Scores should be recorded to easily identify progress (spreadsheet for this attached).

Formative Assessment

Workbook Chapter Reviews – These should be done on completion of units and will identify gaps/misconceptions.

Hinge/Exit Questions – The first question in the workbook each lesson should be used as a hinge question and assessed with gold/green. This is easily identifiable evidence.

Journal entries – These should provide strong evidence of children's understanding of how to solve a problem.

Independent Journal Entries – these should be done around three weeks after the content has been covered - this will identify gaps/misconceptions. Teachers should indicate their assessment of an independent entry in the child's book: W (emerging), N (expected) or A (exceeding). In the maths section of the curriculum drive you will find exemplified examples of expected level Independent Journal Entries for years 1-6 and example questions for both expected statements and greater depth statements (found in Mastery documents).

EYFS

- **Number ELG. Children at the expected level of development will:**
  • Have a deep understanding of number to 10, including the composition of each number;
  • Subitise (recognise quantities without counting) up to 5;
  • 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.
- **Numerical Patterns ELG. Children at the expected level of development will:**
  • Verbally count beyond 20, recognising the pattern of the counting system;
  • Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
  • Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

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Year 1

Working towards the expected standard			
Recognise the difference between a whole of an object and a part of a whole(i.e. when some of the whole is missing) and that a whole can be split into two or more parts or groups			
Within 10, identify one more or one less			
Count, read and write numbers to 20 in numerals			
Count in twos to 20			
Working at the expected standard			
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 =			
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.			
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			
Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.			
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.			
Working at greater depth within the expected			
Number and place value: the pupil can complete mastery with greater depth problems (Y1 mastery doc, p9-12)			
Addition and subtraction: the pupil can complete mastery with greater depth problems (Y1 mastery doc, p13-16)			
Multiplication and division: the pupil can complete mastery with greater depth problems (Y1 mastery doc, p17-18)			
Fractions: the pupil can complete mastery with greater depth problems (Y1 mastery doc, p19-21)			
Measurement: the pupil can complete mastery with greater depth problems (Y1 mastery doc, p22-26)			
Geometry: the pupil can complete mastery with greater depth problems (Y1 mastery doc, p27-29)			

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Year 2

Working towards the expected standard			
Read and write in numbers up to 100			
Partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources to support them			
Add and subtract two-digit numbers and ones, and two-digit numbers and tens where no regrouping is required, explaining their method verbally, in pictures or using apparatus (eg. 23 + 5; 46 + 20; 16 - 5; 88 – 30)			
Recall at least four of the six number bands for 10 and reason about associated facts (e.g. 6+4=10, therefore 4+6=10 and 10-6=4)			
Count in twos, fives and tens from 0 and use this to solve problems			
Know the value of different coins			
Name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres)			
Working at the Expected Standard			
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.			
Secure fluency in addition and subtraction facts within 10.			
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.			
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.			
Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.			
Working at a greater depth than expected			
Number and place value: read scales where not all numbers on the scale are given and estimate points in between			
Multiplication and division: recall and use multiplication and division facts for 2,5 and 10 and make deductions outside known multiplication facts; solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?')			
Addition and subtraction: use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g 29 + 17 = 15 + 4 + •; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have? Etc.)			
Measurement: read the time on a clock to the nearest 5 minutes			

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Year 3

Working towards the expected Standard			
Compare, order, read and write numbers up to 200 in numerals and words			
Add and subtract two or three digit multiples of 10 that bridge 100 e.g 70+50; 120-50			
Derive multiplication facts for 4 and 8 times table from their 2 times table (not yet at instant recall)			
Can say and notate known fractions in written form: 1/4, 1/3, 1/2, 2/4, 3/4, e.g. ¾ = three quarters			
Working at the expected standard			
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.			
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).			
Calculate complements (number bonds) 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.			
Apply known multiplication and division facts to solve contextual problems			
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.			
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.			

Working at greater depth within the expected	
Number and place value: the pupil can complete mastery with greater depth problems (Y3 mastery doc p9-12)	
Addition, subtraction, multiplication and division: the pupil can complete mastery with greater depth problems (Y3 mastery doc p13-18)	
Fractions: the pupil can complete mastery with greater depth problems (Y3 mastery doc p19-21)	
Measurement: the pupil can complete mastery with greater depth problems (Y3 mastery doc p22-25)	
Geometry: the pupil can complete mastery with greater depth problems (Y3 mastery doc p26-27)	

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Year 4

Working towards the expected standard			
Calculate money in whole pounds or pence (not at the same time) eg. 39p+65p=104p; £81+£43=£124			
Derive multiplication and division facts for 5,6,7,9,11 and 12 times tables from their 2,3,4,8,and 10 times tables (not recall)			
Multiply two-digit numbers by a one-digit number using manipulatives or repeated addition			
Working at the expected standard			
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 nonstandard 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			
Recall multiplication and division facts up to 12x12, 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)			
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.			
Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.			
Understand and apply the distributive property of multiplication.			
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.			
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.			
Working at greater depth than expected			
Number and place value: the pupil can complete mastery with greater depth problems (Y4 mastery doc p9-11)			
Addition and subtraction: the pupil can complete mastery with greater depth problems (Y4 mastery doc p12-14)			
Multiplication and division: the pupil can complete mastery with greater depth problems (Y4 mastery doc p15-17)			
Fractions: the pupil can complete mastery with greater depth problems (Y4 mastery doc p18-21)			
Measurement: the pupil can complete mastery with greater depth problems (Y4 mastery doc p22-24)			
Geometry: the pupil can complete mastery with greater depth problems (Y4 mastery doc p25-26)			
Statistics: the pupil can complete mastery with greater depth problems (Y4 mastery doc p27-29)			

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Year 5

Working towards the expected standard			
Solve addition and subtraction calculations with more than 4-digit multiples of 1000, including calculations that require regrouping			
Solve problems involving numbers up to two decimal places			
Recognise that all numbers (except 1) have a minimum of two factors (1 and itself) and that any number with factors is a multiple; find factor pairs using times tables e.g. 11x12=132: 11 and 12 are factors of 132 and 132 is a multiple of 11 and 12.			
Add and subtract fractions with the same denominator			
Working at the expected standard			
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 nonstandard 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.			
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).			
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.			
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.			
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 ½, ¼ 1/5 and 1/10 and for multiples of these proper fractions			
Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.			
Compare areas and calculate the area of rectangles (including squares) using standard units.			
Working at a greater depth than expected			
Number and place value: the pupil can complete mastery with greater depth problems (Y5 mastery doc p9-10)			
Addition and subtraction: the pupil can complete mastery with greater depth problems (Y5 mastery doc p11-13)			
Multiplication and division: the pupil can complete mastery with greater depth problems (Y5 mastery doc p14-16)			
Fractions: the pupil can complete mastery with greater depth problems (Y5 mastery doc p17-20)			
Measurement: the pupil can complete mastery with greater depth problems (Y5 mastery doc p21-24)			
Geometry: the pupil can complete mastery with greater depth problems (Y5 mastery doc p25-27)			
Statistics: the pupil can complete mastery with greater depth problems (Y5 mastery doc p28-29)			

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Year 6

Working towards the expected standard			
The pupil can read and write whole number powers of ten up to ten million as a numeral or word, placing commas between the millions, thousands and ones; the pupil can read seven digit numbers that don't contain a place holder and round six-digit or seven-digit numbers to the nearest 100,000 and million			
The pupil can add and subtract six-digit numbers , bridging the millions boundary			
Using models, the pupil can solve problems with one unknown and simple ratio problems e.g. 60 bananas are in the kitchen and 40 are ripe. How many are not ripe? If there are three red counters to every 5 blue counters, how many blue red counters would there be if there was 9 red counters?			
The pupil can multiply two numbers that are multiples of 10 and 100 e.g. 30x400 and both multiply and divide a two-digit number by another two-digit number, including remainders e.g. 98/31=3 r 5			
The pupil can solve problems involving multiplication, division, addition and subtraction using the order of operations, e.g. $10 + 10 \div 5 = 12$			
The pupil can multiply a proper fraction by another proper fraction and divide a proper fraction by a whole number when the whole number is the same as the numerator e.g. $5/8 \div 5 = 1/8$			
Working at the expected standard			
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 nonstandard 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.			
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.			
Recognise when fractions can be simplified, and use common factors to simplify fractions.			
Express fractions in a common denomination 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 denomination as a comparison strategy.			
Solve problems with two unknowns			
Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.			
Working at greater depth within the expected			
Number, place value and four operations: the pupil can complete mastery with greater depth problems (Y6 mastery doc p9-17)			
Fractions and decimals: the pupil can complete mastery within greater depth problems (Y6 mastery doc p18-22)			
Ratio, proportion and algebra: the pupil can complete mastery within greater depth problems (Y6 mastery doc p23-29)			
Measurement and geometry: the pupil can complete mastery within greater depth problems (Y6 mastery doc p30-36)			