Manor Hall Academy

MATHEMATICS POLICY

CICELY HAUGHTON SCHOOL

Building Relationships

Celebrating Success

Promoting Change

CICELY HAUGHTON SCHOOL

MATHEMATICS POLICY STATEMENT

AIMS

The mathematics teaching at Cicely Haughton School is geared towards enabling each pupil to develop within their capabilities; not only the mathematics skills and understanding required for later life, but also an enthusiasm and fascination about maths itself.

We aim to increase pupil confidence in maths so they are able to express themselves and their ideas using the language of maths with assurance.

We are continually aiming to raise the standards of achievement of the pupils in Cicely Haughton School.

THE NATIONAL CURRICULUM

The National Curriculum for Mathematics describes what must be taught in each Key Stage. Cicely Haughton School follows the National Curriculum Framework, which provides detailed guidance for the implementation of the curriculum and ensures continuity and progression in the teaching of mathematics.

In Early Years, the curriculum is guided by the Reception Learning Objectives in the National Curriculum Framework.

PLANNING

Strategies for ensuring progress and continuity

PLANNING IN MATHEMATICS is a process in which all teachers are involved, wherein

- The foundation for curricular planning is the Whole School Development Plan, developed through a process of collaboration between staff, and approved by Governors.

Planning is undertaken at three levels:

Long term planning is based on the yearly teaching programmes set out in the Power Maths Scheme, in line with national curriculum objectives.

Medium term planning is based on the Power Maths Scheme and gives a guide to the topics that will be covered during each half term.

Short term planning is carried out weekly. Day to day amendments are carried out and planning is placed on to the Staff Share area for reference.

The medium and short term planning is collected and monitored by the maths subject leader and senior management team. Written and verbal feedback is given.

CROSS-CURRICULAR LINKS

Mathematics is taught mainly as a separate subject but every effort is made to link maths with other areas of curriculum. We try and identify the mathematical possibilities across the curriculum at the planning stage. We also draw children's attention to the links between maths and other curricular work so children see that maths is not an isolated subject.

In the Early Years, these links are more evident because of the less formal timetable.

TEACHING METHODS AND APPROACHES

THE MATHEMATICS CURRICULUM IS ORGANISED on a subject basis although topic work will often also include mathematical activities.

At Cicely Haughton, children are placed into personalised learning groups designed to support, stretch and challenge children in maths. These groups are based on the learning age that children are able to access, based on assessments from the national curriculum, rather than their actual age.

We follow the Power Maths Scheme of work which has been designed to support and challenge all pupils, and is built on the belief that EVERYONE can learn maths successfully. The philosophy behind Power Maths is that being successful in maths is not just about rote-learning procedures and methods, but is instead about problem solving, thinking and discussing. Children are encouraged to gain deeper understanding of concepts and gain a growth mindset approach to problem solving. A typical Power Maths lesson is structured in the following way:

- **Discover** – each lesson begins with a problem to solve, often a real-life example, sometimes a puzzle or a game. These are engaging and fun, and designed to get all children thinking.
- **Share** – the class shares their ideas and compares different ways to solve the problem, explaining their reasoning with hands-on resources and drawings to make their ideas clear. Children are able to develop their understanding of the concept with input from the teacher.
- **Think together** – the next part of the lesson is a journey through the concept, digging deeper and deeper so that each child builds on secure foundations while being challenged to apply their understanding in different ways and with increasing independence.
- **Practice** – now children practice individually or in small groups, rehearsing and developing their skills to build fluency, understanding of the concept and confidence.
- **Reflect** – finally, children are prompted to reflect on and record their learning from each session and show how they have grasped the concept explored in the lesson.

Whilst Power Maths is our main route of teaching, it may be that other schemes of work may be used to support intervention lessons, in which basic concepts are practiced in order to progress to the mastery activities. There may also need to be lessons that address misconceptions and gaps in learning due to the nature of the school and progress of children in previous schools, or owing to the disruption caused by the COVID-19 pandemic. In which case, a typical lesson may be structured in the following way:

- STARTER ACTIVITY (about 5 – 10 minutes). Whole-class work to rehearse, sharpen and develop mental and oral skills.

- MAIN TEACHING ACTIVITY (about 30 – 45 minutes). Teaching input and pupil activities. Work as a whole class, in groups, in pairs or as individuals. A pupil whose difficulties are severe may need to be supported with an individual programme in the main part of the lesson.

- A PLENARY to round off the lesson (about 5- 10 minutes). Work with the whole class to sort out misconceptions and identify progress, to summarise key facts and ideas and what to remember, to make links to other work and discuss the next steps, and to set work to do at home.

Mathematics is taught by class teachers and Teaching Assistants, who have received the relevant training in Maths National Curriculum and have received CPD on the new Power Maths scheme of work. Support is given by the Mathematics subject leader.

The teaching of maths at Cicely Haughton provides opportunities for:

- Group work
- Paired work
- Whole class teaching
- Individual work

At Cicely Haughton School we recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are introduced.

We endeavour to set work that is challenging, motivating and encourages the pupils to talk about what they have been doing. Children are continually praised for their 'journey to get there' with each class rewarding a 'Maths Star' or 'Power Maths Champion' of the week.

DISPLAY

We recognise the important role display has in the teaching and learning of mathematics by having maths work displayed in the school. Every class has a mathematics board, where possible in the main teaching area, which contains work pertinent to current topics/whole school targets, mathematics vocabulary and display materials that provide a visual support for the children's mental processes. Each class has the relevant Power Maths vocabulary on display in the room to provide continuity throughout the school.

Children's efforts are acknowledged with the use of praise, reward stickers and positive written comments on their behaviour sheets.

ASSESSMENT AND RECORD KEEPING

Assessment is used as a tool to inform planning.

Formative Assessment

(See Assessment Policy and Marking Policy)

The purpose is to:

- check that pupils have grasped the main teaching points
- clarify any misconceptions
- establish whether pupils are ready to move on
- check that pupils are remembering number facts and can use mental calculation strategies
- give information which will help with any necessary adjustments to daily planning

Formative Assessment targets will be closely matched to short-term objectives. The assessments will be made through daily observations, questioning and monitoring of pupils' responses, informal testing and homework. Children complete self-assessment based on their own thoughts on the objective. This is done in ways appropriate to the needs of each class group.

For each topic in Power Maths, children complete an end of unit test individually. This is used to gain an idea of children's level of understanding within that topic and informs next steps in planning, including setting 'strengthen' or 'deepen' activities.

Summative Assessment (medium term)

The purpose is to:

- Review and record the progress pupils are making over time in relation to the key objectives.
- Identify pupils' progress against specific individual targets.
- Help to plan work over the next half-term.
- Provide information to feed into end of year assessments.

Long-term Assessments

- Towards the end of the school year, pupils' progress and attainment is assessed and reviewed against school and National targets.
- Children are baseline assessed on entry.

- A teacher assessment is also made to sum up pupils' attainment. For Y2 and Y6 pupils the assessment is made against the National Curriculum Attainment Target Level Descriptors.

- A bank of evidence of pupils' work helps inform teacher assessment.

- Statutory guidelines regarding Assessment and Reporting requirements are closely adhered to.

Records of Progress in Mathematics kept for each child contain:

- An annual record of progress written into each child's Review Statement and Annual Report.

- The 'EAZ mag' format for identifying each zone from P Steps to Zone 6 is used for each child.

- Children undertake NFER testing to gauge both current ability and progress throughout the year. These can be used to identify gaps in learning and can inform personalised learning groups. NFER tests are done in Autumn, Spring and Summer Terms for Year 3, 4, 5 and in Spring and Summer for Year 1. Years 2 and 6 complete NFER tests in the Autumn and Spring Terms, with End of Key Stage 1 and Key Stage 2 results (SATS) providing the basis for Summer data.

Reporting

- Reporting is done annually through a combined Review/Annual Academic Report.

Reporting in Mathematics will focus on each pupil's:

- attitude to Mathematics

- competence in basic skills

- ability to apply mathematical knowledge to new situations

Statutory guidelines are followed regarding the reporting of SATs results at the end on Y2 and Y6 and future establishments are informed of progress and academic ability. Parents also receive half termly letters detailing the topics covered for their child.

RESOURCES

Resources for the delivery of the maths curriculum are stored centrally. Everyday basic equipment is kept in classrooms. Additional equipment and topic-specific items are stored centrally and referenced on Teachers plans if required.

Cicely Haughton School uses both online and paper resources from the Power Maths Scheme of work. Additional online resources required can be accessed through a number of resources purchased by Cicely Haughton School and physical resources from the central storage.

Materials are constantly updated, as new and relevant items become available. The maths post holder orders new resources after consultation with the staff.

EQUAL OPPORTUNITIES

As staff we endeavour to maintain an awareness of and to provide for equal opportunities for all our pupils in mathematics. We aim to take into account cultural background, gender and Special Needs, both in our teaching attitudes and in the published materials we use with our pupils.

HOMEWORK

Children are given mathematics homework once a week. The amount of homework is set between 15 and 30 minutes. Not all homework is written work, which needs marking. We encourage teachers to set work, which makes use of the home context or using online resources.

Our Intentions

Pupils leave with:

- with improved positive physical and mental health
- with life skills enabling them to access the world around them
- as enriched individuals
- with improved self-regulation
- with improved independence
- as responsible and respectful citizens

Intent	
How is our school's **intent** represented throughout the curriculum for this subject?	• with life skills enabling them to access the world around them Maths is a crucial area of life skills from time to calculation and money a basic mastery of maths is a key life skill. Curriculum address these areas and has key units that focus directly on life skill areas. • with improved positive physical and mental health Recognition of small steps of achievement as these are easily visible both at class and whole school level. Positive feelings from achievement and progress. Visual positive affirmation black or white correct or incorrect. Self-marking. Has direct link to life skills and can be used at home. Seeing and experiencing success has a positive effect on confidence and mental health. • as enriched individuals By experiencing achievement in overcoming small steps, self-confidence will increase, as will resilience, helping children to face challenges in the outside world. • with improved self-regulation Power Maths employs a Growth mindset approach to Maths learning, it encourages mastery and provides a concrete-pictorial-abstract approach to explore Maths, this will provide deeper understanding of concepts, which will lead to increased

self-confidence with Maths. This Growth Mindset approach, supported by characters, will help develop a curiosity and resilience in Maths.

Maths lessons will be taught with the same Ethos as all lessons at Cicely Haughton, focussing on positive praise and rewarding resilience and self-regulation, that 'Mistakes are proof that you are trying'.

children? Which aspects of the regular classroom environment seem to foster the acquisition of such self-regulatory skills and positive beliefs?

With respect to the first question, research shows that high-achievers in mathematics manage their study time better, set higher specific and proximal goals, monitor their learning and problem solving more frequently and accurately, set higher standards for satisfaction, are more self-efficacious, and persist despite hindrances. Moreover, they are self-motivated, highly planful in their approach to a task, sensitive to environmental factors that affect their learning, and willing to seek help from a teacher or peers (Boekaerts, 1999; Zimmerman & Risemberg, 1997). The importance of self-regulation, especially of reflective activities, for mathematics learning has been stressed by Nelissen (1987; see also De Corte et al., 2000; Schoenfeld, 1992). During learning the student has to make continuously decisions about the next steps to be taken; for example, look back for a formula or a theorem, reconsider a problem situation from a different perspective or restructuring it, make an estimation of the expected outcome. Moreover, it is necessary to monitor learning processes through intermediate evaluations of the progress made in acquiring, understanding, and applying new knowledge and skills, as well as of one's motivation and concentration on the learning task.

Handbook of self-regulation of learning and performance.
B Zimmerman D.Schunk

- with improved independence

Children will be encouraged to take part in tasks and not to be afraid to make mistakes. The lessons will be reward based and pitched at the correct level to allow progress and growth and this will be celebrated. At Cicely we promote the 'journey to get there' just as much as the final result. Maths lessons will follow the ethos of the school and give children the opportunity to take part in lessons from a level footing, with an opportunity to thrive, focussing on what they can do and celebrating independence.

Children will be given ownership of their own practice books; these will be kept throughout the school year to give children a chance to feel pride within their work. The lesson structure (discover, share, think together, practice, reflect) allows children to be eased in to independent work, from whole class, to small groups, to independent.

- as responsible and respectful citizens

	Growth mindset approach and increased resilience gained from Mathematical challenge will help prepare children for other perceived challenges, gaining an understanding of overcoming challenges, as well as grasping concepts to prepare for the real world, including Money and Time.

Implementation	
How is the subject timetabled? How do we know this happens?	Maths is delivered daily for 45 minute to 1 hour lessons. This is on all Teacher's timetables, stating time that lessons are taught. Informal chats and learning walks, as well as talks with children, ensure that lessons are being taught and taught in a sequence. Work in books provides further evidence of daily lessons, these will be routinely checked.
How is the subject mapped out? How are we ensuring coverage?	The subject of Maths at Cicely Haughton School helps children's progress by encouraging a 'mastery' approach to Maths. This will be done using a scheme of work called Power Maths. The philosophy behind *Power Maths* is that being successful in maths is not just about rote-learning procedures and methods, but is instead about problem solving, thinking and discussing. This will help children develop a deeper understanding. Children are following the scheme in the recommended order. Each child has their own 'practice book' to record their work and ALL children working in the same 'Zone' will follow the same pattern of progression, mapped against National Curriculum learning objectives and Ready to progress criteria. Coverage is ensured by Learning walks, book trawls and by evidence of coverage in children's practice books. Coverage also shows in Analysis of NFER results. Children are now also working in 'personalised learning groups' (a change from previous years) to allow for teaching within their 'zone' of learning rather than age and avoiding mixed year ability where possible, making teaching of Power Maths more fluent. Long and Medium Term planning of staff is checked, with all staff now using the same template, this is routinely checked to ensure that staff are delivering lessons in the correct order according to the scheme.
Can we see progression across the school within pupils' books?	Practice books (Power Maths), Maths books and times table folders all show progression in the order stated on long term plans, or based on children's ability.

How is assessment used to impact learning? How do we know it is accurate?	Each child has received baseline tests from the recently purchased NFER tests. NFER have 70 years of experience working with schools and results from tests come based on standardised scores from children around the country. These give an accurate indication of where new children are at and the progress that current children made in a disrupted year last year. They have helped Teachers to give children an accurate baseline Maths score, as well as allowing to set realistic expected and aspirational targets for the year. Children will complete assessments independently and in test conditions, replicating SATS. The Year 1, 3, 4 and 5 children undertake NFER testing in Autumn Spring and Summer to provide evidence of progress throughout the school year, compared to the standardised sample. Years 2 and 6 children undertake Autumn and Spring testing, with Summer assessment being provided in the form of SATS results. As part of the Power Maths scheme children undertake End of unit assessments to determine their progress through the chosen units, again this will be done independently in test conditions. This will inform Teachers of progress and inform future planning, it allows Teachers to determine children's assessments using EAZ mag, with children assessed on learning objectives as either: Emerging Emerging + Developing Developing + Secure Secure +
How confident are staff with the subject? How do we know?	Staff have completed 2 training sessions regarding Power Maths and have been teaching in personalised learning groups since January. Informal chats suggest confidence delivering power maths is increasing and Teacher questionnaire results suggest this with 100% agreeing with the statement 'I feel confident teaching Maths' (57% strongly agree, 43% agree) and 100% agree with the statement 'I know how to support, stretch and challenge within my group' (57% strongly agree, 43% agree). This will not be something that is taken for granted however, as a target for September will be to look for further CPD in Maths mastery curriculums, especially with the change to Power Maths books (White Rose Edition).

Impact	
Do all groups have equal access to the curriculum? How do we know?	Yes- the introduction of personalised learning groups allows children to work with other children of similar academic ability, rather than just age. The unique nature of Cicely Haughton School means that children from different year groups may be placed together in the same personalised group. This allows children to confidently work with others of similar ability to them, increasing confidence in their work, but also allowing extra support to stretch and challenge. NFER results ensure that children are correctly placed into suitable results. On the whole children have been happy with the change to personalised learning groups, with 97% (rounded) giving a positive score (☺ , ☺ ☺, or ☺ ☺ ☺) for the question 'I like working in different groups for Maths', with 63% giving the maximum score of ☺ ☺ ☺. Teacher questionnaire results are also positive, with 100% agreeing with the statement 'Personalised learning groups help to deliver Power Maths lessons' (57% strongly agree, 43% agree) and 100% agreeing with the statement 'Personalised learning groups help to support children's progress' (57% strongly agree, 43% agree)
How does varying staff confidence impact on the curriculum?	All staff have undertaken the training for Power Maths over two days (Teachers and Teaching Assistants) and are becoming increasingly confident in delivering the changed Maths curriculum at Cicely Haughton. The change to Power Maths and personalised learning groups has required a number of changes throughout the year and staff have adjusted well. Teacher questionnaire results show that 100% agree with the statement 'I feel confident teaching Maths' (57% strongly agree, 43% agree) and 100% agree with the statement 'I know how to support, stretch and challenge within my group' (57% strongly agree, 43% agree). It is important to continue to strive for more however and move with the curriculum. Power Maths books will be changing next year to align with White Rose Maths, this is a change that will be supported to continue to help staff confidence. As part of the action plan for September 2022 it will also be important to source further CPD as 71% of staff agreed with the statement 'I would like further CPD'.

Things to celebrate

New Scheme Purchased and all children beginning to use relevant scheme.

Large purchase of resources to update methods of teaching.

NFER testing has allowed children to be given an accurate baseline- allowing staff to have a clear indication of where new children are at, and to assess the impact of COVID-19 on progress of new children.

NFER results allow appropriate challenge for ALL children

Staff knowledge of the curriculum.

Positive attitude to new scheme and use of resources from both Teachers and TAs.

Children identified and moved to other groups to ensure challenge and appropriate access.

Power Maths scheme of work fully implemented in to all classrooms for the whole school of year.

Power Maths displays in all classes.

Power Maths Champion in ALL groups in ALL assemblies.

NFER testing in Spring and Summer for years 1, 3, 4, 5 and Spring for Years 2 and 6.

Assess the impact of Power Maths with progress scores from NFER testing, staff and pupil questionnaires.

Staff completed second Power Maths training session 3.12.2021.

Improvements in progress scores of children according to NFER data.

Maths Progression Map

Place Value

COUNTING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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
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	
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					
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 *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 10 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers)
IDENTIFYING, REPRESENTING AND ESTIMATING NUMBERS					
identify and represent numbers using objects and pictorial representations including the number line	identify, represent and estimate numbers using different representations, including the number line	identify, represent and estimate numbers using different representations	identify, represent and estimate numbers using different representations		

Addition and subtraction

NUMBER BONDS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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					
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: * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers	add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens * 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					
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.

Multiplication and Division

MULTIPLICATION & DIVISION FACTS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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)	
	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including	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		

	recognising odd and even numbers				
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					
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	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

		(appears also in Mental Methods)			
				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					
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.	identify common factors, common multiples and prime numbers
				know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	*use common factors to simplify fractions; use common multiples to express fractions in the same denomination* (copied from Fractions)
				establish whether a number up to 100 is prime and recall prime numbers up to 19	

				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* (copied from Measures)

ORDER OF OPERATIONS					
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					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
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 (Including Decimals and Percentages)

COUNTING IN FRACTIONAL STEPS					
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					
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					
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 = $^{71}/_{100}$) 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					
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 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. $^{2}/_{5} + {}^{4}/_{5} = {}^{6}/_{5} = 1\,{}^{1}/_{5}$)	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
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					
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					
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	solve problems involving numbers up to three decimal places	

			to divide quantities, including non-unit fractions where the answer is a whole number		
			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 and Proportion

COUNTING IN FRACTIONAL STEPS					
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					
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	

		recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.		(appears also in Equivalence)	
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					
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 = $^{71}/_{100}$) 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					
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 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. $^{2}/_{5} + {}^{4}/_{5} = {}^{6}/_{5} = 1\,{}^{1}/_{5}$)	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
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					
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					
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	solve problems involving numbers up to three decimal places	

			to divide quantities, including non-unit fractions where the answer is a whole number		
			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.	

Algebra

EQUATIONS					
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) *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					
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. (Copied from NSG measurement)		use simple formulae *recognise when it is possible to use **formulae** for area and volume of shapes* (copied from Measurement)
SEQUENCES					
sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening (copied from Measurement)	*compare and sequence intervals of time* (copied from Measurement) *order and arrange combinations of mathematical objects in patterns* (copied from Geometry: position and direction)				generate and describe linear number sequences

Measurement

COMPARING AND ESTIMATING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]	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 (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)	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

* mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later]				estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)	units such as mm^3 and km^3.
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					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
measure and begin to record the following: * **lengths and heights** * **mass/weight** * **capacity and volume** * **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** (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 (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					
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 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	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 *recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})* (copied from Multiplication and Division)	calculate the area of parallelograms and triangles 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]. recognise when it is possible to use formulae for area and volume of shapes

TELLING THE TIME					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
tell the time to the hour and half past the hour and	tell and write the time to five minutes, including quarter past/to the hour	tell and write the time from an analogue clock, including using Roman	read, write and convert time between analogue		

draw the hands on a clock face to show these times.	and draw the hands on a clock face to show these times.	numerals from I to XII, and 12-hour and 24-hour clocks	and digital 12 and 24-hour clocks (appears also in Converting)		
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					
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. (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 (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 (appears also in Measuring and Calculating)
			solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (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

Geometry (Properties of shape)

IDENTIFYING SHAPES AND THIER PROPERTIES					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 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		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)
	identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces				illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
	identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]				
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 (°)	draw 2-D shapes using given dimensions and angles
					recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties)
COMPARING AND CLASSIFYING					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

	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	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
				distinguish between regular and irregular polygons based on reasoning about equal sides and angles	
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: * angles at a point and one whole turn (total 360°) * angles at a point on a straight line and ½ a turn (total 180°) * 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			

Geometry (Position, direction and movement)

POSITION, DIRECTION AND MOVEMENT					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6

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 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) 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					
	order and arrange combinations of mathematical objects in patterns and sequences				

Statistics

INTERPRETING, CONSTRUCTING AND PRESENTING DATA					
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