Whole School Progression by topic

Place Value

Nursery – Development Matters (3 & 4 Yr olds)

- 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.

Reception – ELG taken from Power Maths

- Have a deep understanding of number to 10, including the composition of each number.
- Subitise (recognise quantities without counting) up to 5.
- Recognise 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.
- Subitise (recognise quantities without counting) up to 5.
- Verbally count, (recognising the pattern of the counting system).
- Verbally count beyond 20, recognising the pattern of the counting system.

Y1 – within 10

- Sort groups
- Count objects
- Count objects from a larger group
- Represent objects
- Recognise numbers as words
- Count on from any number
- Count one more
- Count backwards within 10
- Count one less
- Compare groups by matching
- Understand 'fewer', 'more' and 'same'
- Understand 'less than', 'greater than' and 'equal to'
- Compare numbers
- Order a set of objects based on how many
- Order objects and numbers
- Use a number line

Y1 – within 20

- Count forwards and backwards and write numbers to 20
- Understand ten
- Understand 11, 12 and 13
- Understand 14, 15 and 16
- Understand 17, 18 and 19
- Understand 20
- Count one more and one less
- Label a number line to 20
- Understand how to use a number line to 20
- Estimate on a number line to 20
- Compare numbers to 20
- Order numbers to 20

Y1 – within 50

- Count from 20 to 50
- Understand 20, 30, 40 and 50 as multiples of 10
- Count by making groups of tens
- Use groups of tens and ones to make numbers
- Partition into tens and ones
- Use a number line to 50
- Estimate on a number line to 50
- Find one more, one less to 50

Y1 – within 100

- Count forwards and backwards within 100
- Partitioning numbers
- Compare numbers
- Order numbers
- One more, one less

Y2

- Count forwards and backwards within 20
- Count objects to 100 by making 10s
- Understand tens and ones
- Use a place value chart
- Partition numbers to 100
- Write numbers to 100 in words
- Flexibly partition number to 100
- Write numbers to 100 in expanded form
- Use 10s on the number line to 100
- Use 10s and 1s on the number line to 100
- Estimate numbers on a number line
- Compare a number of objects (up to 100)
- Compare numbers (to 100)
- Order objects and numbers (to 100)
- Count in 2s, 5s and 10s
- Count in 3s

Y3

- Represent numbers to 100
- Partition numbers to 100
- Find numbers on a number line to 100
- Count in 100s
- Represent numbers to 1000
- Partition numbers to 1000
- Use flexible partitioning in numbers to 1000
- Understand the value of digits in numbers to 1000
- Find 1, 10, 100 more or less
- Find numbers on a number line to 1000
- Estimate on a number line to 1000
- Compare numbers to 1000
- Order numbers to 1000
- Count in 50s

Y4

- Represent numbers to 1000
- Partition numbers to 1000
- Find missing numbers on a number line up to 1000
- Count in 1000s
- Represent numbers to 10 000
- Partition numbers to 10 000
- Use flexible partitioning of numbers up to 10 000
- Find 1, 10, 100 more or less
- Find missing numbers on a number line up to 10 000
- Estimate on a number line up to 10 000
- Compare numbers to 10 000
- Order numbers to 10 000
- Represent numbers using Roman numerals
- Round to the nearest 10
- Round to the nearest 100
- Round to the nearest 1000
- Round to the nearest 10, 100 or 1000

Y5

- Understand how Roman Numerals are used to represent numbers with up to 1000
- Read and use place value in numbers to 10 000
- Read and use place value in numbers to 100 000
- Read and use place value in numbers to 1 000 000
- Understand powers of 10
- Find 10, 100, 1000, 10 000, 100 000 more or less
- Partition numbers to 1 000 000
- Use a number line with numbers up to 1 000 000
- Compare and order numbers to 100 000
- Compare and order numbers to 1 000 000
- Round to the nearest 10, 100 or 1000
- Round within 100 000
- Round within 1 000 000

Y6

- Understand place value in numbers to 1 000 000
- Understand place value in numbers to 10 000 000
- Read and write numbers to 10 000 000
- Understand powers of 10
- Use a number line to 10 000 000
- Compare and order any integers
- Round any integers
- Understand and use negative numbers

Addition and subtraction

Nursery – Development Matters (3 & 4 Yr olds)

- Develop fast recognition of up to 3 objects, without having to count them individually ('subitising').
- 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').
- Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.
- Solve real world mathematical problems with numbers up to 5.
- Compare quantities using language: 'more than', 'fewer than'.
- Experiment with their own symbols and marks as well as numerals.

Reception – ELG taken from Power Maths

- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.
- Have a deep understanding of number to 10, including the composition of each number.
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 and some number bonds to 10, including double facts.
- Subitise (recognise quantities without counting) up to 5.
- Sorting into two groups – although there is no ELG for this, this objective is useful as link to learning in Y1.

Y1 – within 10

- Understand parts and wholes
- Use part-whole models
- Write number sentences
- Understand fact families – addition facts
- Find number bonds for numbers within 10
- Use systematic methods for finding number bonds within 10
- Recall number bonds to 10
- Understand addition as adding together
- Understand addition by adding more
- Solve addition problems
- Find a part
- Use subtraction to find a part
- Understand that 8 facts can be found using a fact family
- Find 'How many left?' - crossing out
- Find 'How many left?' - taking away
- Use a number line to subtract
- Add or subtract 1 or 2

Y1 – within 20

- Add by counting on within 20
- Add ones using number bonds
- Find and make number bonds to 20
- Find and use doubles
- Find and use near doubles
- Subtract ones using number bonds
- Subtract by counting back
- Subtract – finding the difference
- Use related facts
- Solve missing number problems

Y2

- Recall and use bonds to 10
- Write fact families – for bonds within 20
- Use related facts
- Use bonds to 100 (tens)
- Add and subtract 1s
- Add by making 10
- Add three 1-digit numbers
- Add to the next 10
- Add across a 10
- Subtract across 10
- Subtract from a 10
- Subtract a 1-digit number from a 2-digit number (across a 10)
- Find 10 more, 10 less
- Add two 2-digit numbers (not across a 10)
- Add two 2-digit numbers (across a 10)
- Subtract two 2-digit numbers (not across a 10)
- Subtract two 2-digit numbers (across a 10)
- Complete mixed addition and subtraction problems
- Compare number sentences
- Solve missing number problems

Y3

- Apply number bonds within 10
- Add and subtract 1s
- Add and subtract 10s
- Add and subtract 100s
- Spot patterns
- Add 1s across a 10
- Add 10s across a 100
- Subtract 1s across a 10
- Subtract 10s across 100
- Make connections
- Add two numbers (no exchange)
- Subtract two numbers (no exchange)
- Add two numbers (across a 10)
- Add two numbers (across a 100
- Subtract two numbers (across a 10)
- Subtract two numbers (across 100)
- Add 2-digit and 3-digit numbers
- Subtract a 2-digit from a 3-digit number
- Find and use complements to 100
- Estimate answers
- Use inverse operations
- Make decisions about which operation is needed to solve a problem

Y4

- Add and subtract 1s, 10s, 100s and 1000s
- Add two 4-digit numbers – no exchange
- Add two 4-digit numbers – one exchange
- Add two 4-digit numbers – more than one exchange
- Subtract two 4-digit numbers – no exchange
- Subtract two 4-digit numbers – one exchange
- Subtract two 4-digit numbers – more than one exchange
- Find and use efficient subtraction
- Estimate answers
- Use strategies to check my answers

Y5

- Use mental strategies
- Add whole numbers with more than four digits
- Subtract whole numbers with more than four digits
- Round to check answers
- Use inverse operations (addition and subtraction)
- Solve multi-step addition and subtraction problems
- Compare calculations
- Find missing numbers

Y6

- Add and subtract integers
- Solve multi-step problems
- Understand and use the order of operations
- Use mental calculations and estimation
- Reason from known facts

Multiplication and division

Reception – ELG taken from Power Maths

- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Y1

- Count in 2s (R)
- Count in 5s (R)
- Count in 10s
- Make equal groups
- Add equal groups
- Make arrays
- Make doubles
- Make equal groups – grouping
- Make equal groups – sharing

Y2

- Recognise equal groups
- Make equal groups
- Add equal groups
- Write multiplication sentences using the x symbol
- Write multiplication sentences from pictures
- Use arrays
- Make equal groups – grouping
- Make equal groups – sharing
- Find and recall the 2 times-tables
- Divide by 2
- Double and halve
- Identify add and even numbers
- Find and recall the 10 times-tables
- Divide by 10
- Find and recall the 5 times-tables
- Divide by 5

Y3

- Know that multiplication means equal groups
- Use arrays
- Use and find multiples of 2
- Use and find multiples of 5 and 10
- Make equal groups – sharing and grouping
- Multiply by 3
- Divide by 3
- Use and find multiples of 3
- Multiply by 4
- Divide by 4
- Use and find multiples of 4
- Multiply by 8
- Divide by 8
- Use and find multiples of 8
- Use and find multiples of 2, 4 and 8

- Recall multiples of 10
- Use related calculations
- Use reasoning about multiplication
- Multiply a 2-digit number by a 1-digit number (no exchange)
- Multiply a 2-digit number by a 1-digit number (with exchange)
- Link multiplication and division
- Divide a 2-digit number by a 1-digit (no exchange)
- Divide a 2-digit number by a 1-digit (flexible partitioning)
- Divide a 2-digit number by a 1-digit (with remainders)
- Use scaling
- Find different possibilities to solve problems systematically

Y4

- Multiply and divide by 3
- Multiply and divide by 6
- Recall and use 6 times table facts
- Multiply and divide by 9
- Recall and use 9 times table facts
- Recall and use 3,6 and 9 times table facts
- Multiply and divide by 7
- Recall and use 7 times table facts
- Recall and use 11 times table facts
- Recall and use 12 times table facts
- Multiply by 1 and 0
- Divide by 1 and itself
- Multiply three numbers

- Find factor pairs
- Use factor pairs
- Multiply by 10
- Multiply by 100
- Divide by 10
- Divide by 100
- Use related facts – multiplication and division
- Use informal written methods for multiplication
- Multiply a 2-digit number by a 1-digit number
- Multiply a 3-digit number by a 1-digit number
- Divide a 2-digit number by a 1-digit number
- Divide a 3-digit number by a 1-digit number
- Solve correspondence problems
- Use efficient multiplication strategies

Y5

- Understand multiples
- Understand common multiples factors
- Understand factors
- Understand common factors
- Understand prime numbers
- Understand square numbers
- Understand cube numbers
- Multiply by 10, 100 and 1000
- Divide by 10, 100 and 1000
- Use and calculate multiples of 10, 100 and 1000

- Multiply up to a 4-digit number by a 1-digit number
- Multiply a 2-digit number by a 2-digit number (area model)
- Multiply a 2-digit number by a 2-digit number
- Multiply a 3-digit number by a 2-digit number
- Multiply a 4-digit number by a 2-digit number
- Solve problems with multiplication
- Use short division
- Divide a 4-digit number by a 1-digit number
- Divide with remainders
- Use efficient division
- Solve problems with multiplication and division

Y6

- Find and recall common factors
- Find and recall common multiples
- Understand the uses of divisibility
- Find and use primes to 100
- Find and use square and cube numbers
- Multiply up to a 4-digit number by a 2-digit number
- Solve problems with multiplication
- Use short division
- Divide using factors
- Begin to use long division
- Use long division where there may be remainders
- Solve problems with division
- Solve multi-step problems
- Understand and use the order of operations
- Use mental calculations and estimation
- Reason from known facts

Fractions

Y1

- recognise, find and name a half as one of two equal parts
- recognise, find and name a quarter as one of four equal parts
- Show a half
- Show a quarter
- Group/ share things to get a half or a quarter
- Find a half or a quarter of a group of things

Y2

- Make equal parts
- Recognise a half
- Find a half
- Recognise a quarter
- Find a quarter
- Recognise a third
- Find a third
- Recognise and understand what a unit fraction is
- Recognise and understand what a non-unit fraction is
- Find equivalent fractions for a half and two quarters
- Find three thirds
- Count in fractions
- Problem solve with fractions

Y3

- Make equal parts (R)
- Recognise a half (R)
- Find a half (R)
- Recognise a quarter (R)
- Find a quarter (R)
- Recognise a third (R)
- Find a third (R)
- Recognise and use unit fractions
- Recognise and use non-unit fractions
- Find equivalent fractions (1/2 and 2/4) (R)
- Count in fractions (R)

- Make the whole
- Recognise and find tenths
- Count in tenths
- Write tenths as decimals
- Recognise fractions on a number line
- Find a fraction of a set of objects
- Find a fraction of a set of objects in problem solving
- Find equivalent fractions
- Compare fractions (with the same denominator or unit fractions)
- Add fractions (same denominator)
- Subtract fractions (same denominator)

Y4

- Understand the whole
- Count beyond one
- Partition a mixed number
- Use number line with missed numbers
- Compare and order mixed numbers
- Understand improper fractions
- Convert mixed numbers to improper fractions
- Convert improper fractions to mixed numbers
- Find and use equivalent fractions on a number line
- Find and use equivalent fraction families
- Add two or more fractions
- Add fractions and mixed numbers
- Subtract two fractions
- Subtract from whole numbers
- Subtract from mixed numbers

Y5

- Find fractions equivalent to a unit fraction
- Find fractions equivalent to a non-unit fraction
- Recognise equivalent fractions
- Convert improper fractions to mixed numbers
- Convert mixed numbers to improper fractions
- Compare fractions less than 1
- Order fractions less than 1
- Compare and order fractions greater than 1
- Add and subtract fractions with the same denominator
- Add fractions within 1
- Add fractions with a total greater than 1
- Add to a mixed number
- Add two mixed numbers
- Subtract fractions
- Subtract from a mixed number
- Subtract from a mixed number – break the whole
- Subtract two mixed numbers

Y6

- Find equivalent fractions and simplify fractions
- Find and use equivalent fractions on a number line
- Compare and order fractions looking at the denominator
- Compare and order fractions looking at the numerator
- Add and subtract simple fractions
- Add and subtract any two fractions
- Add mixed numbers
- Subtract mixed numbers
- Solve multi-step problems

- Multiply fractions by integers
- Multiply fractions by fractions
- Divide a fraction by an integer
- Divide any fraction by an integer
- Solve mixed questions with fractions
- Find fraction of an amount
- Find the whole when given a fraction of an amount

Decimals & Percentages

Earlier year groups will be exposed to decimals through experience and learning with topics such as money and measure.
They might also be exposed to percentages in reading statistics for example.

Y4

- Recognise tenths as fractions
- Recognise tenths as decimals
- Place tenths on a place value chart
- Place tenths on a number line
- Divide a 1-digit number by 10
- Divide a 2-digit number by 10
- Recognise hundredths as fractions
- Recognise hundredths as decimals
- Place hundredths on a place value chart
- Divide a 1 or 2-digit number by 100

- Understand how bonds to 10 and 100 can support my understanding of decimals (R)
- Understand how to make a whole from decimal numbers
- Understand how decimals are written using place value knowledge
- Compare decimals with up to 2dp
- Know how to round decimals to the nearest whole
- Recall decimal equivalents for halves and quarters

Y5

- Show understanding of decimals up to 2 places
- Show understanding of equivalent fractions and decimals (tenths)
- Show understanding of equivalent fractions and decimals (hundredths)
- Show understanding of equivalent fractions and decimals
- Show understanding of thousandths as fractions
- Show understanding of thousandths as decimals
- Show understanding of thousandths on a place value chart
- Order and compare decimals (same numbers of decimal places)
- Order and compare any decimals with up to 3 decimal places
- Round to the nearest whole number
- Round to 1 decimal place
- Understand percentages
- Understand the relationship between percentages and fractions
- Understand the relationship between percentages and decimals

- Add decimals within 1
- Subtract decimals within 1
- Find complements to 1
- Add decimals – crossing the whole
- Add decimals with the same number of decimal places
- Subtract decimals with the same number of decimal places
- Add and subtract decimals with the same number of decimal places when solving problems
- Add decimals with a different number of decimal places
- Subtract decimals with a different number of decimal places
- Add and subtract decimals with a different number of decimal places when problem solving
- Add and subtract whole and decimal numbers
- Identify and complete decimal sequences
- Multiply decimals by 10, 100 and 1000
- Divide decimals by 10, 100 and 1000

Y6

- Understand place value in up to 3 decimal places
- Understand place value with integers and decimals
- Round decimals
- Add and subtract decimals
- Multiply by 10, 100 and 1000
- Divide by 10, 100 and 1000
- Multiply decimals by integers
- Divide decimals by integers
- Multiply and divide decimals un context

- Understand that percentage means 'out of 100' (R)
- Convert fractions into percentages
- Find equivalent fractions, decimals and percentages
- Oder fractions, decimals and percentages
- Find percentage of an amount (1%, 10%, 25%,50%)
- Find any percentage of an amount
- Find the missing value when given the percentage of an amount

Statistics

Y2

- Make tally charts
- Draw pictograms (1-1)
- Interpret pictograms (1-1)
- Draw pictograms (2, 5 and 10)
- Interpret pictograms (2, 5 and 10)
- Interpret block diagrams

Y3

- Make tally charts (R)
- Draw pictograms (2,5,10) (R)
- Interpret pictograms (R)
- Draw bar charts
- Interpret bar charts
- Interpret tables

Y4

- Read, interpret and complete information in a chart
- Compare, find the sum and difference on bar charts, pictograms and tables
- Begin to read, understand and draw line graphs
- Interpret line graphs

Y5

- Draw line graphs
- Read and interpret line graphs
- Read and interpret tables
- Read and understand two-way tables
- Read and understand timetables

Y6

- Read and interpret line graphs (R)
- Draw line graphs (R)
- Use line graphs to solve problems
- Understand circles and the facts about them
- Read and interpret pie charts (marked with equal parts)
- Read and interpret pie charts with percentages
- Draw pie charts
- Know that the 'mean' is the average and how to find it

Money

Y1

- Recognise and know the value of different coins
- Recognise and know the value of different notes
- Count in coins

Y2

- Count money – in pence
- Count money – in pounds (notes and coins)
- Count money – in pounds and pence
- Select money the correct coins and notes to create totals
- Recognise that sometimes the same value can be made in different ways using coins and notes
- Compare amounts of money
- Calculate with money
- Make a pound
- Find change
- Solve two-step problems

Y3

- Count money (pence) (R)
- Count money (pounds) (R)
- Count in pounds and pence
- Convert pounds and pence
- Add money
- Subtract money
- Give change

Y4

- Count an amount of money and write it using decimals
- Order and compare values of money
- Use rounding to estimate money
- Convert pounds and pence (R)
- Add money (R)
- Subtract money (R)
- Give change (R)
- Use the four operations to solve problems involving money

Money will be covered in many areas of the White Rose curriculum in Year 5 & 6.
These classes also revise this unit through their basic skills sessions throughout the year.

Measure (Length/Perimeter/Area/Volume/Units)

Nursery – Development Matters (3 & 4 Yr olds)

- Make comparisons between objects relating to size, length, weight and capacity.
- Solve real world mathematical problems with numbers up to 5.
- Compare quantities using language: 'more than', 'fewer than'.

Reception – ELG taken from Power Maths

- Talk about 'My Day' – although there is no ELG for this, this objective is useful as link to learning Time in Y1.

Y1 – Weight and Capacity

- Understand and use 'heavier' and 'lighter'
- Measure mass
- Compare mass
- Understand 'full' and 'empty'
- Compare volume
- Measure capacity
- Compare capacity

Y1 – Length and Height

- Compare lengths and heights
- Measure length using non-standard units
- Measure length in centimetres

Y2 – Length and Height

- Measure lengths (in cms)
- Measure length (in m)
- Compare lengths and heights
- Order lengths and heights
- Use the four operation with lengths and heights

Y2 – Mass, capacity and temperature

- Compare mass
- Measure mass in grams
- Measure mass in kilograms
- Solving problems with mass using the four operations
- Compare volume and capacity
- Measure in millilitres
- Measure in litres
- Solving problems with volume and capacity using the four operations
- Understand how temperature is recorded

Y3 – Length and Perimeter

- Measure in metre and centimetres
- Measure in millimetres
- Measure in centimetres and millimetres
- Find equivalent lengths (m and cm)
- Find equivalent lengths (cm and mm)
- Compare lengths
- Add lengths
- Subtract lengths
- Understand what perimeter is
- Measure perimeter
- Calculate perimeter

Y3 – Mass and Capacity

- Use scales
- Measure mass in grams
- Measure mass in kilograms and grams
- Use and find equivalent masses (Kg and g)
- Compare mass
- Add and subtract mass
- Measure capacity and volume in millimetres
- Measure capacity and volume in litres & millimetres
- Find and use equivalent capacities & volumes (litres and millilitres)
- Compare capacity and volume
- Add and subtract capacity and volume

Y4 – Length and Perimeter

- Measure in kilometres and metres
- Find and use equivalent lengths (km and m)
- Find perimeter on a grid
- Find perimeter of a rectilinear shapes
- Fins missing lengths in rectilinear shapes
- Calculate the perimeter of rectilinear shapes
- Find perimeter of regular polygons
- Find the perimeter of any polygon

Y4 - Area

- Understand what 'area' is and think about how we can measure it
- Find the area by counting squares
- Make shapes with a given area (using a grid)
- Compare the area of different shapes (using squares)

Y5 – Area and Perimeter

- Calculate perimeter of rectangles
- Calculate perimeter of rectilinear shapes
- Calculate perimeter of polygons
- Calculate Area of rectangles
- Calculate Area of compound shapes
- Estimate area

Y5 - Converting Units

- Convert kilometres
- Convert kilograms
- Convert millimetres
- Convert millilitres
- Convert between different metric units
- Convert metric and imperial units
- Convert units of time
- Use timetables to solve problems

Y5 - Volume

- Understand what volume means
- Compare volume
- Estimate volume
- Estimate capacity

Y6 – Converting Units

- Estimate metric measures
- Convert metric measures
- Calculate with metric measures
- Convert between miles and kilometres
- Convert imperial measures

Y6 – Area, Perimeter & Volume

- Find shapes with the same area (using a grid)
- Find the area and perimeter or rectilinear shapes
- Estimate the area of a triangle using a grid
- Know how to calculate the area of a triangle
- Know how to calculate the area of a parallelogram
- Understand what 'volume' is (R)
- Find volume by counting cubes
- Know how to calculate the volume of a cuboid

Properties of Shape

Nursery – Development Matters (3 & 4 Yr olds)

- Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'.
- 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 identifies the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc.
- Extend and create ABAB patterns – stick, leaf, stick, leaf.
- Notice and correct an error in a repeating pattern.

Reception – ELG taken from Power Maths

There is no specific ELG related to this unit. This unit supports the Development Matters statement Select, rotate and manipulate shapes in order to develop spatial reasoning.

Y1

- Recognising solid 3-D shapes and describing their properties.
- Sort 3-D shapes
- Recognising flat 2-D shapes and describing their properties.
- Sort 2-D shapes
- Make patterns with 3-D and 2-D shapes

Y2

- Recognise 2-D and 3-D shapes
- Count sides on 2-D shapes
- Count vertices on 2-D shapes
- Draw 2-D shapes
- Recognise shapes that have lines of symmetry
- Complete the reflection where the line of symmetry indicates
- Sort 2-D shapes
- Count faces on 3-D shapes
- Count edges on 3-D shapes
- Count vertices on 3-D shapes
- Sort 3-D shapes
- Make patterns with 2-D and 3-D shapes

Y3

- Recognise common turns and angles
- Identify right angles in shapes
- Compare angles (acute, obtuse, right angles)
- Draw given measurements with accuracy
- Identify horizontal and vertical lines
- Identify parallel and perpendicular lines
- Recognise and describe 2-D shapes
- Recognise and describe 3-D shapes
- Make 3-D shapes

Y4

- Recognise common turns as angles (R)
- Recognise right angles (R)
- Compare right, acute, and obtuse angles (R)
- Identify right, acute, and obtuse angles
- Compare and order angles
- Recognise and describe 2-D shapes (R)
- Compare and classify triangles
- Compare and classify quadrilaterals
- Distinguish between horizontal and vertical lines (R)
- Identify lines of symmetry
- Complete a simple symmetrical figure to a specific line of symmetry

Y5

- Identify angles (R)
- Compare and order angles (R)
- Measure angles in degrees using known facts
- Measure angles with a protractor
- Draw lines and angles using given information
- Calculate missing angles on a straight line
- Calculate missing angles around a point
- Name and identify triangles
- Name and identify quadrilaterals
- Identify regular and irregular polygons
- Reason about 3-D shapes

Y6

- Measure angles with a protractor
- Draw lines and angles accurately
- Know angles of turns
- Calculate missing angles on a straight line (R)
- Calculate missing angles around a point (R)
- Calculate missing angles (on a line, around a point)
- Know that vertically opposite angles are equal
- Calculate angles in a scalene triangle
- Calculate angles in an isosceles or right-angled triangle
- Calculate angles in a triangle using other angle facts
- Know angle facts about special quadrilaterals
- Calculate angles in other regular polygons
- Draw shapes accurately
- Draw nets of 3-D shapes

Time

- Nursery – Development Matters (3 & 4 Yr olds)
  - Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'

Y1

- Use "next", "before" and "after"
- Understand "dates" including using a calendar
- Tell the time to the hour
- Tell the time to the half hour
- Compare different times

Y2

- Tell and write the time to the hour (R)
- Tell and write the time to the half hour (R)
- Read "o'clock" and "half past" times on a clock
- Read "quarter past" and "quarter to" times on a clock
- Tell and write the time to 5 minute intervals
- Understand the relationship between hours and days
- Find durations of time
- Compare durations of time

Y3

- Tell the time to o'clock and half past (R)
- Tell the time to quarter past and quarter to (R)
- Use months and years
- Use hours in a day
- Tell the time to 5 minutes
- Tell the time to the minute
- Use a.m. and p.m.
- Understand the 24-hour clock
- Find a duration
- Compare durations
- Find start and end times
- Measure time in seconds
- Problem solve with time

Y4

- Tell the time to 5 minutes (R)
- Tell the time to the minute (R)
- Use a.m. and p.m. (R)
- Understand the 24 hour clock (R)
- Show understanding about the difference between hours, minutes and seconds
- Show understanding about the difference between years, months, weeks and days
- Convert between analogue and digital times – 12 hour
- Convert between analogue and digital times – 24 hour

Time will be covered in many areas of the White Rose curriculum in Year 5 & 6.
These classes also revise this unit through their basic skills sessions throughout the year.

Position and direction

- Nursery – Development Matters (3 & 4 Yr olds)

- Understand position through words alone – for example, "The bag is under the table," – with no pointing.
- Describe a familiar route.
- Discuss routes and locations, using words like 'in front of' and 'behind'.

Y1

- Describe turns
- Describe position using directional language

Y2

- Describe the position (left, right, forwards, backwards, above, below) (R)
- Problem solve with position
- Describe movement
- Describe turns
- Make patterns with shapes

Y4

- Describe position using coordinates
- Plot points on a grid
- Translate points on a grid
- Describe movement including translation of figures and points

Y5

- Describe position using coordinates
- Name and plot points within one quadrant
- Translate figures and describe their translation
- Translate coordinates and describe their translation
- Identify lines of symmetry
- Complete a symmetric figure
- Reflect coordinates

Y6

- Name and plot points within the quadrant
- Name and plot points in all four quadrants
- Translate figures and describe their translation over four quadrants
- Reflect figures over four quadrants

Algebra

Y6

- Find the rule that has been applied to a set of numbers – one step
- Find the rule that has been applied to a set of numbers – two steps
- Form an expression
- Understand that letters and symbols can be used as substitutes for numbers
- Identify formulae
- Form equations
- Solve one step equations
- Solve two step equations
- Find pairs of values

Ratio

Scaling up and down using multiplication and division is introduced in Y3. 'There are 3 times as many…'

Y6

- Use ratio language
- Use fractions to write ratios
- Use the ratio symbol
- Calculate ratio
- Use scale factor
- Calculate scale factors
- Solve ratio and proportion problems