



*Queen's Park C of E / URC Primary  
School*

## *Mathematics Policy*

*September 2021*

*To be reviewed - September 2024*

*Together we believe, achieve and enjoy*

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## 1. Vision and Aims

Our vision for Queen's Park C.E./U.R.C. Primary School

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Through our vision, we serve our community by providing an inclusive, happy, secure and caring Christian environment where all are valued and respected. We believe that God loves all his children unconditionally and values the uniqueness of the individual and recognise the diversity and range of contributions that each child can make.

Following the Church of England's Vision for Education 'Life in all its fullness' John 10:10, we provide a high-quality education within a creative, stimulating, encouraging and mutually supportive environment where children are enabled to develop the skills they require to become successful.

### Our Core Christian Values

*Love*

*Forgiveness*

*Trust*

*Respect*

*Honesty*

*Hope*

Together	<ul style="list-style-type: none"><li>• Collaborative working within the classroom for pupils fully embedded in all lessons.</li><li>• Collaborative working for staff across school during CPD sessions and through the coaching model (depending on the annual focus).</li><li>• Parental involvement promoted through workshops and visits into school to see maths learning 'in action'.</li><li>• Well developed links with the Maths governor to share good practice.</li><li>• Collaborative working with other schools to promote opportunities to explore maths in different contexts.</li><li>• Community links established to promote maths in real life through trips out and visitors into school.</li></ul>
Achieve	<ul style="list-style-type: none"><li>• Firm belief that all children in our school achieve their full potential in mathematics.</li><li>• Quality first teaching in all classrooms to deliver our sequential CROWN curriculum and differentiation evident through out school to ensure inclusivity.</li></ul>

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	<ul style="list-style-type: none"> <li>• A consistent approach to the teaching of maths throughout school, which has been informed by research.</li> <li>• Adaptation to the curriculum plans in all year groups based on pupil assessment.</li> <li>• Fluency, problem solving and reasoning fully embedded into the maths curriculum for all learners.</li> <li>• Targeted intervention based on the needs of the learners in all classrooms to ensure any misconceptions or gaps in learning are addressed. This may also include pre-teach opportunities.</li> <li>• Extra curricular offers in relation to Maths to ensure children achieve their full potential.</li> <li>• Rigorous monitoring of pupil progress and teaching and learning across school.</li> </ul>
Believe	<ul style="list-style-type: none"> <li>• Children are taught that they may not understand concepts yet but to believe that they will progress within their mathematical journey.</li> <li>• We believe that our children are mathematicians and as they learn this will enable them to draw on their skills for use in the wider world regardless of background or learning barriers.</li> <li>• Quality first teaching underpins the belief that our children will develop mathematically.</li> <li>• By engaging with parents, we can support them to enable their children at home and with develop confidence in mathematical skills.</li> <li>• Regular communication with the governors sharing our vision for the children of Queen's Park.</li> <li>• Visitors into school and sharing real life maths embeds a belief that maths is a key subject that the children need to learn for their future roles in our society.</li> </ul>
Enjoy	<ul style="list-style-type: none"> <li>• Our children enjoy maths at Queen's Park and are encouraged to engage with meaningful maths talk to support mathematical discussions.</li> <li>• The children enjoy a variety of tasks which promote enjoyment and engagement within maths lessons.</li> <li>• Within the wider curriculum children enjoy seeing how maths links to other subjects and then how to apply it in their lessons.</li> <li>• Delivering maths using concrete, pictorial and abstract means children are confident and enjoy maths lessons at a level that suits their abilities.</li> <li>• Staff are well trained so they can ensure our children can access maths in well structured and enjoyable lessons.</li> <li>• Parents coming into school enjoy learning what the children are learning. They also enjoy sharing how maths is used within their occupations within the community.</li> <li>• We share our enjoyment of learning with the governors and encourage governors to come in and see our lessons.</li> </ul>



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## Our 'Crown Curriculum'

Here at Queen's Park, our Crown Curriculum is a bespoke, unique and exciting curriculum that is tailor-made to suit our children, their learning and their futures.

We place an important emphasis on mastery in mathematics, particularly real-life maths making it as meaningful as possible for our children.

**Challenge-** Each day our children are appropriately challenged within maths lessons. We expect a teaching sequence of lessons to include the elements of fluency, reasoning and problem solving. All staff have high expectations of pupils in lessons and expect them to demonstrate their understanding in a variety of ways using the concrete, pictorial, abstract approach.

**Resilience-** Resilience is a large element of our maths lessons. Every lesson has a 'focus on feedback' section. Children are expected to access this in daily lessons and fix any misconceptions or challenge themselves further.

**Opportunities-** At Queen's Park, we strive to provide all children with mathematical experiences not just in maths lessons but in other lessons and events happening in school. We have Maths Ambassadors, who help facilitate and organise mathematics based events and links. We have maths challenges on the newsletter each week.

**Wellbeing** -At Queen's Park, we aim for all children to be confident and happy mathematicians in every lesson. Work is adapted to meet the needs of all learners allowing children to feel confident, building self-esteem.

**KNowledge-** Knowledge is a vital part of mathematics at Queen's Park. We don't only just provide children with knowledge to apply to academic tests, we aim to make our children life-long mathematicians by linking maths to real life situations making it meaningful.

## 2. Legal Framework

This policy has due regard to statutory guidance including, but not limited to the following:

- DfE (2013) 'National curriculum in England: Mathematics programmes of study'
- Mathematics guidance: key stages 1 and 2 Non-statutory guidance for the national curriculum in England June 2020
- Statutory framework for the early years foundation stage Setting the standards for learning, development and care for children from birth to five Published: 31 March 2021 Effective: 1 September 2021

## 3. Intent

Our Maths Curriculum - at a glance

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Our maths long term plan is based on the three strands from the Primary National Curriculum: fluency, reasoning and problem solving. Our plans also have an emphasis on revisiting prior learning and deepening knowledge throughout the year with a focus on a mastery approach to deepen understanding. Following the COVID 19 school closures, we revisited our long term plans to ensure any missed learning opportunities are planned for and addressed in the following year group. The five key principles of the CROWN are embedded within each unit of work.

An example of our long term plan is shown below. It is important to note, that based on the needs of a particular cohort, the topics maybe taught in a different order than shown on this plan.

Year group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Say one number name for each item in order 1, 2, 3, 4, 5 Link numerals to amount. Experiment with their own symbols and marks as well as numerals.	Compare numbers Count objects, actions and sounds Subitise Linking number symbols with its cardinal value.	Compare numbers Count objects, actions and sounds Subitise Linking number symbols with its cardinal value.	Compare numbers Count objects, actions and sounds Subitise Linking number symbols with its cardinal value.	Compare numbers Count objects, actions and sounds Count beyond 10 Subitise.	Compare numbers Count objects, actions and sounds Count beyond 10 Subitise.
<b>Year 1</b>						
Year 1	Autumn 1			Autumn 2		
Autumn	<b>Number: Place value (within 10)</b> + and - 1 Leading to within 20	<b>Number: Addition and Subtraction (within 10)</b> Bands to 4, 5, 6, 7, 8, 9, 10 Language of = to, more, less than, fewer,		<b>Number: Place Value (within 20)</b> + and - 1 Identify and represent numbers using objects and pictorial representations- partitioning 2 digit numbers up to 20 Number lines Language of = to, more, less than, fewer, mostly		
Spring 1				Spring 2		
Spring	<b>Number: Place Value</b> counting in multiples of 2s, 5s, 10s	<b>Multiplication and Division.</b> Halves and doubles	<b>Addition and Subtraction.</b> T and 0 not crossing (E.g. If I know 1+9= 10 then I know 11+9=20) (using prior knowledge of bands)		<b>Fractions</b> Halves and Quarters	
Summer 1				Summer 2		
Summer	<b>Multiplication and Division.</b> Solve 1 step problems (e.g., There are 5 flowers and 4 rows. How many flowers altogether?) Arrays (arrays given)	<b>Addition and Subtraction</b> Crossing tens (e.g. 8+7= 15. 8+2=10+5- partition 7) Addition and subtraction facts within 20 1 step number problems		<b>Place Value (up to 100)</b> Partitioning 2-digit numbers into T and 0	<b>Measurement and comparison across all measures</b> Non-standard units of measure/estimating Standard units of measure	<b>Geometry and Time</b> O'clock Half past
<b>Year 2</b>						
Year 2	Autumn 1			Autumn 2		
Autumn	<b>Number: Place Value</b> PV of digits in 10 Partitioning numbers into T and 0 including other combinations Estimate and recognise numbers on a number line Compare and Order numbers up to 100 using > < and =	<b>Addition and Subtraction</b> Review single digit + single digit (bands to 10) 2 digit + 1 digit 2 digit + 2 digit including bands (10 + 90) 2 digit both numbers are tens 2 digits not crossing the boundaries 2 digits + tens e.g. 43 + 30 (not crossing 100)		<b>Multiplication and Division</b> Counting/ problems Arrays Commutativity Problem Solving Division problems		<b>Number: Place Value</b> <b>National curriculum learning outcomes.</b> Compare and order numbers from 0 up to 100; use <, > and = signs
Spring 1				Spring 2		
Spring	<b>Multiplication and Division</b> Recall of the facts 2x 3x 5x 10x Place value - counting in 2s 3s 5s from 0 - Counting in tens from any number	<b>Fractions</b> Recognise and find 1/3 1/2 2/4 3/4 of length, shape and quantity (fractions of a shape then introduce quantity with shapes using cubes putting them into groups) Equivalence of 1/2 and 2/4		<b>Addition and Subtraction</b> Adding 3 1 digit numbers Subtracting 3 1 digit numbers 10 + 0 crossing boundaries 10 - 0 crossing boundaries		<b>Time</b> Quarter past Quarter to
Summer 1				Summer 2		
Summer	<b>Addition and Subtraction</b> 10 + 10 eg. 100 10 - 10 eg. 100	<b>Geometry/ Statistics</b> Symmetry Simple pictograms and tables Tabulating data	<b>Geometry</b> Properties of shape 2d / 3d Describing and comparing	<b>Position and Direction</b> Patterns and sequences	<b>Multiplication and Division</b> Mathematical statements for 2, 5, 10 times tables Commutativity Problem solving	<b>Addition and Subtraction</b> 10 + 10 10 - 10
						<b>Measurement</b> All strands of NC <b>National curriculum.</b>

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Year 3				
Year 3	Autumn 1		Autumn 2	
<b>Autumn</b>	<b>Number: Place Value</b> Recognise <b>px</b> in each digit in HTO Compare and order numbers up to 1,000 Identify represent and estimate numbers up to 1,000 Count backwards through zero to include negative numbers (links with history objectives)	<b>Number: Addition and Subtraction</b> (up to) 3 digit + ones (up to) 3 digit + tens (up to) 3 digit + hundreds (up to) 3 digit - ones (up to) 3 digit - tens (up to) 3 digit - hundreds TO+ TO crossing hundreds TO - TO crossing tens Column method not required at this point	<b>Number: Multiplication and Division</b> Count in 4s, 8s, 50s from 0 3x, 4x, 8x facts Division facts	
<b>Spring</b>	<b>Fractions</b> Find fractions of shapes, amounts Recognise and use fractions as numbers Compare and order fractions Nat tenths	<b>Spring 1</b> <b>Addition and Subtraction</b> Addition of 3-digit multiples of 10	<b>Spring 2</b> <b>Multiplication and Division</b> Division with remainders	<b>Geometry</b> Property of 2d and 3d shape Turns Right angles horizontal, vertical, parallel and perpendicular lines
<b>Summer</b>	<b>Summer 1</b> <b>Fractions</b> Add and subtract fractions within 1 whole	<b>Addition and Subtraction</b> Column method HTO + HTO Column method HTO - HTO	<b>Summer 2</b> <b>Multiplication and Division</b> TO X O TO + O	<b>Statistics</b> Interpret and present data: bar charts, pictograms, tables angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
			<b>Time</b> Read and write analogue To the nearest min 12 and 24 hr Roman Numerals	

Year 4				
Year 4	Autumn 1		Autumn 2	
<b>Autumn</b>	<b>Number: Place Value</b> Negative numbers Count in 7s, 9s, 25s, 1,000s Find 1,000 more / less Order and compare numbers beyond 1,000 Recognise <b>px</b> of each digit in a 4-digit number Rounding to nearest 10, 100, 1,000	<b>Multiplication and Division</b> Facts for 6s, 7s, 9s, 11s, 12s X by 0 and 1 + by 1 X 3 single digits together		<b>Addition and Subtraction</b> Add and subtract with up to 4 digits Columnar methods Estimate and use inverse 2 step problems
<b>Spring</b>	<b>Spring 1</b> <b>Fractions</b> Multiplying and Dividing by 10 and 100	<b>Fractions</b> Decimal equivalents Rounding and comparing decimals Recognise tenths and hundredths	<b>Fractions</b> Equivalent fractions Fractions of quantities Addition and subtraction of fractions with the same denominator across 1 whole	<b>Spring 2</b> <b>Decimals</b> Fraction and decimal equivalents Addition and subtraction of up to 4 digits with decimals
<b>Summer</b>	<b>Summer 1</b> <b>Multiplication and Division</b> Factor pairs Written methods for TO X O HTO X O TO + O <b>inc</b> remainders	<b>Summer 2</b> <b>Statistics</b> Bar charts Time graphs Pictograms Read and interpret information		<b>Geometry</b> <b>Position and Direction</b> Co-ordinates Positions and translations
			<b>Time</b> Roman Numerals Read, <b>write</b> and convert 12 and 24 Convert hours to minutes, minutes to seconds, years to months, weeks to days	

Year 5					
Year 5	Autumn 1		Autumn 2		
<b>Autumn</b>	<b>Number: Place value</b> Negative numbers Count forwards and backwards in steps of powers of 10 Read, write, <b>order</b> and compare numbers to 1 million Rounding Roman numerals	<b>Addition and Subtraction</b> <b>Inc Decimals</b>	<b>Multiplication and Division</b> Properties of number - <b>sq</b> cubed, factors, prime	<b>Multiplication and Division</b> X and + mentally drawing on known facts	<b>Multiplication and Division</b> <b>Measure</b> Multiplying whole numbers and decimals by 10, 100, 1,000 Converting units of measure
<b>Spring</b>	<b>Spring 1</b> <b>Fractions</b> Recognising mixed numbers and improper fractions	<b>Fractions</b> Order with denominators which are all multiples of the same number	<b>Fractions</b> Add and subtract where denominators and multiples of the same number	<b>Spring 2</b> <b>Fractions</b> Multiplying proper fractions by whole numbers	<b>Number: decimals</b> Reading and expressing as decimals Equivalents Order and compare
<b>Summer</b>	<b>Summer 1</b> <b>Multiplication and Division</b> 4-digit x 1 digit 2-digit x 2 digit 3-digit x 2 digit 3 digit + 1 digit 4 digit + 1 digit 4 digit + 2 digit	<b>Summer 2</b> <b>Geometry</b> Properties of 2d/3d shape Angles Area and Perimeter and Volume • (total 180°) • other multiples of 90°		<b>Statistics and Time</b> Reading timetables	<b>Position and Direction</b> Reflection Translation

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Year 6						
Year 6	Autumn 1			Autumn 2		
Autumn	Number: Place Value Place value		Number: Addition and Subtraction	Multiplication and Division Factors, multiples, prime numbers 3-digit $\times$ 1 digit 4-digit $\times$ 2 digit 4 digit $\div$ 2 digit		Fractions Simplifying fractions Comparing fractions Add and subtract with different denominators
Spring	Spring 1			Spring 2		
	Fractions Multiplying proper fractions Dividing proper fractions by a whole number		Decimals, percentages Equivalents Parts of whole shape, quantity compare and order	Ratio and Proportion Problem solving involving: Missing values ( $\times$ and $\div$ ) Calculation of percentages Shapes and scale factors Fractions and multiples	Geometry Properties of 2d and 3d shapes	Measure Converting units of measure
Summer	Summer 1			Summer 2		
	Geometry: Position and Direction Position in all 4 quadrants Translation Reflection	Statistics Pie charts Line graphs Mean, median,	SATS	Algebra Use simple formulae Generate and describe linear sequences Express missing number problems algebraically Find pairs of numbers that satisfy an equation with 2 unknowns Enumerate possibilities of combinations of two variables	Properties of Number Revise all NC objectives	Transition units for KS3

Subject leaders have worked to ensure that links in other subjects are exploited wherever possible and there are definite links to real life maths, these are made evident in the planning documents.

### Year 6

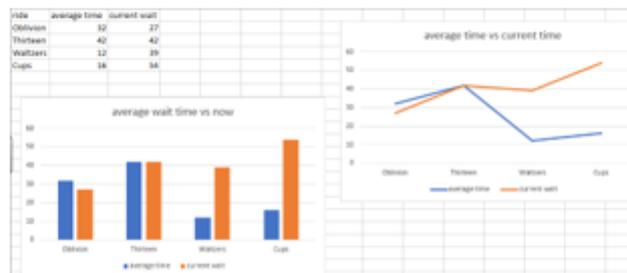
#### Curriculum subject: Design & Technology and Maths

- Find the average wait time for rides at a theme park through Excel calculations.
- Choose from a variety of graph types including - scatter, bar, line etc.
- Know how to use a spreadsheet to undertake simple calculations

Using two different sets of data (average wait time and wait time now) children are able to input both sets of data and choose which graph type is appropriate to compare.

In maths, teach children averages - mode, mean, median and range.

In DT, children will be creating their own Fairground Rides and pitching them after collecting a range of data and conducting market research. Children to complete data as shown below:



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## EYFS to Year 6

In EYFS the children develop a strong grounding in number. It is essential so that all children develop the necessary building blocks to excel mathematically. Children learn to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. They are provided with frequent and varied opportunities to build and apply this understanding - such as using manipulatives, including small pebbles and tens frames for organising counting - children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. The early years curriculum, includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. The children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.

Year on year from Year 1 to Year 6, children will build upon their maths knowledge and skills. The maths subject leader has created a meaningful, sequential learning journey through the subject, ensuring learning is revisited and deepened based upon the National Curriculum expectations. The maths subject leader and curriculum lead have ensured meaningful links between Science, Technology (and in many cases, Geography, PE and Art). Careful curriculum thinking and planning ensures that our children have the subject knowledge and components embedded in their long-term memories.

## Additional Needs in Maths

Our Crown Curriculum has been specifically designed to be a fully inclusive curriculum based on extensive research into learning pedagogies for how children (regardless of need) learn best.

Our 'Queen's Park Quality First Teaching' model ensures that lessons are effectively sequenced so that new knowledge and skills build on what has been taught before and towards defined end points. The maths lead works in collaboration with the school SENCo to ensure that the needs of all children in school are identified as early as possible and the support implemented which they require. As identified in our SEND policy, we implement a full graduated response across school to ensure all our children receive the support they require. Within maths, this may range from access to additional resources, additional intervention or adult support to school seeking external professional assessment in relation to a maths related difficulty. Where necessary, children who are not working on the age-related curriculum are taught a modified curriculum with all teachers taking a 'stage not age' approach when planning their maths curriculum.

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### Equal Opportunities

All pupils will have equal access to the maths curriculum. Gender, learning ability, physical ability, ethnicity, EAL and/or cultural circumstances will not impede pupils from accessing all maths lessons. Where it is inappropriate for a pupil to participate in a lesson because of reasons related to any of the factors outlined above, the lessons will be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary.

## 4. Implementation

### Pedagogy

Both our staff and children are enthusiastic about maths. Through ongoing CPD, we strive to ensure our teachers have expert knowledge of the maths they teach. Our pedagogy is firmly based upon our curriculum intent of embedding concepts into long-term memory through the concrete, pictorial and abstract approach so that they are able to be recalled, to ensure knowledge and skills can be applied fluently. Our pedagogy is informed by evidence based practice (e.g. research by Education Endowment Foundation) to ensure the best possible teaching of maths for our children to ensure maximum progress.

Our 'mastery approach' model ensures that lessons are effectively sequenced so that new knowledge and skills build on what has been taught before and towards defined end points.

Our staff have access to a range of resources to support them with the planning of mathematics (e.g. White Rose and Maths Mastery) however we do not follow one set published scheme for maths as we aim to provide our children with a bespoke curriculum tailored to their educational needs.

### Curriculum lesson structure

At Queen's Park, our teaching of mathematics ensures all planning shows a clear sequential progression from concrete to pictorial to abstract so that our pupils gain a secure and deep learning of all concepts in maths. During the concrete stage, pupils have the opportunity to use concrete objects and manipulatives, such as real life materials, Rekenreks, bead strings, cubes, Diennes or counters to help them understand mathematical concepts. At the pictorial stage, pupils then build on their concrete experience by using pictorial representations, for example using or drawing a number line, drawing a picture to help solve a problem or using pictorial representations of the concrete materials used previously. With the foundations firmly laid in the concrete and pictorial stages, pupils are then able to move to an abstract approach using numbers and key concepts with confidence. Throughout each of these stages, the practical application of the maths skill is discussed. Progression in the teaching of calculation is shown in our 'Calculation Policy', which has been carefully planned to ensure sequential learning is embedded across year groups so that children always build on prior knowledge when learning a new concept.

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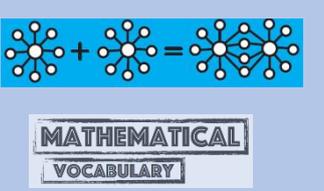
Learning begins with a pre-assessment to assess what the children already know to inform subsequent planning. Where required, this includes specific planning of a previous year's learning objective to recover any lost learning from the COVID 19 school closures. All of our lessons at Queen's Park follow the seven-part lesson structure to keep lessons pacy, give flow and allow more opportunities to teach creatively and collaboratively, give feedback and assess learning. This lesson structure has been developed using EEF research and Rosenshines principles to ensure all lessons reflect the best practice recommended for the teaching of mathematics. The table below shows how the seven parts of our lesson should be taught and the research principles the structure is based on.

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## Queen's Park Maths lesson 7-part lesson structure



	<p>Diagnostic pre-assessment to be completed to inform planning. Pre-planned assessments to tease out any misconceptions that a student may have before a topic commences. <i>(Informed by DFE Maths Recovery, EEF Improving Maths in Early Years and Key Stage 1, EEF Improving Maths in Key Stage 2)</i></p>
	<p style="text-align: center;"><b>Lesson Part 1: Focus on Feedback</b></p> <p>Fix it with an adult should be a quick fix or it should be completed in a mop up session. <i>(Informed by DFE Maths Recovery, EEF Improving Maths in Key Stage 2)</i></p>
	<p style="text-align: center;"><b>Lesson part 2: Recap</b></p> <p>Review prior learning either from previous year group or from earlier lessons. This could be reviewing a misconception that has occurred in the last lesson. You might leave this blank until you have taught the lesson or you might have a question that might check their understanding from the unit or lesson before. <b>This is a new part to our lesson structure.</b> <i>(Informed by DFE Maths Recovery, EEF Improving Maths in Early Years and Key Stage 1, Rosenshine Principles)</i></p>
	<p style="text-align: center;"><b>Lesson Part 3: Hook</b></p> <p>Maths vocabulary introduced-this could be on a separate slide. The key learning should be shared with the pupils at the start of the Hook. The Hook is an introduction to the new learning. Share new learning using small steps. Teachers to model the learning. Explicitly share what you are doing/thinking. You may need several slides to introduce new learning. <i>(Informed by EEF Improving Maths in Early Years and Key Stage 1, EEF Improving Maths in Key Stage 2 and Rosenshine Principles)</i></p>
	<p style="text-align: center;"><b>Lesson Part 4: Talk Time</b></p> <p>The tasks that the pupils will be carrying out should provide them with opportunities to use mathematical language. Teachers should ensure that pupils use the correct language. This section could involve pupils using concrete materials or interpreting representations and concepts. The Talk Task is a crucial opportunity for assessment; all adults need to circulate so that a clear picture of pupils' understanding emerges and can impact on the subsequent segments as required. Children to use full sentences and the correct mathematical vocabulary as part of the mastery approach. <i>(Informed by EEF Improving Maths in Early Years and Key Stage 1, EEF Improving Maths in Key Stage 2 and Rosenshine Principles)</i></p>
	<p style="text-align: center;"><b>Lesson Part 5: Review</b></p> <p>This should be informed by feedback from the Talk Task. This should be reactive and not necessarily pre-planned. <i>(Informed by EEF Improving Maths in Early Years and Key Stage 1 and EEF Improving Maths in Key Stage 2)</i></p>

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	<p style="text-align: center;"><b>Lesson Part 6: Independent Task</b></p> <p>The Independent Task is another vital opportunity for assessment and adults must be deployed carefully so that a clear picture of pupils' understanding emerges.  <i>(Informed by EEF Improving Maths in Early Years and Key Stage 1, EEF Improving Maths in Key Stage 2 and Rosenshine Principles)</i></p>
	<p style="text-align: center;"><b>Lesson Part 7: Plenary</b></p> <p>The plenary is an essential opportunity to gauge levels of understanding and develop pupils' skills in explaining, reasoning and justifying.  <i>(Informed by EEF Improving Maths in Early Years and Key Stage 1, EEF Improving Maths in Key Stage 2 and Rosenshine Principles)</i></p>

All of this allows for cumulative, scaffolded learning where assessment is crucially feeding in to subsequent segments. Pupils are 'doing' straight away and no time is wasted.

Each lesson, within a sequence of learning, follows the structure so prior knowledge is constantly revisited and transferred to long term memory.

Vocabulary is explicitly taught in each lesson and is constantly referred to during each learning stage to ensure the accurate and fluent recall of semantic knowledge from their long term memory. The way that children speak and write about mathematics has been shown to have an impact on their success. Our lessons are carefully sequenced and structured to introduce and reinforce mathematical vocabulary. Every lesson includes opportunities for children to explain or justify their mathematical reasoning.

### **Assessment**

Beginning in EYFS, children's progress and future learning needs are assessed and recorded through frequent observation. Through observation staff will assess their attainment in the three prime areas and the four specific areas against the Early Learning Goals.

When a child enters the Reception class, baseline assessments based on all areas of the EYFS are undertaken. These assessments, together with information from parents and other agencies, aid initial planning. Throughout the year children are observed and assessed regularly. These observations are recorded as snapshots which are then placed in their individual 'Learning Journeys'.

Formative assessment opportunities are threaded throughout an individual lesson and a sequence of lessons and should inform planning for subsequent lessons. At the start of every topic, a 'low-stake' pre-assessment is completed by the children to allow the teacher to assess the starting point in order to effectively plan a sequence of lessons. These pre assessments also give teaching staff an indication of where targeted intervention will be required at the start of a teaching block to ensure all children make expected progress.

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Within a lesson, assessment for learning should occur throughout the entire lesson, enabling teachers/teaching assistants to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular.

Pupil's work should be marked in line with the Marking Policy and where necessary should model how corrections should be made, giving children a chance to learn from their misconceptions or incorrect methods. Every piece of the children's work should be marked using the school's personalised stamp and include a purposeful 'next step' for the child to complete.

Live marking takes place within lessons to address any misconceptions and a structured lesson plan implemented throughout ensures children are focusing on feedback and reviewing learning in every maths lesson.

All children in Key Stage 1 and Key Stage 2 also complete summative assessments at the end of each academic term. We use the NFER maths assessments to assess the children's knowledge and detailed question level analysis is evaluated on all completed assessments to inform planning for the following term.

### **Intervention**

Intervention in maths is in line with the whole school intervention strategy which is based firmly on EEF research. Intervention is informed by assessment which includes live marking within lessons to allow for misconceptions to be addressed immediately. Interventions include pre-teach sessions, 'Mop-up' maths sessions to address misconceptions, targeted interventions where necessary based on individual child's needs, IPP focussed target sessions for children with additional needs and booster sessions as part of our extra-curricular offer. Using the catch-up funding, online tutoring has been made available through Third Space Learning which has further enhanced our intervention offer.

### **Budget**

Andrea Atherton, the Maths Lead, is responsible for the management and maintenance of maths resources, and works collaboratively with the Jan Campbell, the Business Manager, in order to purchase further resources. The yearly budget is £300, however, further funding could be made available if further resources are required.

### **Resources**

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- *Maths resources will be stored in each classroom, including calculators, rulers and protractors.*
- *Resources which are not required regularly, and those in relation to key whole-school topics, will be stored in the storage cupboard in the hall.*
- *Display walls will be utilised and updated regularly, in accordance with the area of maths being taught at the time. These may include live modelling of a fluency calculation or reasoning problem, examples of real life mathematics, examples of mathematical concepts representation through concrete, pictorial and abstract representation and key vocabulary. Working walls should represent the stage of the learning sequence which the children are working at.*
- *Maths equipment and resources will be easily accessible to pupils during lessons.*
- *The Maths Lead, Andrea Atherton, will liaise with staff to undertake an audit of maths equipment and resources on an annual basis.*

## **5. Impact**

*Our well-constructed and well-taught curriculum leads to great results. Our results are a reflection of what our children have learnt. At Queen's Park, there is no conflict between teaching our broad, rich curriculum and achieving success in statutory tests and examinations. National assessments are useful indicators of the outcomes our children achieve.*

*We ensure all groups of children are given the knowledge and cultural capital they need to succeed in life. We strive to ensure that our children are equipped with the skills (through a growth mindset approach) to fluently be able to retrieve key facts from their semantic memory.*

*The quality of our children's work, at every stage, is of a high standard. All learning is built towards a goal and at each stage of their education, we prepare our children for the next stage.*

*The impact of Queen's Park bespoke maths curriculum is measured through the following:*

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- Regularly planned assessment weeks at the end of each academic term and the evaluation of question level analysis of completed tests.
- In depth analysis of internal data completed by the maths lead and other members of the management team, including the SENCo and Pupil Premium Lead.
- Ongoing assessment throughout lessons to address misconceptions.
- Curriculum Enhancement Plans, 'Curriculum Weeks' and 'Enhancement / Inspire Days'- 'Maths Days' etc. Impact is measured using pupil voice and parental questionnaires
- Progress evident in children's books and record of experiences
- Timetabled monitoring cycle including lesson observations, book looks and pupil interviews.
- Children's university graduates and extracurricular activities

## 6. Roles and Responsibilities

Our maths subject leader is Mrs Andrea Atherton. She is responsible for:

- Preparing policy documents, curriculum plans and schemes of work for the subject.
- Reviewing changes to the national curriculum and advising on their implementation.
- Monitoring the learning and teaching of maths for all pupils, providing support for staff where necessary.
- Ensuring the continuity and progression from year group to year group.
- Encouraging staff to provide effective learning opportunities for pupils.
- Helping to develop colleagues' expertise in the subject.
- Organising the deployment of resources and carrying out an audit of all maths-related resources when required.
- Liaising with teachers across all phases.
- Communicating developments in the subject to all teaching staff.
- Leading staff meetings and providing staff members with the appropriate training.
- Organising, providing and monitoring CPD opportunities in the subject.
- Ensuring common standards are met for recording and assessing pupil performance.
- Ensuring the intervention strategy for maths is fully embedded throughout school.
- Advising on the contribution of maths to other curriculum areas, including cross-curricular and extra curricular activities.
- Working alongside parents and other stakeholders to promote maths in school
- Reporting to governors in relation to the implementation and progress in maths

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- Collating assessment data, monitoring trends in data including the performance of SEND and disadvantaged pupils and reporting back to management and other stakeholders.

All teaching staff are responsible for:

- Acting in accordance with this policy.
- Ensuring progression of pupils' mathematical skills, with due regard to the national curriculum.
- Planning lessons effectively, ensuring a range of teaching methods are used to cover the content of the national curriculum.
- Liaising with the subject leader about key topics, resources and support for individual pupils.
- Monitoring the progress of pupils in their class and reporting this on an annual basis to parents.
- Reporting any concerns regarding the teaching of the subject to the subject leader or a member of the senior leadership team (SLT).
- Undertaking any training that is necessary in order to effectively teach the subject.

Our Maths Governor is Mr Steven Howarth. He is responsible for overseeing the implementation of this policy and monitoring the standards of maths across the school alongside the subject leader. The maths subject leader and maths governor meet regularly to work collaboratively.

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