Whitestone Infant School

Mathematics Policy

January 2021

NAMED PERSONS RESPONSIBLE AT WHITESTONE		
POSITION	**NAME**	**SIGNATURE**
HEADTEACHER	N.A. Green	
Mathematics Leader	K. Cusworth	
Mathematics Governor	C. Atkins	

This Policy was ratified on: _____

Date of next review: Spring 2024

This school is committed to safeguarding and promoting the welfare of children and young people and expects all staff and volunteers to share this commitment.

1. Aims

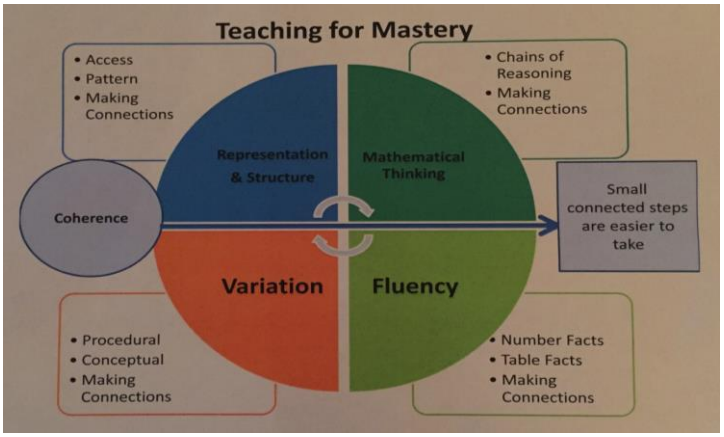
The purpose of this policy statement is to:

- Ensure a shared outlook and approach to the teaching of Mathematics.
- Aid consistency, coherence and continuity in the teaching of Mathematics throughout the school.
- Enable new members of staff to have an easy access to and an understanding of our approach to the teaching of Mathematics.
- Fulfill national statutory requirements.

1.1 The purpose of Mathematics

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

A **mastery approach** to the teaching of mathematics has been adopted, so we have high expectations of all our pupils. We endeavour to make the mathematics curriculum accessible to all pupils; moving them through the programme of study at broadly the same pace. All children need a deep understanding of the mathematics they are learning in order that future learning is built upon firm foundations. The 5 key principles of Mastery are considered in every Mathematics lesson and are adhered to by all staff:



At Whitestone we believe all children have the capability to become Masters at Maths. This thinking is called a 'growth mindset.' It allows children that they have an unlimited maths potential and that being good at maths is all about working hard and not about being 'smart.' We praise their effort and their thinking rather than their achievement e.g. "Well done for your thinking."
Below are the 7 principles of this growth mindset:

1. Everyone can learn maths to the highest level.
2. Mistakes are valuable.
3. Questions are really useful.
4. Maths is about creativity and making sense.
5. Maths is about connections and communicating.
6. Maths is about learning not performing.
7. Depth is more important than speed.

With this in mind we encourage our children to develop a greater depth of understanding rather than just working on the next topic. It is important for children to really grasp how to perform a procedure in many different ways and contexts rather than just working with larger numbers.

2.The Curriculum for Mathematics

Children in the Foundation stage will follow the Early Years Foundation Stage (EYFS) curriculum based on the 'Development Matters' framework 2012. This document is organised into 7 areas of learning and development, of which mathematics is a 'specific' area. When children have achieved the EYFS objectives, generally when entering into Year 1, they will follow the new National Curriculum 2013. This is the statutory curriculum for KS1 and KS2 which will be fully implemented. Year 1 teachers should build on work from the Foundation Stage to ensure a smooth transition between the key stages.

3. Planning for our Curriculum

Mathematics is a core subject in the National Curriculum. Curriculum planning in Mathematics is organised into three phases –long term, medium term and short term. The National curriculum and Development Matters details what we teach in the long term, for each year group (refer below for specific objectives.) The medium term and short term plans are adapted from this curriculum and give details of the main teaching objectives for each aspect of Mathematics teaching. These plans define what we teach, and ensure an appropriate balance and distribution of work covering all the objectives set, as well as making cross curricular links. The weekly short term planning, details the objectives and the differentiated activities, including support, where appropriate. The White Rose Maths Hub Long term plan is used as a basis for teaching Mathematics in blocks and supported with such resources as 'Maths No Problem' books, 'Power Maths' books and Mastery Assessment documents.

4. Teaching of the Curriculum

The school understands that there are a variety of teaching and learning styles used in Mathematics lessons. Our principal aim is to develop children's knowledge, skills and understanding in Mathematics. We do this through lessons that have a combination of whole-class and group-direct teaching and highlighted 'steps to success' for the pupils. During these lessons we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of practical resources and apparatus to support and extend their work. Wherever possible, we encourage the children to use and apply their learning in everyday situations to put their learning into context. Some examples of concrete, pictorial and abstract methods can be found in the calculation policy.

In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children. Sometimes we match the challenge of the task to the ability of the child, while at other times the children can choose the level of challenge. We use adults to support children and to ensure that work is matched to the needs of individuals.

An ability to calculate mentally lies at the heart of mathematics; therefore, it is important to emphasise mental methods from the early years. Written methods are also important at this stage; however, starting from the mental calculations will enhance imagery and the mathematical thought process. Written calculations are taught in accordance with the calculations policy.

Guidelines for Foundation stage Practitioners

As stated in the Statutory Framework for EYFS 'Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measures.' Practitioners must consider the individual needs, interests, and stage of development of each child in their care, and must use this information to plan a challenging and enjoyable experience for each child in all of the areas of learning and development. There are a number of resources used to teach the specific objectives including GLOW Maths Hub planning, Number blocks, 'Power Maths' books , 'No Problem' books and 'Making Numbers' books. The teaching of mathematics will be stripped back and focus on a specific number for a length of time discovering the different ways of representing it.

Guidelines for Key Stage 1.

The national curriculum for mathematics aims to ensure that all pupils:

- Become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **Reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

The programmes of study for mathematics are set out year-by-year. However, we are only required to teach the relevant programme of study by the end of the key stage one.

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 should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. This is known as 'going deeper.' Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Guidelines for the Whole School

Below are a number of agreed points made by all staff to ensure the principles of Maths Mastery are adhered to with the overall idea of 'Teach Less, Expect More'

- The use of whole class teaching is used to ensure children remain broadly at the same standard including the use of chorusing and STEM sentences
- There might be need for extra support or use of same day intervention
- Use PowerPoint to ensure consistency across year group and structure to lesson
- Use Concrete, Pictorial & Abstract in each lesson
- Use of randomly selected learning partners to develop reasoning as well as allowing children to work with different people
- Deeper Questioning is used by all staff e.g. 'Can you show me another way?'
- A number of different teaching approaches are used including show what is and what it isn't, making deliberate mistakes and allowing the pupils to be the teacher and lead the lesson
- Use of a brain break within lesson used to allow children to consolidate their learning
- Children are not set or grouped by ability in principle as all children are considered to be working at greater depth to ensure there is no ceiling placed on children
- Teacher coaching is used to help children choose their own level of Tricky, Taxing or Tough
- Rhymes are used to teach the number formation and should be used throughout school

5. Assessment for Mathematics

All staff have a duty to track the progress of pupils in all curriculum areas. This should be performed in a variety of ways to ensure adequate coverage. All assessments in Mathematics should be in accordance with the Assessment policy and might include photographs, observations or monitoring sheets.

At the end of the Foundation stage children will be assessed against the Early Learning Goals for Mathematics as either emerging, expected or exceeding the following statements:
Numbers: children count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.
Shape, space and measures: children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.

(Please note the Statutory Framework for the Early Years Foundation Stage is due to change in September 2021)

Teacher assessment judgements

Teachers should assess their pupils according to their school's assessment policy and use the statutory teacher assessment framework1 to make a judgement at the end of the key stage. This judgement should be based on day-to-day evidence from the classroom, which shows that a pupil has met the 'pupil can' statements in the framework.
Pupils will demonstrate their understanding by representing and explaining their thinking in different ways. This includes: use of resources, pictures, symbols and contexts to model and demonstrate understanding, accompanied by verbal explanation of thinking. We have given examples of what the pupils have said. There is no requirement to scribe this in their work.
Teachers should not produce evidence specifically for the purpose of local authority moderation. However, a sample of evidence from the pupil's classroom work must support how teachers reached their judgements.
Local authorities may find it useful to refer to the exemplification materials to support external moderation visits. The materials show what meeting the 'pupil can' statements might look like for each standard. However, moderators should not expect or require teachers to provide specific evidence similar to the examples in this document. Evidence will come from day-to-day work in the classroom and can be work taken from textbooks.
Evidence will come from day-to-day work in the classroom and should include work from different curriculum subjects, although a pupil's work in mathematics alone may produce the range and depth of evidence required. A pupil's answers to specific questions in the statutory end-of-key stage 1 mathematics test, or any other test, may provide evidence that pupils have met certain statements. Teachers must also refer to test outcomes as evidence to support their judgement overall.

Using exemplification materials

Exemplification materials provide examples of pupils' work to support teachers in making judgements against the statutory teacher assessment framework at the end of the key stage. If teachers are confident in their judgements, they do not need to refer to this document.
Exemplification materials illustrate only how 'pupil can' statements in the frameworks might be met. They do not dictate a particular method of teaching or evidence expected from the classroom, which will vary from school to school.
Photographs and transcript evidence have been used to demonstrate how a teacher may make judgements based on their day-to-day observations of how a pupil applies their knowledge to their work. There is no expectation that teachers will collect specific evidence, such as that shown in this exemplification material, to support their judgements, or for the purposes of local authority moderation.

Teachers are required to make judgements on the child's attainment every term. These judgements are formed from ongoing assessments, moderation meetings, interviews with the children and tests. Year 2 teachers are required to make end of key stage judgements that are statutory. The children complete SAT's test for mathematics and teachers make their judgements based on these and ongoing assessments made throughout the year.

6. Special Educational Needs

The school strives to enable all pupils to reach their full potential. Staff will plan for those needing extra support with Mathematics. Planning is linked to the I.E.P and cross-referenced to weekly plans. The pupils are supported by teachers, helpers and outside agencies. Support for children who meet this criterion should link to the Special Educational Needs policy.

Intervention Programmes

- Foundation stage use the 'Firm Foundations' Numicon intervention to support children in their understanding of numbers.
- Year one children use an adapted version of 'Closing the Gap' Numicon intervention to support children in their understanding of number and basic calculation

- Year Two have a structured intervention programme based on 1st class @ Number, which is designed to target children to reach the end of year expectations.
- A variety of other intervention programmes including same day intervention are used for each year group with targeted support.

More able pupils

The school encourages all children to extend their work where appropriate in order to reach their full potential and is always coaching children to 'go deeper' with their learning. The class teacher in conjunction with the Assessment co-ordinator and the year group co-ordinators makes identification of children with these needs. It is recognises that such needs may be in all or in one specific area of learning. I.E.P's will set targets for these children and work will be differentiated by task or outcome in order to provide challenges to match the children's ability and experience in accordance of the Most Able Children policy.

7. Equal opportunities

This Policy reflects the school policy on equal opportunities where all children, irrespective of race, disability, sex, religion or belief, gender reassignment or sexual orientation have an equal entitlement to receive a quality of education, covering the full extent of the curriculum.

8. Cross-Curricular Links

Teachers should use every relevant subject to develop pupils' mathematical fluency. Confidence in numeracy and other mathematical skills is a precondition of success across the national curriculum. Teachers should develop pupils' numeracy and mathematical reasoning in all subjects so that they understand and appreciate the importance of mathematics.

Computing and Online Safety

Teachers should use their judgement about when ICT tools should be used to enhance children's learning. Calculators should not be used as a substitute for good written and mental arithmetic. They should therefore only be introduced near the end of key stage 2 to support pupils' conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure.

Speaking and Listening

The national curriculum for mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. They must be assisted in making their thinking clear to themselves as well as others and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

SMSC

The teaching of Mathematics supports the spiritual, moral, social and cultural development of our children wherever possible. e.g.
Spiritual – sense of wonder through structure in patterns of shape and number
Moral – sense of right and wrong
Social – working together in mixed ability groupings
Cultural – emphasis of how mathematics is used across the world

9.Parental Involvement

A guide to mathematics has been produced for each year group clearly explaining to parents how mathematics is taught in school including objectives from the curriculum and the whole school calculation policy. At the start of each year a parent meeting is held to further inform parents about the teaching of mathematics in their year group.

Home learning

It is our school policy to provide parents opportunities to work with their children at home. Activities are sent home on a regular basis, as stated in the home learning policy, covering different objectives from

the curriculum throughout the year. These activities may be accompanied by a video recording of the Teacher teaching the Mathematical concept to support parents. There are also opportunities for children to participate in whole school home learning projects throughout the year e.g. maths sack.

Reporting to Parents

Parents are informed about their child's attainment and progress in mathematics through informal discussions, parent consultations and annual reports.

10. Monitoring and Evaluation Summary

The effectiveness of this policy will be based upon the following criteria.

- End of Year and Key Stage results
- Pupil progress meetings and termly progress tracker grids
- Classroom observations and work trawls by Headteacher and/or co-ordinator
- Policy and practice review
- L.I.P matrix policy review
- Named governor
- Reports to governors

Objectives from Development matters in the Early Years Foundation Stage (EYFS)		
Specific area: Mathematics		
	Aspect **Numbers**	**Aspect** **Shape, space and measure**
Birth – 11 months	1. Notices changes in number of objects/images or sounds in group of up to 3.	*Babies' early awareness of shape, space and measure grows from their sensory awareness and opportunities to observe objects and their movements, and to play and explore.* *See* Characteristics of Effective Learning - Playing and Exploring, *and* Physical Development.
8-20 months	2. Develops an awareness of number names through their enjoyment of action rhymes and songs that relate to their experience of numbers. 3. Has some understanding that things exist, even when out of sight.	1. Recognises big things and small things in meaningful contexts. 2. Gets to know and enjoy daily routines, such as getting-up time, mealtimes, nappy time, and bedtime
16-26 months	4. Knows that things exist, even when out of sight. 5. Beginning to organise and categorise objects, e.g. putting all the teddy bears together or teddies and cars in separate piles. 6. Says some counting words randomly.	3. Attempts, sometimes successfully, to fit shapes into spaces on inset boards or jigsaw puzzles. 4. Uses blocks to create their own simple structures and arrangements. 5. Enjoys filling and emptying containers. 6. Associates a sequence of actions with daily routines. 7. Beginning to understand that things might happen 'now'.
22-36 months	7. Selects a small number of objects from a group when asked, for example, *'please give me one', 'please give me two'.* 8. Recites some number names in sequence. 9. Creates and experiments with symbols and marks representing ideas of number. 10. Begins to make comparisons between quantities. 11. Uses some language of quantities, such as *'more'* and *'a lot'.* 12. Knows that a group of things changes in quantity when something is added or taken away.	8. Notices simple shapes and patterns in pictures. 9. Beginning to categorise objects according to properties such as shape or size. 10. Begins to use the language of size. 11. Understands some talk about immediate past and future, e.g. '*before*', '*later*' or '*soon*'. 12 Anticipates specific time-based events such as mealtimes or home time.
30-50 months	13. Uses some number names and number language spontaneously. 14. Uses some number names accurately in play. 15. Recites numbers in order to 10. 16. Knows that numbers identify how many objects are in a set. 17. Beginning to represent numbers using fingers, marks on paper or pictures. 18. Sometimes matches numeral and quantity correctly. 19. Shows curiosity about numbers by offering comments or asking questions. 20. Compares two groups of objects, saying when they have the same number. 21. Shows an interest in number problems. 22. Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same. 23. Shows an interest in numerals in the environment. 24. Shows an interest in representing numbers. 25. Realises not only objects, but anything can be counted, including steps, claps or jumps.	13.Shows an interest in shape and space by playing with shapes or making arrangements with objects. 14.Shows awareness of similarities of shapes in the environment. 15. Uses positional language. 16.Shows interest in shape by sustained construction activity or by talking about shapes or arrangements. 17. Shows interest in shapes in the environment. 18. Uses shapes appropriately for tasks. 19. Beginning to talk about the shapes of everyday objects,e.g. '*round*' and '*tall*'.
40–60+	26. Recognise some numerals of personal significance. 27. Recognises numerals 1 to 5. 28. Counts up to three or four objects by saying one number name for each item. 29. Counts actions or objects which cannot be moved. 30. Counts objects to 10, and beginning to count beyond 10. 31. Counts out up to six objects from a larger group. 32. Selects the correct numeral to represent 1 to 5, then 1 to 10 objects. 33. Counts an irregular arrangement of up to ten objects. 34. Estimates how many objects they can see and checks by counting them. 35. Uses the language of 'more' and 'fewer' to compare two sets of objects. 36.Finds the total number of items in two groups by counting all of them. 37. Says the number that is one more than a given number. 38. Finds one more or one less from a group of up to five objects, then ten objects. 39. In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting. 40. Records, using marks that they can interpret and explain. 41. Begins to identify own mathematical problems based on own interests and fascinations.	20. Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2D shapes, and mathematical terms to describe shapes. 21. Selects a particular named shape. 22. Can describe their relative position such as '*behind*' or '*next to*'. 23. Orders two or three items by length or height. 24.Orders two items by weight or capacity. 25. Uses familiar objects and common shapes to create and recreate patterns and build models. 26.Uses everyday language related to time. 27.Beginning to use everyday language related to money. 28.Orders and sequences familiar events. 29. Measures short periods of time in simple ways.
Early Learning Goal	**Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.**	**Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.**

Y1 Mathematics National Curriculum Objectives for the Year

Number – Number and Place Value

	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
	count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
	given a number, identify one more and one less
	identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
	read and write numbers from 1 to 20 in numerals and words.

Number – Addition and Subtraction

	read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
	represent and use number bonds and related subtraction facts within 20
	add and subtract one-digit and two-digit numbers to 20, including zero
	solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7=□–9

Number – Multiplication and Division

	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.

Number – Fractions

	recognise, find and name a half as one of two equal parts of an object, shape or quantity
	recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Measurement

	recognise and know the value of different denominations of coins and notes
	sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
	recognise and use language relating to dates, including days of the week, weeks, months and years
	tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
Compare, describe and solve practical problems for:	
	lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
	mass/weight [for example, heavy/light, heavier than, lighter than]
	capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]
	time [for example, quicker, slower, earlier, later]
Measure and begin to record the following:	
	lengths and heights
	mass/weight
	capacity and volume
	time (hours, minutes, seconds)

Geometry – Properties of Shapes

recognise and name common 2-D and 3-D shapes, including:	
	2-D shapes [for example, rectangles (including squares), circles and triangles]
	3-D shapes [for example, cuboids (including cubes), pyramids and spheres]

Geometry – Position and Direction

	describe position, direction and movement, including whole, half, quarter and three- quarter turns.

Y2 Mathematics National Curriculum Objectives for the Year

Number – Number and Place Value

count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
recognise the place value of each digit in a two-digit number (tens, ones)
identify, represent and estimate numbers using different representations, including the number line
compare and order numbers from 0 up to 100; use <, > and = signs
read and write numbers to at least 100 in numerals and in words
use place value and number facts to solve problems.

Number – Addition and Subtraction

recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
solve problems with addition and subtraction:
using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods
add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
a two-digit number and ones a two-digit number and tens two two-digit numbers adding three one-digit numbers

Number – Multiplication and Division

recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs
show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.

Number – Fractions

recognise, find, name and write fractions 1/3, ¼, 2/4, and ¾ of a length, shape, set of objects or quantity
write simple fractions for example, ½ of 6 = 3 and recognise the equivalence of 2/4and 1/2

Measurement

choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
compare and order lengths, mass, volume/capacity and record the results using >, < and =
recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
find different combinations of coins that equal the same amounts of money
solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change
compare and sequence intervals of time
tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
know the number of minutes in an hour and the number of hours in a day.

Geometry – Properties of Shapes

identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]
compare and sort common 2-D and 3-D shapes and everyday objects.

Geometry – Position and Direction

order and arrange combinations of mathematical objects in patterns and sequences
use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).

Statistics

interpret and construct simple pictograms, tally charts, block diagrams and simple tables
ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
ask and answer questions about totalling and comparing categorical data.

Teacher assessment framework at the end of key stage 1 - mathematics

Working towards the expected standard

The pupil can:

- read and write numbers in numerals up to 100
- partition a two-digit number into tens and ones to demonstrate an understanding of place value, though they may use structured resources[1] to support them
- add and subtract two-digit numbers and ones, and two-digit numbers and tens, where no regrouping is required, explaining their method verbally, in pictures or using apparatus (e.g. 23 + 5; 46 + 20; 16 – 5; 88 – 30)
- recall at least four of the six[2] number bonds for 10 and reason about associated facts (e.g. 6 + 4 = 10, therefore 4 + 6 = 10 and 10 – 6 = 4)
- count in twos, fives and tens from 0 and use this to solve problems
- know the value of different coins
- name some common 2-D and 3-D shapes from a group of shapes or from pictures of the shapes and describe some of their properties (e.g. triangles, rectangles, squares, circles, cuboids, cubes, pyramids and spheres).

[1] For example, base 10 apparatus.

[2] Key number bonds to 10 are: 0+10, 1 + 9, 2 + 8, 3 + 7, 4 + 6, 5 + 5.

Working at the expected standard

The pupil can:

- read scales* in divisions of ones, twos, fives and tens
- partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus
- add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 – 17)
- recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10 then 17 + 3 = 20; if 7 – 3 = 4 then 17 – 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14)
- recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary
- identify 1—4, 1—3, 1—2, 2—4, 3—4, of a number or shape, and know that all parts must be equal parts of the whole
- use different coins to make the same amount
- read the time on a clock to the nearest 15 minutes
- name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.

* The scale can be in the form of a number line or a practical measuring situation.

Working at greater depth within the expected standard

The pupil can:

- read scales* where not all numbers on the scale are given and estimate points in between
- recall and use multiplication and division facts for 2, 5 and 10 and make deductions outside known multiplication facts
- use reasoning about numbers and relationships to solve more complex problems and explain their thinking (e.g. 29 + 17 = 15 + 4 + ☐ ; 'together Jack and Sam have £14. Jack has £2 more than Sam. How much money does Sam have?' etc)
- solve unfamiliar word problems that involve more than one step (e.g. 'which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?')
- read the time on a clock to the nearest 5 minutes
- describe similarities and differences of 2-D and 3-D shapes, using their properties (e.g. that two different 2-D shapes both have only one line of symmetry; that a cube and a cuboid have the same number of edges, faces and vertices, but different dimensions).

* The scale can be in the form of a number line or a practical measuring situation.