HOOK JUNIOR SCHOOL

Y3 Long Term Plan

<table>
<tr><th></th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th></th></tr>
<tr><td>Aut.</td><td colspan="4">Number and Place Value in the Hundreds</td><td colspan="2">Mental Addition</td><td colspan="4">Column Addition</td><td colspan="3">Geometry: angles</td><td>overrun / consolidation</td><td></td></tr>
<tr><td>Spr.</td><td>Mental Subtraction</td><td colspan="4">Column Subtraction</td><td colspan="3">Measures</td><td>Fractions: the Fundamentals</td><td colspan="2">Fractions: Unit Fractions</td><td>Consolidation</td><td></td><td></td><td></td></tr>
<tr><td>Sum.</td><td colspan="2">Fractions: Non-Unit Fractions</td><td>Fractions: Adding and Subtracting Within One</td><td>Fractions Consolidation and Roman Numerals</td><td colspan="3">Time</td><td colspan="2">Statistics</td><td>Geometry: Parallel and Perpendicular</td><td colspan="3">Consolidation of Y3 Curriculum</td><td></td><td></td></tr>
</table>

Year 3 Medium Term Plan - Whole Overview 2024 - 2025

Autumn Term

Each step below is not one lesson or one learning target. Breakdown steps into smaller learning targets, with one learning target per lesson. Use the NCETM spines for the teaching sequence and visuals and use White Rose tasks where they fit alongside other appropriate tasks.

Starters / revision LTs: number bonds to ten and number facts within twenty

Number Facts to 20

Spend 2 to 3 lessons identifying and recognising the number facts to 20. These should be known as the key KS1 facts so knowing children who do not have these yet will inform support needed.

Facts can be explored based on similarity. E.g. one lesson on five and a bit (e.g., how 8 is 5+3), one on doubles and near doubles (e.g. 7 + 7 or 8 + 9), one on crossing the tens boundary (e.g. 9 + 6 or 8 + 6).

Assessment after these lessons on rapid recall of number facts. See TC for details of this.

Number and Place Value in the Hundreds

(approximately 4 weeks)

Spine 1.17: Composition and Calculation – 100 and bridging 100

Explore the additive and multiplicative composition of 100; draw on known strategies and number facts to calculate across the 100 boundary.

1. Use White Rose Y3 (Y2 recap) representing numbers to 100. Use this to assess which representation of number / resources children are familiar with and ensure that the part-part-whole model is familiar.
2. Use the tens and ones lesson that follows on White Rose.

3. **Spine 1.17 Teaching point 1** – There are ten tens in 100; there are 100 ones in 100. 100 can also be composed multiplicatively from 50, 25 or 20, units that are commonly used in graphing and measures.
4. **Spine 1.17 Teaching point 2** – Known addition facts can be used to calculate complements to 100.
5. **Spine 1.17 Teaching point 3** – Known strategies for addition and subtraction across the tens boundary can be combined with unitising to count and calculate across the hundreds boundary in multiples of ten.
6. **Spine 1.17 Teaching point 4** – Knowledge of two-digit numbers can be extended to count and calculate across the hundreds boundary from/to any two-digit number in ones or tens.

Spine 1.18: Composition and Calculation – 3-digit numbers

Explore the composition of three-digit numbers; use place-value and partitioning knowledge to support additive calculation, and extend known additive strategies to three-digit numbers.

1. **Spine 1.18 Teaching point 1** – Three-digit numbers can be composed additively from hundreds, tens and ones; this structure can be used to support additive calculation.
2. **Spine 1.18 Teaching point 2** – Each number on the 0 to 1,000 number line has a unique position.
3. **Spine 1.18 Teaching point 3** – The smallest three-digit number is 100, and the largest three-digit number is 999; the relative size of two three-digit numbers can be determined by examining the hundreds digits, then the tens digits, and then the ones digits, as necessary.
4. **Spine 1.18 Teaching point 4** – Three-digit multiples of ten can be expressed multiplicatively and additively, in terms of tens or hundreds.
5. **Spine 1.18 Teaching point 5** – Known facts and strategies for addition and subtraction within and across ten, and within and across 100, can be used to support additive calculation within 1,000.
6. **Spine 1.18 Teaching point 6** – Familiar counting sequences can be extended up to 1,000.

Mental Addition

(approximately 1 or 2 weeks)

Spine 1.19: Securing Mental Strategies – calculation up to 999 (Addition)

Build on segments 1.15 and 1.16 to equip children with useful calculation strategies for bridging hundreds boundaries, and three- digit numbers; continue to use the partitioning structure to facilitate calculation. Build in opportunities throughout for all children to apply each strategy to a range of number and practical problems.

1. Recap partitioning of two-digit numbers for addition. Y2 spine 1.15, teaching point 2.
2. **Spine 1.19 Teaching point 1** – Known partitioning strategies for adding two-digit numbers within 100 can be extended to the mental addition of two-digit numbers that bridge 100, and addition of three-digit numbers.
3. **Spine 1.19 Teaching point 2** – Transforming addition calculations into equivalent calculations can support efficient mental strategies.

Column Addition

(approximately 4 weeks)

Spine 1.20: Algorithms – column addition

Introduce children to the column algorithm for addition calculations, applying the algorithm to a variety of aggregation and augmentation contexts for two-digit and three-digit numbers; explore regrouping (column total is ten or greater) in detail.

1. **Spine 1.20 Teaching point 1** – Any numbers can be added together using an algorithm called 'column addition'
2. **Spine 1.20 Teaching point 2** – The digits of the addends must be aligned correctly before the algorithm is applied.
3. **Spine 1.20 Teaching point 3** – In column addition, the digits of the addends are added working from the least significant digit (on the right) to the most significant digit (on the left).
4. **Spine 1.20 Teaching point 4** – If any column sums to ten or greater, we must 'regroup'
5. **Spine 1.20 Teaching point 5** – The numbers within each column should be added in the most efficient order.
6. **Choosing an efficient method –** provide the children with a range of opportunities to identify, discuss and use the most efficient method for a given calculation.

Geometry: Angles

Geometry – right angles (approximately 2 week)

Start unit by ensuring that children can identify and group commonly encountered shapes based on number of sides and angles (triangle / quadrilateral / pentagon / hexagon / octagon). Leave identification of quadrilaterals with specific properties such as squares and rectangles until teaching point 4 and 5 below.

Use teaching points, sequence and supporting visuals from the curriculum prioritisation material / ready to progress.

1. **Introduction to shape:** define 2-D and 3-D shapes. To draw a range of 2-D shapes and make 3-D shapes using modelling materials, recognising these in different orientations.

1	Pupils rotate two lines around a fixed point to make different sized angles
2	Pupils draw triangles and quadrilaterals and identify vertices
3	Pupils learn that a right angle is a 'square corner' and identify them in the environment
4	Pupils learn that a rectangle is a 4-sided polygon with four right angles
5	Pupils learn that a square is a rectangle in which the four sides are equal length
6	Pupils cut rectangles and squares on the diagonal and investigate the shapes they make
7	Pupils join four right angles at a point using different right-angled polygons
8	Pupils investigate and draw other polygons with right angles

Mental Subtraction

(approximately 1 week)

Spine 1.19 continued: Securing Mental Strategies – calculation up to 999 (subtraction)

Continue with mental methods but now introduce those for subtraction. Ensure retrieval practice keeps column addition and mental addition retained.

1. Recap partitioning of two-digit numbers for subtraction. Y2 spine 1.16, teaching point 2.
2. **Spine 1.19 Teaching point 3** – Subtraction calculations can be solved using a 'finding the difference' strategy; this can be thought of as 'adding on' to find a missing part.

3. **Spine 1.19 Teaching point 4** – The order of addition and subtraction steps in a multi-step calculation can be chosen or manipulated such as to simplify the arithmetic.

Column Subtraction

(approximately 4 weeks)

Spine 1.21: Algorithms – column subtraction

Introduce children to the column algorithm for subtraction calculations, applying the algorithm to a variety of partitioning, reduction and difference contexts for two-digit and three-digit numbers; explore exchange (insufficient quantity to subtract from in a column) in detail.

1. **Spine 1.21 Teaching point 1** – One number can be subtracted from another using an algorithm called ‘column subtraction’; the digits of the minuend and subtrahend must be aligned correctly; the algorithm is applied working from the least significant digit (on the right) to the most significant digit (on the left).
2. **Spine 1.21 Teaching point 2** – If there is an insufficient number of any unit to subtract from in a given column, we must exchange from the column to the left.

Measures

(approximately 3 weeks)

Use this unit as a context for children to further practice and embed their learning of addition and subtraction (both mental and column methods). Within each of the introductory lessons to different units of measure, spend time physically exploring the relative size of each measure with physical objects in the classroom. Measure using the appropriate tools and estimate the length / mass / capacity of various objects. See TC for guidance.

Lesson 1: Estimating and measuring in cm. Spend time estimating the length of objects and then using a ruler to measure their length in cm. Use some of the tasks from White Rose Length and Perimeter: **Step 1** Measure in metres and centimetres (just the tasks on cm).

Lesson 2: Estimating and measuring in metres and cm. This involves lengths in the format of m and cm (e.g. that table is 1m and 20cm long. Spend time estimating lengths over 1m using metre sticks (such as the width of the sink area, children's own height etc.). Some of the White Rose tasks from step 1 are OK for this but not many.

Lesson 3: Measures in mm. Spend time estimating the length of objects and then using a ruler to measure their length in mm.
Use some of the tasks from White Rose Length and Perimeter: **Step 2** Measure in millimetres.

Lesson 4: Measures in cm and mm. Similar to how lesson 2 combined metres and centimetres, so the same with centimetres and millimetres (e.g. the pencil is 11cm and 4mm long). Use some of the tasks from White Rose Length and Perimeter: **Step 3** Measure in centimetres and millimetres.

Lesson 5: Adding and subtracting and comparing lengths. This could potentially take 2 lessons. Start with practical hands on examples. E.g. children could measure the length of some items of stationery and then ask them to add some of those lengths (using items that have the same length like glue sticks rather than pencils will make it easier to check answers). The stationery context could continue looking at a pencil that gets a certain amount shorter during a week.
Use some of the tasks from White Rose Length and Perimeter: **Steps 8 and 9** as well as creating your own for comparing (questions like 'how much shorter / longer is Amina's pencil than Jack's pencil?').

Lessons 6 to 16: Mass and Capacity. Follow White Roses' progression for their Mass and Capacity unit. Note that the session on equivalent measures do not require conversion using multiplication between different measures. They just look at making 1kg using 1000g grams. Please check if you unsure with this.

Fractions: The Fundamentals

(approximately 1 week)

Spine 3.1: Preparing for fractions: the part–whole relationship

Identify parts and wholes of areas, lengths and sets. Identify equal and unequal parts; make judgements about the relative size of a part to a whole. Find the whole when the size of a part and number of equal parts is known.

1. **Spine 3.1 Teaching point 1** - Any element of a whole is a part: if a whole can be defined, then a part of this whole can be defined
2. **Spine 3.1 Teaching point 2** – A whole can be divided into equal parts or unequal parts
3. **Spine 3.1 Teaching point 3** – The relative size of parts can be compared
4. **Spine 3.1 Teaching point 4** – If one of the equal parts and the number of equal parts are known, these can be used to construct the whole

Fractions: Unit Fractions

(approximately 2 weeks)

Spine 3.2: Unit fractions: identifying, representing and comparing

Learn to name and write unit fractions. Recognise and show unit fractions of areas, lengths and quantities. Relate numerators and denominators to parts and wholes; explore how the greater the denominators, the smaller the unit fraction.

1. **Spine 3.2 Teaching point 1** – A whole can be divided into any number of equal parts
2. **Spine 3.2 Teaching point 2** – Fraction notation can be used to describe an equal part of the whole. One equal part of a whole is called a unit fraction. Each unit fraction has a name
3. **Spine 3.2 Teaching point 3** – Fractional notation can be applied to represent one part of a whole in different contexts
4. **Spine 3.2 Teaching point 4** – Equal parts do not need to look the same
5. **Spine 3.2 Teaching point 5** – Unit fractions can be compared and ordered by looking at the denominator. The greater the denominator, the smaller the fraction
6. **Spine 3.2 Teaching point 6** – If the size of a unit fraction is known, the size of the whole can be worked out by repeated addition of that unit fraction
7. **Additional Teaching Point** – Find unit fractions of quantities using known division facts (multiplication tables, fluency x5, x10, x2, x4 and x8 so should be restricted to finding 1/5, 1/10/ ½, ¼, or 1/8 of quantities). See DfE Maths Guidance - Year 3, page 51-53 (June 2020)

Fractions: Non-Unit Fractions

(approximately 2 weeks)

Spine 3.3: Non-unit fractions: identifying, representing and comparing

Learn to name and write non-unit fractions, recognising them as multiples of unit fractions. Learn that fractions are numbers that can be positioned on a number line. Compare and order fractions with the same denominator or same numerator.

1. **Spine 3.3 Teaching point 1** – All non-unit fractions are made up of more than one of the same fraction *(counting in tenths covered in this teaching point)*
2. **Spine 3.3 Teaching point 2** – Non-unit fractions are written using the same convention as unit fractions. A non-unit fractions has a numerator greater than one
3. **Spine 3.3 Teaching point 3** – When the numerator and the denominator in a fraction are the same, the fraction is equivalent to one whole
4. **Spine 3.3 Teaching point 4** – All unit and non-unit fractions are numbers that can be placed on a number line *(see White Rose summer fractions block for addition reasoning and problem solving questions if required; opportunity for counting in tenths on a number line)*
5. **Spine 3.3 Teaching point 5** – Repeated addition of a unit fraction results in a non-unit fraction
6. **Spine 3.3 Teaching point 6** – When the numerator and the denominator in a fraction are the same, the value of the fraction is one
7. **Spine 3.3 Teaching point 7** – Non-unit fractions with the same denominator can be compared. If the denominators are the same, then the greater the numerator, the greater the fraction
8. **Spine 3.3 Teaching point 8** – Non-unit fractions with the same numerator can be compared. If the numerators are the same, then the greater the denominator, the smaller the fraction

Fractions: Adding and Subtracting Within One

(approximately 1 weeks)

Spine 3.4: Adding and subtracting within one whole

Explore how to add and subtract fractions within one whole where the denominators are the same. Apply prior knowledge of the inverse relationship of addition and subtraction with whole numbers, to fractions.

1. **Spine 3.4 Teaching point 1** – When adding fractions with the same denominators, just add the numerators
2. **Spine 3.4 Teaching point 2** – When subtracting fractions with the same denominators, just subtract the numerators
3. **Spine 3.4 Teaching point 3** – Addition and subtraction of fractions are the inverse of each other, just as they are for whole numbers
4. **Spine 3.4 Teaching point 4** – To subtract from one whole, first convert the whole to a fraction where the denominator and numerator are the same
5. **Create Mini assessment** - Solve mixed fraction problems from all content taught above

Roman Numerals

(approximately 2 lessons)

This is required learning before the unit of time but can be moved to coincide with the History unit on Romans.

1. To recognise that the letters I, V and X represent 1, 5 and 10.
2. To know that multiple letters can represent a single number.
3. To know that when the letter I comes before or after a V or X it shows 1 before or after the value of that letter.
4. Read Roman numerals to 20 (I to XX).
5. Deeper reasoning Roman Numerals lesson.

Time

Time (approximately 2 to 3 weeks)

This is what the children should already be able to do from Year 2:

NC Objectives (revision of Y2):

- 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.

- Know the number of minutes in an hour and the number of hours in a day.
- Compare and sequence intervals of time.

Key vocabulary: hours, minutes, quarter past, quarter to, half past, month, year, calendar, duration, leap year

This is the National Curriculum requirements for Year 3:

National curriculum statutory requirements (p21)

Pupils should be taught to:

- tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
- estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight
- know the number of seconds in a minute and the number of days in each month, year and leap year
- compare durations of events [for example to calculate the time taken by particular events or tasks].

Notes and guidance (non-statutory)

- Pupils use both analogue and digital 12-hour clocks and record their times. In this way they become fluent in and prepared for using digital 24-hour clocks in Year 4

Steps in progression (based on White Rose Scheme of Learning:

NB: These steps are not one lesson or one learning target. Breakdown steps into smaller learning targets, with one learning target per lesson.

Complete AfL prior to teaching this unit to assess children's prior learning and retention of time. Continue with revision of Y2 if children are not secure with telling time to the nearest 5 minutes. If children are secure, progress to Y3.

1. Recap: o'clock and half past
2. Recap: quarter past and quarter to

3. **White Rose Step 1:** Roman numerals to 12
4. Deeper Reasoning Roman Numeral Investigation
5. **White Rose Step 2:** Tell the time to 5 minutes (Y2 recap)
6. **White Rose Step 3:** Tell the time to the minute
7. **White Rose Step 4:** Read time on a digital clock
8. **White Rose Step 5:** Use a.m. and p.m.
9. **White Rose Step 6:** Years, months and days
10. **White Rose Step 7:** Days and hours
11. **White Rose Step 8:** Hours and minutes – use start and ends times
12. **White Rose Step 9:** Hours and minutes – use durations
13. **White Rose Step 10:** Minutes and seconds
14. **White Rose Step 11:** Units of time
15. **White Rose Step 12:** Solve problems with time
16. Mini assessment – use the White Rose End of Block Assessment

Statistics

Data within bar charts, pictograms and tables (approximately 2 weeks)

Use the White Rose statistics sequence of lessons.

1. Drawing and interpreting pictograms.
2. Drawing and interpreting bar charts.
3. Drawing and interpreting tables.
4. Solve one and two step questions (such as how many more / how many fewer) using information presented in scaled bar charts, pictograms and tables.

Geometry: Parallel and Perpendicular

(approximately 1 week)

Geometry – parallel and perpendicular sides in polygons (approximately 2 weeks)

Teaching points, sequence and supporting visuals from the NCETM (curriculum prioritisation material / ready to progress).

1	Pupils make compound shapes by joining two polygons in different ways (same parts, different whole)
2	Pupils investigate different ways of composing and decomposing a polygon (same whole, different parts)
3	Pupils draw polygons on isometric paper
4	Pupils investigate quadrilaterals with and without parallel and perpendicular sides
5	Pupils make and draw compound shapes with and without parallel and perpendicular sides
6	Pupils learn to extend lines and sides to identify parallel and perpendicular lines
7	Pupils make and draw triangles on circular geoboards
8	Pupils make and draw quadrilaterals on circular geoboards
9	Pupils draw shapes with given properties on a range of geometric grids