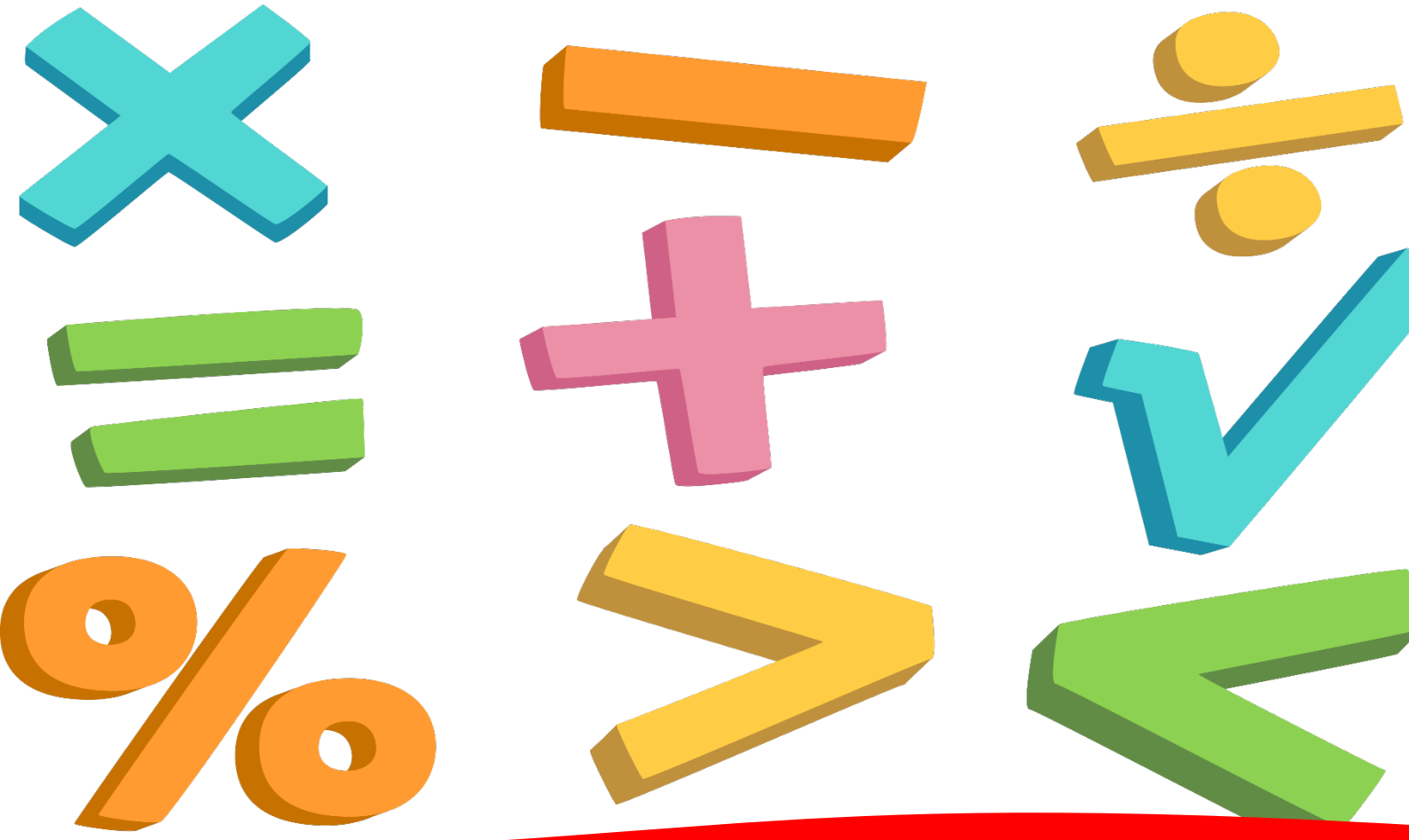
# Dodworth St John the Baptist C of E Primary Academy



# Maths Curriculum

# Contents

# Rationale & Intent

Maths learning at Dodworth St John's strives to create a learning environment in which children can confidently learn and achieve, independently and collaboratively, to the best of their ability. Our maths curriculum aims to provide children with the opportunity to develop a curiosity for maths, develop enjoyment and passion for the subject, allowing them to understand the world around them through mathematical reasoning.

Considerable importance is attached to the children achieving and understanding mathematical processes, concepts and skills. A positive attitude to maths learning is encouraged by presenting it in an interesting and enjoyable way, allowing the children to actively participate in the learning process, thus creating a sense of achievement and confidence. There is a strong emphasis on the development of mental arithmetic and giving opportunities for pupils to use and apply mathematics in real life situations.

Using effective planning, teaching and learning strategies, assessment and knowledge of our children, we aim to develop and extend pupils' knowledge and understanding of all mathematical concepts.

Maths is taught through a daily Maths lesson which follows the principles of the National curriculum:

- Become fluent in the fundamentals of mathematics, including the varied and regular practice of increasingly complex problems over time.
- Reason mathematically by following a line of enquiry, understanding relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can solve problems by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

At Dodworth St John, we teach the National Curriculum for Maths (2014).

Alongside this, we ensure that all pupils:

- See themselves as confident mathematicians across a range of concepts.
- Are excited and enthused by maths.
- Draw on their knowledge and skills to reason and problem solve.
- Develop their ability to see and feel the maths through use of concrete resources and visual representations, regardless of level or ability.
- Understand the importance of number sense, accuracy and resilience.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between mathematical ideas. The programmes of study are, by necessity, organised into distinct areas, but pupils will make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They will also apply their mathematical knowledge to science and other subjects.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress will always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly will be challenged through being offered rich and sophisticated problems before any acceleration through new content.

Class teachers also plan for opportunities to develop and apply key mathematical skills in other subject areas throughout the year.

# Our aims for Maths

At Dodworth St John, our overarching aims support our school's values:

**We are kind and honest:**

- We have high expectations of all children in Maths and want them to see themselves as confident Mathematicians.
- We encourage, promote and celebrate high levels of oracy and vocabulary, promoting thoughtful and considerate answers to orally reason and problem solve.
- Our curriculum uses precise, informative feedback, within the lesson, to develop key skills and eliminate misconceptions in the moment.

**We learn about life in all its fullness:**

- developing curiosity and confidence in exploring numbers, patterns and relationships
- learning to solve problems with resilience, creativity and perseverance
- understanding how mathematics helps us make sense of the world around us
- using logical thinking to make decisions and explain our ideas clearly
- recognising that mistakes help us grow and deepen our understanding
- working collaboratively, valuing different strategies and viewpoints
- applying mathematical skills to real-life situations, preparing us for the future
- developing a sense of fairness, accuracy and responsibility when working with data and money
- appreciating the beauty and order found in mathematical patterns and structures
- building independence and self-belief as we tackle increasingly complex challenges

**We work, play, and live as a team:**

- creating frequent opportunities to collaborate, share ideas and learn from one another
- developing respect, kindness and empathy as we support each other through challenges
- learning that everyone has a voice and that different perspectives strengthen our community
- building confidence through cooperation, encouragement and shared success
- experiencing learning as a joyful, collective journey rather than an individual task
- developing a strong sense of belonging where everyone feels valued and included
- celebrating effort, progress and achievement together.

Through this, we are confident that our maths curriculum ensures that children achieve our school vision: preparing our pupils for life's big adventures.

# What will children learn?

In Mathematics, we follow the White Rose Maths scheme of learning, which supports high-quality teaching in mixed year group classes. The structure of the scheme enables children to work together while still ensuring that each pupil is supported to meet the expectations of the National Curriculum for their year group. Carefully sequenced learning allows concepts to be explored in depth, with opportunities for children to revisit, practise and apply their understanding at an appropriate level. This approach means that teaching is inclusive and coherent, without the need to teach each year group separately, while still ensuring clear progression and challenge for all learners. Through this shared learning experience, children develop confidence, independence and a deeper understanding of mathematics as they grow.

## Long term sequence:

At Dodworth St John, we deliver a rich, skills-focused mathematics curriculum that works effectively in mixed-year group classes. Using the White Rose Maths scheme, learning is carefully sequenced to allow children of different ages and abilities to explore concepts together while still meeting the expectations of the National Curriculum for their own year group.

Mathematical concepts are introduced, developed, and revisited in ways that support all learners, allowing children to progress at their own pace. Children are given regular opportunities to practise and apply their learning in a variety of contexts, strengthening fluency, reasoning, and problem-solving skills while benefiting from collaborative, peer-supported learning.

## Progression of knowledge:

In mixed-year classes, children build their mathematical knowledge progressively over time. Concepts are revisited and extended through carefully planned lessons, enabling older and younger children to consolidate prior learning while exploring new ideas at an appropriate level. This approach encourages children to make connections between areas of mathematics and supports deep understanding for all.

## Progression of skills:

Teachers use a well-sequenced progression of skills, supported by assessment materials, to ensure all key mathematical skills are covered across year groups. The curriculum is designed so that children can develop skills at a pace appropriate to their individual stage of learning, while ensuring full coverage of the National Curriculum. Mixed-age teaching provides opportunities for peer learning, collaboration, and mentoring, enabling children to learn from each other while reinforcing their own understanding.

## Times Tables:

In addition to times tables being developed progressively, in line with the National Curriculum and our White Rose Maths small steps, we also have dedicated time for retrieval practice. Daily ‘Basic Skills’ sessions enable our children in Key Stage Two to focus on the development of fluency with times table facts. A range of resources are used to achieve this. This includes the use of Times Table Rock Stars online, printed booklets and worksheets, games, class songs and chanting. Children in Year 3 and 4 participate in a weekly ‘soundcheck’ which emulates the Year 4 Multiplication Check. This allows us to deliver specific, targeted intervention for knowledge and fluency.

# Implementation – How will we deliver the curriculum?

Maths is taught daily across the school through carefully planned sequences of learning, with clear outcomes and small steps identified for each unit. Teaching and learning are centred on high-quality resources that are suitable for establishing a good understanding of a range of mathematical concepts.

Maths lessons are designed around a whole school pedagogical approach that consists of six fundamental pillars.

1. Clarity – Understanding the breakdown and sequencing of small steps of learning.
2. Recall/Retrieval - This can look like the WRM Flashback 4 in this context. In KS1 this will include daily practice of number formation.
3. Explanation – Teaching of new skills with an 'I do' approach.
4. Check – Checking for understanding through 'We do' tasks, mini whiteboard work, show me tasks and targeted questioning. Misconceptions should be picked up at this stage.
5. Practice – Opportunities for independent practice of fluency, varied fluency and reasoning and problem-solving tasks. Children identified at the 'check' stage as having misconceptions or gaps in learning may need additional modelling and guided practice at this point of the lesson.
6. Feedback – We aim to give feedback in the moment through AfL and live marking.

# What does a Maths lesson look like?

## What does a Maths lesson look like in Nursery and Reception?

White Rose Maths is delivered through engaging, practical learning that allows children to explore early mathematical concepts through play, discussion, and hands-on experiences. Teaching focuses on developing a deep understanding of number, pattern, shape, and measure through small steps and carefully structured activities. Children are encouraged to use mathematical language, notice patterns, compare quantities, and explain their thinking. Adults model strategies, ask thoughtful questions, and provide opportunities for children to practise skills in both adult-led sessions and continuous provision. Resources such as manipulatives, visual representations, and real-life contexts help children build confidence and fluency while developing positive attitudes towards maths. This approach ensures that all children develop secure foundations in early mathematics before moving into Key Stage 1.

## What does a Maths lesson look like in Key Stage 1 and Key Stage 2?

In Key Stage 1 at Dodworth St John's, White Rose Maths is taught through a carefully sequenced approach that builds on the strong foundations established in EYFS. Lessons follow the small steps structure, allowing pupils to develop a secure understanding of number and key mathematical concepts before moving on. Teachers use a concrete–pictorial–abstract approach so that children first explore ideas with practical resources, then visual representations, and finally more formal written methods. Pupils are encouraged to explain their reasoning, use mathematical vocabulary, and solve problems in different contexts. Through regular practice and varied fluency activities, children develop confidence, accuracy, and resilience in their mathematical learning.

In Key Stage 2 at Dodworth St John's, White Rose Maths continues to provide a clear, structured progression of learning that deepens pupils' mathematical understanding. Lessons build on prior knowledge through small, manageable steps, allowing children to develop fluency, reasoning, and problem-solving skills. Pupils are encouraged to explore different strategies, justify their answers, and make connections between concepts. Teachers use a range of representations and models to support understanding, while carefully planned questions challenge pupils to think critically. Regular opportunities for discussion, collaborative learning, and independent practice help pupils to become confident, reflective mathematicians who can apply their knowledge to a range of real-life situations.

# Assessment & Impact

Assessment is a fundamental part of teaching and learning at Dodworth St John's and takes place continuously throughout the school. Ongoing assessment enables teachers to ensure that learning activities provide an appropriate level of challenge and effectively support pupils' progress. It also helps staff to identify pupils who may need additional support at an early stage, allowing intervention to be planned proactively.

Formative assessment takes place daily through teaching and learning activities. This informs future planning, allows teachers to make timely adjustments within lessons, and supports close monitoring of pupils' understanding and progress. Where a concept or skill has not yet been securely understood, it may be revisited in future units of work. Across the school, teachers use a range of strategies including ongoing dialogue with pupils, careful observation, responsive feedback during learning, and opportunities for both self- and peer-assessment.

In Key Stage 1, pupils' mathematics progress is initially assessed through Teacher Assessment in the Autumn term, supported by end-of-unit and end-of-term assessments from White Rose Maths. In the Spring term, this process continues for Year 1 pupils, while Year 2 pupils are assessed using previous KS1 SATs papers. In the Summer term, Year 1 pupils complete NFER assessment papers and Year 2 pupils take part in the optional KS1 SATs assessments. In Key Stage 2, pupils' progress in mathematics is reviewed three times a year using NFER assessments. Pupils in Year 6 are also assessed using past KS2 SATs papers. This process supports accurate assessment across the school and helps teachers identify appropriate next steps in pupils' learning.

## Pupil voice:

We understand that pupils are the best way to show how effective our curriculum is. Pupil voice will demonstrate:

- That pupils are able to explain the teaching approach to Maths clearly.
- The consistent use of the pedagogical approach across all classes ensures that the pupils can talk about their learning and that they are clear on what they are working towards in each unit of work.
- That pupils are engaged with Maths lessons, enjoy maths and can reason and problem solve with confidence.
- That they are proud of their maths work and want to willingly talk about their learning.

## High quality outcomes:

We will monitor our curriculum through book studies and discussions with pupils. Alongside this, we will ensure that:

- Children's books show that children are able to access a range of mathematical questions and explain their reasoning with appropriate vocabulary.
- Books show a clear progression of skills that develop over time in a logical sequence.
- Maths outcomes are good and showed a marked improvement in our End of Key Stage 2 outcomes.

# Nursery Long Term Plan

| Comparison 1 | Shape, Space & Measure 1 | Pattern 1 | Counting 1 | Counting 2 | Subitising 1 |
|---|---|---|---|---|---|
| More than, fewer than, same | Explore and build with shapes and objects | Explore repeats | Hear and say number names | Begin to order number names | I see 1, 2, 3 |
| **Pattern 2** | **Shape, Space & Measure 2** | **Subitising 2** | **Counting 3** | **Shape, Space & Measure 3** | **Pattern 3** |
| Join in with repeats | Explore position and shape | Show me 1, 2, 3 | Move and label 1, 2, 3 | Explore position and routes | Explore own first patterns |
| **Counting 4** | **Shape, Space & Measure 4** | **Subitising 3** | **Comparison 2** | **Pattern 4** | **Shape, Space & Measure 5** |
| Take and give 1, 2, 3 | Match, talk, push and pull | Talk about dots | Compare and sort collections | Lead on own repeats | Start to puzzle |
| **Pattern 5** | **Subitising 4** | **Counting 5** | **Pattern 6** | **Counting 6** | **Comparison 3** |
| Making patterns together | Make games and actions | Show me 5 | My own pattern | Stop at 1, 2, 3, 4, 5 | Match, sort, compare |

# Reception Long Term Plan

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Autumn Term | Getting to Know You | Match, Sort & Compare | Talk about Measures & Patterns | It's Me 1, 2, 3 | Circle & Triangles | 1, 2, 3, 4, 5 | Shapes with 4 sides |
| Spring Term | Alive in 5 | Mass & Capacity | Growing 6, 7, 8 | Length, Height & Time | Building 9 & 10 | Explore 3D Shapes | |
| Summer Term | To 20 and Beyond | How Many Now? | Manipulate, Compose & Decompose | Sharing & Grouping | Visualise, Build & Map | Make Connections | Consolidation |

# Year 1/2 Long Term Plan

| | | | | | | |
|---|---|---|---|---|---|---|
| Autumn Term | Place Value (within 20) | Addition & Subtraction (within 20) | Place Value (within 100) | | Shape | |
| Spring Term | Addition & Subtraction (within 100) | | Multiplication & Division | Length & Height | Statistics | Consolidation |
| Summer Term | Money | Fractions | Time | Mass, Capacity & Temperature | Position & Direction | Consolidation |

# Year 3/4 Long Term Plan

| | | | | | | |
|---|---|---|---|---|---|---|
| Autumn Term | Place Value | | Addition & Subtraction | | Multiplication & Division A | Area |
| Spring Term | Multiplication & Division B | Length & Perimeter | Fractions A | | Mass & Capacity | Fractions B |
| Summer Term | Time | Decimals | Money | Shape | Position & Direction | Statistics |

# Year 5/6 Long Term Plan

| | | | | | | |
|---|---|---|---|---|---|---|
| Autumn Term | Place Value | | Addition & Subtraction | Multiplication & Division A | Fractions A | Multiplication & Division B |
| Spring Term | Multiplication & Division B | Fractions B | Decimals A | Area, Perimeter & Volume | Decimals B | Fractions, Decimals & Percentages |
| Summer Term | Ratio | Algebra | Shape | Position & Direction | Statistics | Converting Units |

# Place Value Progression

| COUNTING | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| count in rote to 10<br>count in<br><br>correspondence to 7<br>subitise to 3<br><br>show 5 using one hand and 10 using two hands | verbally count beyond 20<br><br>1:1 correspondence to 10 | count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number | | | count backwards through zero to include negative numbers | interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero | use negative numbers in context, and calculate intervals across zero |
| | Represent and compose numbers to 10<br><br>Build and identify numbers to 20 | count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens | count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward | count from 0 in multiples of 4, 8, 50 and 100; | count in multiples of 6, 7, 9, 25 and 1000 | count forwards or backwards in steps of powers of 10 for any given number up to 1000 000 | |
| Identify more/less | Identify one more and one less within 10 | given a number, identify one more and one less | | find 10 or 100 more or less than a given number | find 1000 more or less than a given number | | |
| **COMPARING NUMBERS** | | | | | | | |
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Use 'my turn, your turn' to show equal amounts | Order quantities and numbers to 10 | use the language of: equal to, more than, less than (fewer), most, least | compare and order numbers from 0 up to 100; use <, > and = signs | compare and order numbers up to 1000 | order and compare numbers beyond 1000<br><br>*compare numbers with the same number of decimal places up to two decimal places* (copied from Fractions) | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) | read, write, order and compare numbers up to 10 000000 and determine the value of each digit (appears also in Reading and Writing Numbers) |

| IDENTIFYING, REPRESENTING AND ESTIMATING NUMBERS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | read and write numbers to 10 | read and write numbers from 1 to 20 in numerals and words. | read and write numbers to at least 100 in numerals and in words | read and write numbers up to 1000 in numerals and in words | read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Comparing Numbers) | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value) |

| READING AND WRITING NUMBERS (including Roman Numerals) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | read and write numbers to 10 | read and write numbers from 1 to 20 in numerals and words. | read and write numbers to at least 100 in numerals and in words | read and write numbers up to 1000 in numerals and in words<br><br>*tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks* (copied from Measurement) | read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Comparing Numbers)<br><br>read Roman numerals to 1000 (M) and recognise years written in Roman numerals. | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value) |

| UNDERSTANDING PLACE VALUE | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | recognise the place value of each digit in a two-digit number (tens, ones) | recognise the place value of each digit in a three-digit number (hundreds, tens, ones) | recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) |
| | | | | | *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 units, tenths and hundredths* (copied from Fractions) | *recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents* (copied from Fractions) | *identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places* (copied from Fractions) |
| **ROUNDING** | | | | | | | |
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | | round any number to the nearest 10, 100 or 1 000 | round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000 | round any whole number to a required degree of accuracy |
| | | | | | *round decimals with one decimal place to the nearest whole number* (copied from Fractions) | *round decimals with two decimal places to the nearest whole number and to one decimal place* (copied from Fractions) | *solve problems which require answers to be rounded to specified degrees of accuracy* (copied from Fractions) |
| **PROBLEM SOLVING** | | | | | | | |
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | use place value and number facts to solve problems | solve number problems and practical problems involving these ideas. | solve number and practical problems that involve all of the above and with increasingly large positive numbers | solve number problems and practical problems that involve all of the above | solve number and practical problems that involve all of the above |

# Addition & Subtraction Progression

| NUMBER BONDS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | know number bonds to 10 | represent and use number bonds and related subtraction facts within 20 | recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 | | | | |
| **MENTAL CALCULATION** | | | | | | | |
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| subitise to 3 | subitise to 10 | add and subtract one-digit and two-digit numbers to 20, including zero | add and subtract numbers using concrete objects, pictorial representations, and mentally, including:<br>* a two-digit number and ones<br>* a two-digit number and tens<br>* two two-digit numbers<br>* adding three one-digit numbers | add and subtract numbers mentally, including:<br>* a three-digit number and ones<br>* a three-digit number and tens<br>* a three-digit number and hundreds | | add and subtract numbers mentally with increasingly large numbers | perform mental calculations, including with mixed operations and large numbers |
| | | read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods) | show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot | | | | use their knowledge of the order of operations to carry out calculations involving the four operations |

| WRITTEN METHODS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation) | | add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction | add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate | add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) | |
| **INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS** | | | | | | | |
| | | | recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | estimate the answer to a calculation and use inverse operations to check answers | estimate and use inverse operations to check answers to a calculation | use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| **PROBLEM SOLVING** | | | | | | | |
| | | solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = □ - 9 | solve problems with addition and subtraction:<br>* using concrete objects and pictorial representations, including those involving numbers, quantities and measures<br>* applying their increasing knowledge of mental and written methods | solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction | solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why | solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why | solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why |
| | | | *solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change* (copied from Measurement) | | | | Solve problems involving addition, subtraction, multiplication and division |

# Multiplication & Division Progression

| MULTIPLICATION & DIVISION FACTS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| share into equal groups | make pairs<br><br>begin to double numbers | *count in multiples of twos, fives and tens* (copied from Number and Place Value) | *count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward* (copied from Number and Place Value) | *count from 0 in multiples of 4, 8, 50 and 100* (copied from Number and Place Value) | *count in multiples of 6, 7, 9, 25 and 1 000* (copied from Number and Place Value) | *count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000* (copied from Number and Place Value) | |
| | identify odd and even numbers to 10 | | recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers | recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables | recall multiplication and division facts for multiplication tables up to 12 × 12 | | |
| **MENTAL CALCULATION** | | | | | | | |
| | | | | write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Written Methods) | use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers | multiply and divide numbers mentally drawing upon known facts | perform mental calculations, including with mixed operations and large numbers |
| | | | show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot | | recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers) | multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 | *associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)* (copied from Fractions) |

| WRITTEN CALCULATION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs | write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Mental Methods) | multiply two-digit and three-digit numbers by a one-digit number using formal written layout | multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers | multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication |
| | | | | | | divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context | divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context |
| | | | | | | | *use written division methods in cases where the answer has up to two decimal places* (copied from Fractions (including decimals)) |

| PROPERTIES OF NUMBERS: MULTIPLES, FACTORS, PRIMES, SQUARE AND CUBE NUMBERS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | | recognise and use factor pairs and commutativity in mental calculations (repeated) | identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.<br>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers<br>establish whether a number up to 100 is prime and recall prime numbers up to 19 | identify common factors, common multiples and prime numbers<br>*use common factors to simplify fractions; use common multiples to express fractions in the same denomination*<br>(copied from Fractions) |
| | | | | | | recognise and use square numbers and cube numbers, and the notation for squared ($^2$) and cubed ($^3$) | *calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ($cm^3$) and cubic metres ($m^3$), and extending to other units such as $mm^3$ and $km^3$*<br>(copied from Measures) |

| ORDER OF OPERATIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | | | | use their knowledge of the order of operations to carry out calculations involving the four operations |
| **INVERSE OPERATIONS, ESTIMATING AND CHECKING ANSWERS** | | | | | | | |
| | | | | *estimate the answer to a calculation and use inverse operations to check answers* (copied from Addition and Subtraction) | *estimate and use inverse operations to check answers to a calculation* (copied from Addition and Subtraction) | | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy |
| **PROBLEM SOLVING** | | | | | | | |
| | | 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 | solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts | solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects | solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects | solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes | solve problems involving addition, subtraction, multiplication and division |
| | | | | | | solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign | |
| | | | | | | solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates | *solve problems involving similar shapes where the scale factor is known or can be found* (copied from Ratio and Proportion) |

# Fractions, Decimals & Percentages Progression

| COUNTING IN FRACTIONAL STEPS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | *Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)* | count up and down in tenths | count up and down in hundredths | | |
| **RECOGNISING FRACTIONS** | | | | | | | |
| share objects into two equal groups | share objects into equal groups<br><br>understand the language 'whole' and 'parts' | recognise, find and name a half as one of two equal parts of an object, shape or quantity | recognise, find, name and write fractions $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ of a length, shape, set of objects or quantity | recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators | recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten | recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence) | |
| | | | | recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10. | | | |
| | | recognise, find and name a quarter as one of four equal parts of an object, shape or quantity | | recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators | | | |
| **COMPARING FRACTIONS** | | | | | | | |
| | | | | compare and order unit fractions, and fractions with the same denominators | | compare and order fractions whose denominators are all multiples of the same number | compare and order fractions, including fractions >1 |

| COMPARING DECIMALS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | | compare numbers with the same number of decimal places up to two decimal places | read, write, order and compare numbers with up to three decimal places | identify the value of each digit in numbers given to three decimal places |
| **ROUNDING INCLUDING DECIMALS** | | | | | | | |
| | | | | | round decimals with one decimal place to the nearest whole number | round decimals with two decimal places to the nearest whole number and to one decimal place | solve problems which require answers to be rounded to specified degrees of accuracy |
| **EQUIVALENCE (INCLUDING FRACTIONS, DECIMALS AND PERCENTAGES)** | | | | | | | |
| | | | write simple fractions e.g. $^1/_2$ of 6 = 3 and recognise the equivalence of $^2/_4$ and $^1/_2$. | recognise and show, using diagrams, equivalent fractions with small denominators | recognise and show, using diagrams, families of common equivalent fractions | identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths | use common factors to simplify fractions; use common multiples to express fractions in the same denomination |
| | | | | | recognise and write decimal equivalents of any number of tenths or hundredths | read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$)<br>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents | associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$) |
| | | | | | recognise and write decimal equivalents to $^1/_4$; $^1/_2$; $^3/_4$ | 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 as a decimal fraction | recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. |

| ADDITION AND SUBTRACTION OF FRACTIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | add and subtract fractions with the same denominator within one whole (e.g. $^5/_7 + ^1/_7 = ^6/_7$) | add and subtract fractions with the same denominator | add and subtract fractions with the same denominator and multiples of the same number | add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions |
| | | | | | | recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $^2/_5 + ^4/_5 = ^6/_5 = 1^1/_5$) | |
| **MULTIPLICATION AND DIVISION OF FRACTIONS** | | | | | | | |
| | | | | | | multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams | multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^1/_4 \times ^1/_2 = ^1/_8$) |
| | | | | | | | multiply one-digit numbers with up to two decimal places by whole numbers |
| | | | | | | | divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = ^1/_6$) |

| MULTIPLICATION AND DIVISION OF DECIMALS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | | | | multiply one-digit numbers with up to two decimal places by whole numbers |
| | | | | | 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 | | multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places |
| | | | | | | | identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places |
| | | | | | | | associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$) |
| | | | | | | | use written division methods in cases where the answer has up to two decimal places |

| PROBLEM SOLVING | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | solve problems that involve all of the above | 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 | solve problems involving numbers up to three decimal places | |
| | | | | | solve simple measure and money problems involving fractions and decimals to two decimal places. | solve problems which require knowing percentage and decimal equivalents of $^{1}/_{2}$, $^{1}/_{4}$, $^{1}/_{5}$, $^{2}/_{5}$, $^{4}/_{5}$ and those with a denominator of a multiple of 10 or 25. | |

# Ratio & Proportion Progression

| Statements only appear in Year 6 but should be connected to previous learning, particularly fractions and multiplication and division | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | | | | solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts |
| | | | | | | | solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison |
| | | | | | | | solve problems involving similar shapes where the scale factor is known or can be found |
| | | | | | | | solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. |

# Algebra Progression

| EQUATIONS | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | *solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and* ***missing number problems*** *such as* *7 = □ - 9* (copied from Addition and Subtraction) | *recognise and use the inverse relationship between addition and subtraction and use this to check calculations and* ***missing number*** *problems.* (copied from Addition and Subtraction) | solve problems, *including* ***missing number*** *problems, using number facts, place value, and more complex addition and subtraction.* (copied from Addition and Subtraction)<br><br>*solve problems, including* ***missing number*** *problems, involving multiplication and division, including integer scaling* (copied from Multiplication and Division) | | *use the properties of rectangles to deduce related facts and find* ***missing lengths and angles*** (copied from Geometry: Properties of Shapes) | express missing number problems algebraically |
| | | | *recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100* (copied from Addition and Subtraction) | | | | find pairs of numbers that satisfy number sentences involving two unknowns |
| | | *represent and use number bonds and related subtraction facts within 20* (copied from Addition and Subtraction) | | | | | enumerate all possibilities of combinations of two variables |

| FORMULAE | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | | *Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit.*<br>*(Copied from NSG measurement)* | | use simple formulae<br>*recognise when it is possible to use* ***formulae*** *for area and volume of shapes*<br>(copied from Measurement) |
| **SEQUENCES** | | | | | | | |
| sequence events from a story using first and then | sequence events using first, then, after | *sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening*<br>(copied from Measurement) | *compare and sequence intervals of time*<br>(copied from Measurement)<br>*order and arrange combinations of mathematical objects in patterns*<br>(copied from Geometry: position and direction) | | | | generate and describe linear number sequences |

# Measurement Progression

| COMPARING AND ESTIMATING | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| sort objects by colour and size<br><br>begin to use the words big, small, tall, heavy, light, full, empty, long and short to describe objects<br><br>match objects that are the same | compare and sort amounts and objects<br><br>compare amounts in mass and capacity<br><br>confidently use the words big, small, tall, heavy, light, full, empty, long and short to describe objects | compare, describe and solve practical problems for:<br>* lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]<br>* mass/weight [e.g. heavy/light, heavier than, lighter than]<br>* capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter]<br>* time [e.g. quicker, slower, earlier, later] | compare and order lengths, mass, volume/capacity and record the results using >, < and = | | estimate, compare and calculate different measures, including money in pounds and pence<br>(also included in Measuring) | calculate and compare the area of squares and rectangles including using standard units, square centimetres ($cm^2$) and square metres ($m^2$) and estimate the area of irregular shapes (also included in measuring)<br><br>estimate volume (e.g. using 1 $cm^3$ blocks to build cubes and cuboids) and capacity (e.g. using water) | calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed ($cm^3$) and cubic metres ($m^3$), and extending to other units such as $mm^3$ and $km^3$. |
| sequence events from a story that is familiar to them | sequence events using first, then, after | sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] | compare and sequence intervals of time | compare durations of events, for example to calculate the time taken by particular events or tasks | | | |
| | | | | estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time) | | | |

| MEASURING and CALCULATING | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | compare amounts in mass and capacity<br><br>explore the concept of height | measure and begin to record the following:<br>* **lengths and heights**<br>* **mass/weight**<br>* **capacity and volume**<br>* **time** (hours, minutes, seconds**)** | 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 | measure, compare, add and subtract: **lengths** (m/cm/mm); **mass** (kg/g); **volume/capacity** (l/ml) | estimate, compare and calculate **different measures,** including **money in pounds and pence**<br>(appears also in Comparing) | use all four operations to solve problems involving measure (e.g. **length, mass, volume, money**) using decimal notation including scaling. | solve problems involving the calculation and conversion of **units of measure**, using decimal notation up to three decimal places where appropriate<br>(appears also in Converting) |
| | | | | measure the **perimeter** of simple 2-D shapes | measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres | measure and calculate the **perimeter** of composite rectilinear shapes in centimetres and metres | recognise that shapes with the same areas can have different **perimeters** and vice versa |

| MEASURING and CALCULATING | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | recognise and know the value of different denominations of **coins and notes** | recognise and use symbols for pounds **(£) and pence (p)**; combine amounts to make a particular value<br><br>find different combinations of coins that equal the same amounts of money<br><br>**solve simple problems** in a practical context involving addition and subtraction of money of the same unit, including giving change | add and subtract amounts of **money** to give change, using both £ and p in practical contexts | | | |
| | | | | | find the area of rectilinear shapes by counting squares | calculate and compare the area of squares and rectangles including using standard units, square centimetres ($cm^2$) and square metres ($m^2$) and estimate the area of irregular shapes<br><br>*recognise and use square numbers and cube numbers, and the notation for squared ($^2$) and cubed ($^3$)*<br>(copied from Multiplication and Division) | calculate the area of parallelograms and triangles<br><br>calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres ($cm^3$) and cubic metres ($m^3$), and extending to other units [e.g. $mm^3$ and $km^3$].<br><br>recognise when it is possible to use formulae for area and volume of shapes |

| TELLING THE TIME | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | 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. | tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks | read, write and convert time between analogue and digital 12 and 24-hour clocks (appears also in Converting) | | |
| | explore the concept of time | recognise and use language relating to dates, including days of the week, weeks, months and years | know the number of minutes in an hour and the number of hours in a day. (appears also in Converting) | estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Comparing and Estimating) | | | |
| | | | | | solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting) | solve problems involving converting between units of time | |

| CONVERTING | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | know the number of minutes in an hour and the number of hours in a day.<br>(appears also in Telling the Time) | know the number of seconds in a minute and the number of days in each month, year and leap year | convert between different units of measure (e.g. kilometre to metre; hour to minute) | convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) | use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places |
| | | | | | read, write and convert time between analogue and digital 12 and 24-hour clocks<br>(appears also in Converting) | solve problems involving converting between units of time | solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate<br>(appears also in Measuring and Calculating) |
| | | | | | solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days<br>(appears also in Telling the Time) | understand and use equivalences between metric units and common imperial units such as inches, pounds and pints | convert between miles and kilometres |

# Shape Progression

| IDENTIFYING SHAPES AND THIER PROPERTIES | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| identify a square, circle and a triangle | identify and describe a circle, triangle, square and rectangle<br><br>identify a cube, sphere, cylinder and cone | recognise and name common 2-D and 3-D shapes, including:<br>* 2-D shapes [e.g. rectangles (including squares), circles and triangles]<br>* 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres]. | identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line<br><br>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces<br><br>identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] | | identify lines of symmetry in 2-D shapes presented in different orientations | identify 3-D shapes, including cubes and other cuboids, from 2-D representations | recognise, describe and build simple 3-D shapes, including making nets (appears also in Drawing and Constructing)<br><br>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius |
| **DRAWING AND CONSTRUCTING** | | | | | | | |
| | | | | draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them | complete a simple symmetric figure with respect to a specific line of symmetry | draw given angles, and measure them in degrees ($^{o}$) | draw 2-D shapes using given dimensions and angles<br><br>recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties) |

| COMPARING AND CLASSIFYING | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| sort objects by colour and size | sort objects in a variety of different ways | | compare and sort common 2-D and 3-D shapes and everyday objects | | compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes | use the properties of rectangles to deduce related facts and find missing lengths and angles<br><br>distinguish between regular and irregular polygons based on reasoning about equal sides and angles | compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons |
| **ANGLES** | | | | | | | |
| | | | | recognise angles as a property of shape or a description of a turn | | know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles | |
| | | | | 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 acute and obtuse angles and compare and order angles up to two right angles by size | identify:<br>* angles at a point and one whole turn (total 360°)<br>* angles at a point on a straight line and ½ a turn (total 180°)<br>* other multiples of 90° | recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles |
| | | | | identify horizontal and vertical lines and pairs of perpendicular and parallel lines | | | |

# Position, Direction & Movement Progression

| POSITION, DIRECTION AND MOVEMENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| use positional language – on top, under, next to, behind<br><br>discuss routes and locations using appropriate language | confidently use positional language – under, over, around, through | describe position, direction and movement, including half, quarter and three-quarter turns. | 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) | | describe positions on a 2-D grid as coordinates in the first quadrant<br><br>describe movements between positions as translations of a given unit to the left/right and up/down | 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 | describe positions on the full coordinate grid (all four quadrants)<br><br>draw and translate simple shapes on the coordinate plane, and reflect them in the axes. |
| | | | | | plot specified points and draw sides to complete a given polygon | | |
| **PATTERN** | | | | | | | |
| identify patterns around them<br><br>make an ABAB repeating pattern<br><br>notice and correct an error in a repeating pattern | make an AAB/ABB repeating pattern | | order and arrange combinations of mathematical objects in patterns and sequences | | | | |

# Data Progression

| INTERPRETING, CONSTRUCTING AND PRESENTING DATA | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nursery** | **Reception** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | interpret and construct simple pictograms, tally charts, block diagrams and simple tables | interpret and present data using bar charts, pictograms and tables | interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs | complete, read and interpret information in tables, including timetables | interpret and construct pie charts and line graphs and use these to solve problems |
| | | | 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 | | | | |
| **SOLVING PROBLEMS** | | | | | | | |
| | | | | solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. | solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | solve comparison, sum and difference problems using information presented in a line graph | calculate and interpret the mean as an average |