



The Maths Curriculum

Contextual Information

Subject Leader(s)	Ashleigh Jackson Denise Pitt
External resources or schemes of work used	White Rose Reach 2 vocabulary progression and knowledge organisers Maths through stories "have you got a maths eye?" Developing The 5 core Competencies of Maths NRICH 5 step approach to reasoning NRICH Problem solving
Why these have been chosen	We follow the White Rose progression in teaching Maths at the Palmer Academy. Reach 2 vocabulary and knowledge organisers are used in alignment with White Rose: helps children's development of fluency, reasoning and problem solving and shows guidance of how to move children through the concrete, pictorial, abstract approach. Maths through stories: integrate reading into Maths curriculum.

“have you got a maths eye?”: gives the children opportunities to look for maths clues in the real world.

Developing The 5 core Competencies of Maths: progression for SEN Children

NRICH 5 step approach to reasoning: to help children moving on in their reasoning.

NRICH Problem Solving: good ideas and examples on how to help children approach a problem.

Contents

An Overview of Subject

Our Palmer Curriculum Intent

We inspire children's futures through a creative, inclusive and relevant curriculum enabling to use their enquiring mind to inspire their future. We equip them with the skills, knowledge and attitudes they need to become confident, determined and respectful young adults who have exciting and ambitious aspirations for their futures. We teach essential skills for life, such as grit, perseverance, growth mindset and self-regulation. They will leave our school with a rich understanding of the subjects they have been taught.

We will aim to move children's learning from the short-term to long-term memory, resulting in a deep and connected understanding.

We value the importance of the local community and cultures and recognise the positive impact it has on school life when we work in partnership.

Our Curriculum Golden Threads are:

Rich Language and Vocabulary
(children can articulate their learning fluently)

Social and Emotional Awareness
(children develop the skills needed to engage in our society)

Powerful People (children have a deep understanding and are inspired by people and events)

Our Subject Curriculum Intent

As a result of our Maths progression of knowledge, mathematical vocabulary is learnt and applied.

Children can use this vocabulary when applying fluency, reasoning and problem solving. They should be able to link the vocabulary across different contexts in the maths curriculum and should be able to recall vocabulary from the previous years and be able to define the vocabulary.

Children can link Maths to real life examples and use skills learnt in their own community and environment.

Throughout the development and learning of the maths curriculum, children are provided with opportunities to persevere, observe, challenge and experience real world examples of maths.
For example: applying maths through stories/reading and 'do you have a maths eye'

Through the study of influential people, children are motivated to learn from their discoveries and challenges and apply this to their own learning and challenges they come across in Maths.

We want children to be able to build on their knowledge step by step every year and for them to notice the progression of the skills they have learnt. We aim to imbed concepts in all children through a concrete, pictorial; abstract (CAP) approach while focusing on developing their fluency, reasoning and problem solving. Exposing them to conceptual and procedural variation will enhance the embedding of knowledge.

Implementation

In each classroom we will see:

- **Teaching and learning:** Teaching of maths daily with a positive, enthusiastic approach, teaching following the White Rose curriculum map, calculation policy and a specifically designed lesson on slides (smart notebooks) to ensure consistency. Teaching is done at a good pace and children are engaged.
- **Rich vocabulary** on maths working walls. Children must be able to define and use the vocabulary in context.
- **Working walls** reflecting the current work and sentence starters for reasoning and knowledge organisers.
- **Display of timetables** which must be taught 5/10 minutes daily.
- **Weekly timetable tests**
- **Concrete resources** using in lessons when appropriate
- **Workbooks** will show progression on fluency, reasoning and problem solving through CPA and conceptual and procedural variation. Workbooks will be set out consistently across year groups.
- **Knowledge organisers:** At the end of the year these sheets can be put together to form a class book and be sent up to the next year group. Children can then recall the ideas with their new teacher.

- **Lesson design:** Each Year group will have a basic structure, which can be adapted according to the Mathematical concept taught but should be used consistently in all classrooms. **SEND** children will be working supported or independently on the 5 core competencies. (number bonds, making 10/the importance of 10, doubling and halving, regrouping, using known facts).
- **Greater depth children** will be challenged through questioning to deepen their understanding and knowledge of the concept.
- **EAL children:** Support through vocabulary maths and sentence starters.
- **Feedback:** Instant feedback in a lesson. Can be in the form of verbal questioning, RAR, peer marking, self-assessment.
- **Pupil voice:** children will be able to speak positively about maths and articulate their learning.

CPD and support for teacher workload

In January 2020 all staff came together to implement a consistent intent for our curriculum

How are leaders/subject leaders supporting staff in this subject?

TFM course

White rose progression documents for all staff (progression, vocabulary, knowledge organisers)

Shared planning slides

[documents, resources, shared planning, staff meetings, specific training, monitoring and coaching, peer-to-peer, planning templates]

Curriculum Map Content Overview

MATHS	TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Nursery	number songs, Counting, number recognition, 1-1 correspondence	Shape, everyday language for shapes, shapes in the environment	Positional language, comparing 2 groups of objects, separating 2 groups of objects, representing numbers	1-1 correspondence, counting out 6 from a larger group, matching numeral to quantity, recognise numbers in environment, writing numbers	Representing numbers, compares 2 groups of objects, everyday language for shapes, using shapes appropriately for tasks	Positional language, counts objects beyond 10, ordering numbers to 10, recap
Reception	Number, counting, recognition, 1-1 correspondence	comparing groups, Adding, take away, shape	positional language, shape, language, weight, capacity	adding, take away	doubling, halving, patterns, counting in 2, 5, 10	adding, take away problems, 3D shapes, number bonds to 10
YEAR 1	Place Value - 10 Addition and Subtraction	Geometry Place Value - 20	Addition Subtraction within 20 Place Value - 50 (multiples of 2, 5, 10)	Measurement Length and Height, Weigh and Volume	Multiplication and Division Fractions Position and Direction	Place Value 100 Money Time
YEAR 2	Place Value Addition and Subtraction	Money Multiplication and Division	Multiplication and Division Statistics Shape	Fractions Measurement	Position and Direction Problem Solving Time	Measurement Investigation
YEAR 3	Place Value Addition and Subtraction	Multiplication and Division	Multiplication and Division Money Statistics	Measurement Fractions	Fractions Time	Shape Mass and Capacity
YEAR 4	Place Value Addition and Subtraction	Measurement Multiplication and Division	Multiplication and Division Area	Fractions Decimals	Decimals Money Time	Statistics Shape Position and direction
YEAR 5	Place Value Addition and Subtraction Statistics	Multiplication and Division Area and Perimeter	Multiplication and division Fractions	Fractions Decimals %	Decimals Shape	Position and direction Volume
YEAR 6	Place Value + - x ÷	BODMAS Fractions Position and Direction	Decimals Percentages Algebra Ratio	Measurement Shape	Statistics Revision	Investigations

Year Group: N-6

Mapping & Planning documents:

Curriculum Mapping Overview

Calculation Policy

White Rose: can be used alongside other resources (see resources)

Reach 2 vocabulary progression and knowledge organisers

Developing The 5 core Competencies of Maths

NRICH 5 step approach to reasoning

NRIH Strategies to help Problem solving: Questioning and **Bar Modelling?**

Variation: Procedural and Conceptual.

How fluency is developed: Fluency demands children to be accurate, efficient and flexible in their learning. Children need to make connections and move between different contexts and representation in maths.

All children must be move through the **concrete, pictorial and abstract** stages in their learning. In doing so children will be able to become more fluent Mathematicians.

- Concrete stage: All children should start at the concrete stage when learning a new concept in maths. Practical resources and real-life examples must be available and used in all classrooms during a lesson. Only when a child is solid in their understanding can they move to the pictorial stage.
- Pictorial Stage: Children can draw pictures to solve the answer to the question. They rely on their knowledge they learnt from using concrete resources and represent their understanding through pictures or drawing. **Bar modelling** is a great strategy for children to represent their thinking in the pictorial stage. Visual pictures of **conceptual and procedural variation** should be used at this stage. When children are comfortable at this stage, they become abstract thinkers.
- Abstract Stage: Children are introduced to abstract concepts such as addition, subtraction, multiplication and division symbols (+ - x /)



These stages are not age specific. They should be part of normal classroom practice throughout all the year groups in the school.

How is reasoning developed:

- Reasoning can be verbal or nonverbal (written). Children need to be able to describe, explain, convince justify and prove using mathematical language. **NRICH separate document**

How is problem solving developed?

- Problem solving will be developed through strong questioning and strategies to help children solve problems. **(NRICH- separate document)**
- Bar modelling can be used as an approach to solving problems. Bar modelling is essential to maths mastery strategy. Bar modelling allows pupils to draw and visualize mathematical concepts to solve problems.

The advantages of bar modelling provide pupils with a powerful tool for solving problems. However, the lasting power of bar modelling is that once pupils master the approach, they can easily use bar models year after year across many maths topics. For example, bar modelling is an excellent technique (but not the only one) for tackling ratio problems, volume problems, fractions, and more.

Variation: The essential idea with variation is to highlight essential or non-essential features of a concept. When teaching a new concept, it is useful to add in variation into the lesson. This will help children develop **fluency, reasoning and problem solving**. Variation can be shown in 2 ways: procedural or conceptual. **(see separate document)**

Rich language and vocabulary:

In the white rose lesson overview documents there are two vocabulary rows on the document, which show the subject specific vocabulary that needs to be introduced or re-introduced as part of the unit as well as what should have been covered in the **previous year group**. Whole school vocabulary progression documents are present on the accompanying **knowledge organisers**.

All vocabulary will be displayed in the classroom on working walls.

All children must be using **part part whole** language and be able to understand where these go in number bonds, bar models.

Social and Emotional Awareness:

Linked to real life situations and problem solving to develop:

Resilience
Collaboration
Perseverance
Explaining
Listen
Curiosity
Investigation
Mathematical arguments with compassion
Enquiry

Powerful People:

Mathematicians

Autumn term: **Pythagoras**

Mary Cartwright

<https://nrich.maths.org/9399>

<https://scientificwomen.net/women/cartwright-mary-140>

Resources:

- Apps pixl, timetables rock stars, maths seeds
- Concrete resources
- <https://nrich.maths.org/>
- Twinkl
- Classroom secrets
- Maths through stories <https://www.mathsthroughstories.org/lesson-ideas.html>
- "have you got a maths eye?"
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Experiences and outdoor learning opportunities: Making maths real and purposeful.

- Ufton court
- Morrisons
- School environment
- Maths games
- Maths stories <https://www.mathsthroughstories.org/lesson-ideas.html>
- "have you got a maths eye?"
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Links made to prior learning:

Why has content been chosen?

Due to Covid-19 and school closures, White Rose has produced a lesson by lesson overview that covers the year group content but also creates room to

Preparation for future learning:

Why has content been chosen?

Knowledge organisers have been created in alignment with white rose to show a summary of each Mathematical concept which has been taught in

<p>revisit and consolidate learning from the previous years that may have been missed or forgotten.</p>	<p>the academic year. It shows consistency and can be used in future year groups for consolidation and support.</p>
<p>Adapting our curriculum: <i>How is the curriculum adapted for different groups of pupils so that pupils make strong progress?</i></p> <p>Working with SENCO- JC</p> <ul style="list-style-type: none"> • <i>Resources – concrete resources</i> • <i>Five core competencies:</i> children will be working supported or independently on the 5 core competencies. (number bonds (part part whole), making 10/the importance of 10, doubling and halving, regrouping, using known facts). Developing these are important as these underpin so much of pupils learning in Maths. • <i>A different from delivery structure related to 5 key elements</i> • <i>Written/number formation/precision teaching</i> • <i>Making maths real: element of real life/role play/stories</i> • <i>Maths games</i> 	<p>Links to other subjects/just checking:</p> <p>We want there to be consistency within all classroom, while still allowing teaching and children to imprint their individuality in learning and teaching.</p> <p>In order to link Maths with other subjects, teacher will work together on sharing ideas. In maths we will incorporate other subjects in the following ways: Writing: Writing their own maths stories Reading: reading maths stories Big question: Can be based on another subject. ‘Have you got a maths eye?’ Asking children where they see maths in the real world.</p>
<p>Books</p> <ul style="list-style-type: none"> • By children <ul style="list-style-type: none"> • Date and learning objective are written neatly one under the other- underlined with a ruler. • Margins are drawn neatly with a ruler. • Children respond to RAR/ feedback in purple pen. • If marking own work/ starter, it is done in purple pen and neatly. • Peer/ self-assessment is done with respect on other children’s books • Children can use the knowledge organisers and working wall to help. • By teachers <ul style="list-style-type: none"> • Books are marked or some type of recognition that it has been seen the teacher. • RAR move the children’s learning on. • GD children have been challenging through questioning. • SEN/ EAL supported • Set high expectations for all children. • there is enough work for all children. 	
<p>Timetables:</p> <ul style="list-style-type: none"> • Timetables are to be taught every day for 10 minutes. This can be structured into a Maths lesson or done at other times of the day e.g. lining up, going out to break or home etc. • Timetables tests should be tested weekly and timed to track the speed and progress children are making. • The Pixl timetable app and timetables rock stars is available for all children to use at home or at school. The app helps to track the children progress they are making in their timetables. 	
<p>Working walls Working walls should updated frequently showing the work that is currently being taught in the classroom. Children should refer to the working wall and use alongside their knowledge organisers to enhance their learning. All working walls should display maths vocabulary and celebrate good examples of children work.</p>	
<p>Lesson Design</p> <p>All lessons should have the following elements.</p> <ol style="list-style-type: none"> 1. Learning objective and success criteria 2. Fast 5 (addition, subtraction, multiplication, division, fractions or recapping previous units of work) 3. Big Mathematical question (being asked by the ‘Influential person’ of the term) to be asked to children to help the children construct meaning. This can be done in the following ways. <ol style="list-style-type: none"> a. This can be a word problem/reasoning question based on prior knowledge either introducing the LO of the lesson. b. Open ended questions therefore being accessible to all children. c. Linked to real life experience/ “ have you got a maths eye?” d. conceptual and procedural variation e. pictures to prompt children. 4. Children must discuss the question with a learning partner. The children must share and talk through their ideas together to find their mathematical voices. This gives the teacher a chance to: <ol style="list-style-type: none"> a. Circulate the room b. Look at how the children are working through the problem c. Identify the range of methods being used d. Assess and listen to who may need more support and identify who needs more challenge. e. This is not a time to correct the children’s thinking but rather to be an observer. f. Take responses from the children. Encourage them to explain the methods they used to work the problem out. g. The problem can be ‘solved’ straight away or come back to at the end of the lesson where children may change their mind about the answer they have given. 	

5. Vocabulary slide: discuss and define vocabulary
6. Main structure of the lesson
 - a. Guide children through the learning by the teacher modelling. The lesson should include a ping-pong approach where the teacher models, then all do one together and then children independently.
 - b. Give children opportunities to show their understanding and skills by using their white boards and concrete apparatus.
 - c. Children you can see are ready to move on don't need to sit through this part and can be moved straight to independent work.

Depending on where you are in the concept will depend whether each lesson is more fluency, reasoning or problem solving based.

7. Spend enough time on independent work in their books so that it shows understanding.
 - a. Support children through guided groups.
 - b. Encourage peer teaching for early finishes.
 - c. Challenge the Greater depth children by extra challenge.

Each slide has a 'just checking' as a reminder to make sure we have used concrete resources in the lesson if it is applicable. Also, in the just checking will be ideas that should be used at least once per concept taught. For example: a real-life experience, playing a game, role play/ dance/songs/ maths stories/ have you got a maths eye?

It is important that maths boxes with concrete apparatus are accessible for all children throughout the lesson.

To attach to this document:

Paper copy:

White rose progression- new

Knowledge organiser- for place value.

5 core competencies of maths for SEN

N rich- 5 approaches to reasoning

NRICH- problem solving strategies (print out some examples)

Strategies to help Problem solving: Questioning and **Bar Modelling?**

Variation: Procedural and Conceptual.

Monitoring checklist and book look feedback- so all teacher know what we are looking for.

On Server:

Lesson slides

Have you got a maths eye?

Internet:

maths through stories.

Mathematician link <https://rich.maths.org/9399> <https://scientificwomen.net/women/cartwright-mary-140>

NRICH lesson ideas for reasoning

NRICH for problem solving

Recovery Curriculum 2020-21

Maths

Which objectives and topics have been missed?

	<u>Spring and Summer Term</u>
<u>Nursery</u>	All covered
<u>Reception</u>	Doublin halving One/ more one less than numbers to 20 Concepts of numbers to 20 Number problems Patterns Money Time
<u>Year One</u>	<p>Number: Multiplication & Division</p> <ul style="list-style-type: none"> • solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. <p>Number: Fractions</p> <ul style="list-style-type: none"> • recognise, find and name a half as one of two equal parts of an object, shape or quantity • recognise, find and name a quarter as one of four equal parts of an object, shape or quantity <p>Measurement</p> <p><i>Compare, describe and solve practical problems for:</i></p> <ul style="list-style-type: none"> • lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] • mass/weight [for example, heavy/light, heavier than, lighter than] • capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] • time [for example, quicker, slower, earlier, later] • measure and begin to record the following: lengths and heights; mass/weight; capacity and volume; time (hours, minutes, seconds) • recognise and know the value of different denominations of coins and notes • sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] • recognise and use language relating to dates, including days of the week, weeks, months and years • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times <p>Geometry: Properties of Shapes</p> <p><i>Recognise and name common 2-D and 3-D shapes, including:</i></p> <ul style="list-style-type: none"> • 2-D shapes [for example, rectangles (including squares), circles and triangles] • 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] <p>Geometry: Position & Direction</p> <ul style="list-style-type: none"> • describe position, direction and movement, including whole, half, quarter and three-quarter turns.
<u>Year Two</u>	<p>Measurement</p> <ul style="list-style-type: none"> • choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels • compare and order lengths, mass, volume/capacity and record the results using >, < and =

	<ul style="list-style-type: none"> • recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value • find different combinations of coins that equal the same amounts of money • solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change • compare and sequence intervals of time • 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. <p>Geometry: Position & Direction</p> <ul style="list-style-type: none"> • order and arrange combinations of mathematical objects in patterns and sequences • use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). <p>Statistics</p> <ul style="list-style-type: none"> • interpret and construct simple pictograms, tally charts, block diagrams and simple tables • ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity • ask and answer questions about totalling and comparing categorical data.
<p><u>Year Three</u></p>	<p>Year 3</p> <ul style="list-style-type: none"> • recognise and show, using diagrams, equivalent fractions with small denominators • add and subtract fractions with the same denominator within one whole [for example, $5/7 + 1/7 = 6/7$] • compare and order unit fractions, and fractions with the same denominators • solve problems that involve all of the above. <p>Measurement</p> <ul style="list-style-type: none"> • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • measure the perimeter of simple 2-D shapes • add and subtract amounts of money to give change, using both £ and p in practical contexts • 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]. <p>Geometry: Properties of Shapes</p> <ul style="list-style-type: none"> • draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them • recognise angles as a property of shape or a description of a turn • identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle • identify horizontal and vertical lines and pairs of perpendicular and parallel lines. <p>Statistics</p> <ul style="list-style-type: none"> • interpret and present data using bar charts, pictograms and tables

	<ul style="list-style-type: none"> • solve one-step and two-step questions [for example, ‘How many more?’ and ‘How many fewer?’] using information presented in scaled bar charts and pictograms and tables.
<p><u>Year Four</u></p>	<p>Number: Fractions</p> <ul style="list-style-type: none"> • recognise and show, using diagrams, families of common equivalent fractions • count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. • solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number • add and subtract fractions with the same denominator • recognise and write decimal equivalents of any number of tenths or hundredths • recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ • find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths • round decimals with one decimal place to the nearest whole number • compare numbers with the same number of decimal places up to two decimal places • solve simple measure and money problems involving fractions and decimals to two decimal places. <p>Measurement</p> <ul style="list-style-type: none"> • Convert between different units of measure [for example, kilometre to metre; hour to minute] • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • find the area of rectilinear shapes by counting squares • estimate, compare and calculate different measures, including money in pounds and pence. <p>Geometry: Properties of Shapes</p> <ul style="list-style-type: none"> • compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify acute and obtuse angles and compare and order angles up to two right angles by size • identify lines of symmetry in 2-D shapes presented in different orientations • complete a simple symmetric figure with respect to a specific line of symmetry. <p>Geometry : Position & Direction</p> <ul style="list-style-type: none"> • describe positions on a 2-D grid as coordinates in the first quadrant • describe movements between positions as translations of a given unit to the left/right and up/down • plot specified points and draw sides to complete a given polygon. <p>Statistics</p> <ul style="list-style-type: none"> • interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. • solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.
<p><u>Year Five</u></p>	<ul style="list-style-type: none"> • read Roman numerals to 1000 (M) and recognise years written in Roman numerals. • recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per hundred’, and write percentages as a fraction with denominator 100, and as a decimal • solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$, and those fractions with a denominator of a multiple of 10 or 25. <p>Measurement</p> <ul style="list-style-type: none"> • convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints

	<ul style="list-style-type: none"> • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes • estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] • solve problems involving converting between units of time • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. <p>Geometry: Properties of Shapes</p> <ul style="list-style-type: none"> • identify 3-D shapes, including cubes and other cuboids, from 2-D representations • use the properties of rectangles to deduce related facts and find missing lengths and angles • distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees (°) • identify angles at a point and one whole turn (total 360°) • identify angles at a point on a straight line and half a turn (total 180°) • identify other multiples of 90°. <p>Geometry: Position & Direction</p> <ul style="list-style-type: none"> • identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. <p>Statistics</p> <ul style="list-style-type: none"> • solve comparison, sum and difference problems using information presented in a line graph • complete, read and interpret information in tables, including timetables.
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What whole school initiatives will we need to address the gaps?

- Timetables
- Knowledge organisers
- Daily maths starters
- Big maths days on a concept- measurement day
- Follow white rose- recovery curriculum

Which objectives should be taught as part of **starters** to new units of work?

	<u>Objectives to be included this year</u>	<u>Why?</u>
<u>Nursery</u>		
<u>Reception</u>		
<u>Year One</u>	Doubling and halving One more, one less number to 20. Concepts of number to 20 Number problems pattern Money time	These concepts are easy to use as starters before each lesson.
<u>Year Two</u>	Multiplication and division Fractions $\frac{1}{2}$ and $\frac{1}{4}$ s Naming 2d and 3d shapes Geometry-position and direction	Starters only as this is covered in year 2 Starter as it is covered in year 2
<u>Year Three</u>		
<u>Year Four</u>		
<u>Year Five</u>		

Which objectives needed to be taught as a **whole lesson**? Where will they fit in the current curriculum?

MATHS	TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6
Nursery	number songs, Counting, number recognition, 1-1 correspondence	Shape, everyday language for shapes, shapes in the environment	Positional language, comparing 2 groups of objects, separating 2 groups of objects, representing numbers	1-1 correspondence, counting out 6 from a larger group, matching numeral to quantity, recognise numbers in environment, writing numbers	Representing numbers, compares 2 groups of objects, everyday language for shapes, using shapes appropriately for tasks	Positional language, counts objects beyond 10, ordering numbers to 10, recap
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YEAR 1	Place Value - 10 Addition and Subtraction	Geometry Place Value - 20	Addition Subtraction within 20 Place Value -	Measurement Length and Height, Weigh and Volume	Multiplication and Division Fractions Position and Direction	Place Value 100 Money Time

			50 (multiples of 2, 5, 10)			
YEAR 2	Place Value Addition and Subtraction	Money Multiplication and Division	Multiplication and Division Statistics Shape	Fractions Measurement	Position and Direction Problem Solving Time	Measurement Investigation
YEAR 3	Place Value Addition and Subtraction	Multiplication and Division	Multiplication and Division Money Statistics	Measurement Fractions	Fractions Time	Shape Mass and Capacity
YEAR 4	Place Value Addition and Subtraction	Measurement Multiplication and Division	Multiplication and Division Area	Fractions Decimals	Decimals Money Time	Statistics Shape Position and direction
YEAR 5	Place Value Addition and Subtraction Statistics	Multiplication and Division Area and Perimeter	Multiplication and division Fractions	Fractions Decimals %	Decimals Shape	Position and direction Volume
YEAR 6	Place Value + - x ÷	BODMAS Fractions Position and Direction	Decimals Percentages Algebra Ratio	Measurement Shape	Statistics Revision	Investigations