Mathematics



Intent

At the centre of our approach to the teaching of mathematics at Southway Junior is the unwavering belief that all children have the potential to succeed. We believe that all children need a deep understanding of the mathematics they are learning and use small steps to build all children into great mathematicians.

Our intent for the maths curriculum is:

- To ensure all pupils are fluent mathematicians, who are confident and resilient in the fundamentals of mathematics through varied, frequent and independent learning. Using a maths mastery approach and small step teaching, with cohesion throughout the school, pupils use mathematical concepts, facts and procedures fluently, flexibly and appropriately
- To promote mathematical reasoning by following a line of enquiry, conjecturing relationships and making generalisations with **respect** in their mathematical learning, and by developing an argument, justification of proof using high quality mathematical vocabulary through inside-out teaching
- Have sufficient breadth of knowledge and understanding to solve problems by applying their mathematics to a variety of questions with increasing sophistication and persevering in seeking solutions, whilst demonstrating creativity, imagination and kindness
- To encourage a sense of enjoyment and curiosity about maths, through ambitious, interactive lessons and activities, showing teamwork
- To make sure that children leave Southway as confident, creative and inquiring mathematicians



Implementation

Southway Junior School strives to reach the highest standards, using the mastery approach, which involves breaking down larger, complex learning goals into smaller, more granular steps, where every child has the same starting point.

We take a starting point of a concrete, pictorial and then abstract approach (CPA) to maths lessons, where firstly the children are introduced to a new concept through concrete, physical resources. Children then move on to pictorial, visual representations to further consolidate their understanding. Finally, the children will be introduced to abstract ideas on paper, where they can apply their knowledge through a range of fluency, reasoning and problem solving activities. A CPA approach, along with valuing manipulatives within lessons and building in variation within our teaching allows a mastery maths approach to be taught across the school.

Using a mastery approach, this allows all pupils to develop deep knowledge, understanding and confidence using small steps and allows them to develop their **resilience**, **teamwork**, **independence** and **respect** within the subject.



Impact

We believe that every child has the potential to become a confident and successful mathematician at Southway Junior School. During their time here, the children will develop their fluency and learn how to reason and problem solve effectively and efficiently, using **teamwork**. Using these skills to solve real life problems will help them succeed with mathematical challenges in the future and build upon their **resilience**. At Southway Junior School, we will help the children develop the tools they need, so that they are ready for the challenges of secondary school and beyond, facing any challenges with respect and kindness towards others.



Southway's Values









Curriculum Overview

					2	(A))														
Mathematics Programmes of Study							1														
I can solve number problems and practical problems.	I can solve missing number problems for + and	I can solve missing number problems using multiplication and division.	I can solve problems that involve fraction	15. events of events.	I can identify horizon																
I can read and write numbers to at least 1000 in numerals and words.	I can solve word problems for + and	I can solve problems using multiplication and division.	I can compare and ord fractions with the sam denominator.		a. I can identify wheths	en lo I can use simple so (e.g. 2, 5, 10 units) (m) in pictograms	ales per														
I can ide ntify, represent and estimate numbers in different contexts.	I can estimate the answer to a calculation and use inverse operations to check answers.	I can use efficient within methods to multiply a 2 digit and 3 digit number.	I can add and subbact fractions with the same denominator within 1 who	the Roman mumerals / re Too xill.	angles are greater th loss than a right angle	an or bar charts.		ogrammes of Stud		4	(A)										
I can compare and order number up to 1000.	I can subtract numbers with up to 3 digits using an efficient witten method.	I can use mental strategies to multiply a 2 digit number by a 1 digit.	I can recognise and sho	change d.	I can solve mental calculations with increas-	I can solve problems involving multiplying	I can solve simplemeasure and money problems involving fractions and decimals to two decimal places.	I can solve problems involving converting	I can plot specified points and draw sides to complete		a second	2									
I can recognise the place value of each digit in a 3 digit number.	I can add numbers with up to 3 digits using an efficient written method.	I can calculate mathematical statements for x and 1 facts that I know.	I can recognise and us fractions as numbers: 1/4 + 3/4 + 1	can solve number and practical problems using place value.	I can solve subtraction two-step problems	I can multiply three digit numbers by a one-digit	I can compare numbers with the same number of decimal places.	from hours to minutes; minutes to seconds; years to months and weeks to days.	a given polygon.	I can use a range of scales v interpreting and presenting data	I can b ing affe	e flexible in choos- ective methods to r questions.									
I can find 10 or 100 more or less than a given number.	I can add and subtract numbers mentally: '3 digit number and ones.'	I can recall and use x and + facts for the 8 times tables.	I can recognise, find a write fractions for a se of objects.		deciding which operations and methods to use and why.	I can multiply two digit numbers by a one-digit	I can round decimals with 1 decimal place to the neares t whole number.	I can read, write and convert time between analogue and digital 12 and 24-hour clocks.	I can describe position on a 2-0 grid as co-ordinates in the first quadrant.	I can solve 'differe problems using in presented in bar o pictograms, tabl en simple line graphs	formation harts, I can u and explain	inderstand and in the midhods t e and eroduce									
I can count from 0 in multiples of 50 and 100.	I can add and subtract numbers mentally : '3 digit number and tens'.	I can recall and use x and + facts for the 4 times tables.	I know that tenths aris from dividing an object into 10 equal parts.	+can or der and compare	I can solve addition two- step problems de ciding which operations and methods to use and why.	I can recognise and use factor pairs in mental calculations.	dividing anumber by 30 and 100 and identify the the value of the digits in the answer.	I can estimate, compare and calculate different measures, including	I can complete a sim symmetric figure of respect to a specific symmetry.		actor of			grammes of Study	5	T					
I can count from 0 in multiples of 4 and 8.	I can add and subtract numbers mentally : '3 digit number and hundreds.'	I can recall and use x and + facts for the 3 times tables.	I can count up and down in tenths.	i can recognise the place	I can use inverse s to che dk answers to calcula tions.	I can multiply togeth er three numbers.	decimal equival ents to 1/4, 1/2, 3/4. I can recognise and write decimal equival ents of an y	money in pounds and pence.	I can ide ntify follten in Ro symmetry in 2 ^{imerals} presented in difficult orientations, can read Ro	man I car sto toxt oper	solve addition mul p problems in con s, deciding which ations and method	fractions and simple rates.	I can write percentages as a fraction. I can recognize the K-symbol and understand what it means	decimal notation. regular	tingaith between ed imagelie polygons. Go and use the	- Con	2				
Number, place value and rounding	Addition and Subtraction	Multiplication and Division	Fractions	4 digit number. I can count backwards through zero to include	I can estimate to check answers to calculations.	I can use place value, known and derived facts to divide mentally.	number of 10ths or 100ths. I can add and subtract fractions with the same denominato r.	rectili near sha pes by counting.	I can compare a angles up to this solve n angles by sizeroble ms an	umber I car	se and why. Is solve subtraction It step problems in	square numbes and cub e numbes.	I can solve problems numbers up to 3 deamal places. I can mad, with, order and comparementions with up to 3	I can solve problems propert involving converting between units of time.	ios of a mictangle to nilated facts. av shap os using Inform	ing off oc	feelble in choos- tive methods to prections.				
				I can find 100 more or less than a given number.	I can subtract numbers with up to 4 digits using efficient written methods.	I can use place value, known and derived facts to multiply mentally.	I can identify, nam e and write equivalent fractions of a given fraction.	calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	I can ide ntify action round a obtuse a ngles _{tran} round a us to 1,0000. 1 can compare trijdoo and 1	ny number 00 to the 00, 1000, I can	exts, decidiing whic rations and method se and why. nuse rounding to ck answers to	the involving decimals by 10, 300 and 3000. I can divide numbers up to 4 digits by a 1 digit number using an efficient written	decimal places. I can round decimals with 2 decimal places to the nearest whole number and to one decimal places.	I can recognise and extinuity volum v and capacity. I can extinuity from find pairs of numbers imogular shap. I instance, involving two	I can use estimation to thest	T can solve setio and	Mathematics Pro	ogrammes of Stud		5 (
				I can count in multiples of 6, 7, 9, 25 and 1000.	I can add numbers with up to 4 digits using efficient written methods.	I can recall x and + facts for multiplication tables up to 12 x 12.	100ths and recognise that 100ths arise whon dividing an object by a 100 and dividing 10ths by 10.	different units of measure (e.g. Kilometre to metre; hour to minute).	geometric shape. quadrilatends and based on their can use nog and sizes. numbers in c can count for	a tive context and rwards and usin	alations. subtract mentally g increasingly large	I can multiply numbers up to 4 digits by a one or 2 digit number.	I can recognise and use 2000ds and relate them to 200bs, 100bs and decimal opuriations. I can read and write docimal	I can calculate the area of social gas erate and describe sectoryles. Timar number sequences.	I can use estimation to dead answers to calculations.	proportion problems involving unaqual sharing and grouping.	equival ences b etw even simple fractions, ducins als and porc on tages.	and compare the volume of cubes and cuboids using standard units, including contimetro cubed and cubic metres.	I can draw and translate simple shapes and reflect the m in the axes.		
				Number, place val- ue and rounding	Addition and Subtraction	Multiplication and Division	Fractions and Deci- mals	Measures	Geom Rd noga thro through 0.	numbers I car Incre	add mentally using easingly large	g I can ossbilish whether a number up to 100 k prime and noall prime numbers up to 15	numbers as fractions. I can multiplyproper fractions and mixed mumbersby whole mumbers, supported by mutanials and diagrams.	I can monormain use simple formulae the perimet Sepress of in words, sectionae bho continues and compress missing number is can sepress missing number	I can solve addition and subtraction multi-step problems.	proportion problems involving the relative sizes of two quantities, including similarity.	I can solve problems involving the calculation of percentages of whole numbers or measures such as 15% of 360.	I recognise when it is necessary to use the formulae for area and	I can de scribe positions on the full co ordinate grid (all four qua drants).		I can be flexible in choos- ing effective methods to answer questions.
									Larkwook in powers of 10 tumber up to	tor any given 1,000,000.	bers. subtract numbers more than 4 digits g efficient written	l linow and use the woodulary of prime numbers, prime factors, and composite (non-prime) numbers,	I can add and subtract fractions with the same denominator and related fractions.	I understand an object of the second	I use knowledge of the order of operations to carr out calculations involving the four operations.	I can divide proper fractions by whole numbers (e.g. 1/3 : 2-1/6). I can multiply simple pairs	I can solve problems which require answers to be rounded to specified degrees of	volume of shapes.	I can find unknown angles where they meet at a point, are on a straight line, and are vertically opposite.	I can convert kilometres to miles using a graphical representation.	I can understand and optian the misthods I choose and produce accurate answers.
									represents in 1,000,000.	ts, order and	hods. add numbers with e than 4 digits using		I can ecogritemised numbers and improper finations and convext fermione form to another.	I can convert to an read Roman different units on read Roman (e.g., Kilonan da to 1000 (M), motive and can centimetre arclan solve number	1 can identify common facto n, common multiples and prime numbers.	of proper fractions, writing the answer in its simplest form (n.g. 1/4 x 1/2 = 1/8). I can add and subbact fractions with different	I can use written division methods in cases where the answer has up to 2	I can recognise that shapes with the same areas can have different	I can illustrate and name parts of circles, including radius, dia meter and circumference.	I can draw graphs relating two variables.	I can makon mathe- matically (verbal).
									Number,	o. met	Addition and	factors, including finding all factors pins. Multiplication and	are all multiples of the same number.	Medican calculate interval	I can catalatementally, inducting with mixed opmations and large numbers I can interpret nimaind on	denominators and mixed numbers, using the concept of equivalent fractions.	l can multiply one digit numbers with up to	perimeters and vice versa.	I can find unknown angles in any triangles, quadrilaterals and	I can calculate and interpret the mean as an average.	I can justify my answer or give proof using math-
									ue and n	omiging	Subtraction	Links to the	mais	across 10° when using ingutive numbers.	as whole number remainders, fractions, or b rounding.	with division to calculate docimal fraction equival ents (e.g. 0.375) for a simple fraction (e.g. 3/8).	2 decimal places by whole numbers. I can multiply and divide numbers by 10, 100 and	miles and kilometres.	I can compare and classify ge ometric	I can construct line graphs. I can interpret line eraphs.	ematic al langu agu (wi Iten). I can solve problems using
														i can round any whole number.	digts by a 2-digit whole number using an efficient written method.	4 1 can compare and order fractions, including fractions >2. 1 can use common factors	numbers by 10, 100 and 1000 where the answers are up to 3 decimal plac- es.	units of measure. I can solve problems involving the calculation and conversion of units of	shapes based on their properties and sizes.	l can construct pie charts.	math smatic al knowled ge learnt. I can break down prob-
														I can read, write, ord or and compare numbers up to 30,000,000.	t can multiply multidigit numbers up to 4 digits by a 2 digit whole number using a written m ethod.	to simplify factions and use common multiples to ex- press fractions in the same denomination.	I can identify the value of each digit to three decimal places.	measure, using decimal notation to 3 decimal plac- es where appropriate.	and build simple 3-D shapes, including making nets.	I can interpret pie charts.	to seek solutions.
													/	Number and Algebra	+, -, x and ÷	Fractions Ratio and Propertion	Fractions, Decimals and Percentages	Measures	Geometry	Statistics	Problem Solving



























1.11.21

April has 732 beads. She makes 8 necklaces with an equal number of beads. How many beads does each necklace have? How many are left over?

adults should go with the children? 12206 12×1

Ilyas has 346 biscuits. He splits them equally between 5 friends. If he shares out all of the biscuits, how many biscuits does each of his friends get?

5/33946

Danni wants to build <u>3 walls</u> th equal number of bricks. She has How many bricks can she use for

229151

0 5 6 7 15

9 8 57 64 CU

8 77312















Interactive













Enrichment Opportunities – Maths Week

Throughout the week we had a maths guiz, a Times Tables Rockstars battle across the whole school and buddy maths, where we played games including Shut the Box and Countdown, with children from across the year group! We also had an opportunity to look at some wonderful maths related books, including Emily Gravett's 'The Rabbit Problem'. Over the week, each year group had a different mathematical task to complete. Year 3 had to create their own Zoo, making sure that they had enough money and space to buy a variety of different animals. Year 4 planned a theme park and had to make sure their plans included a variety of rides, whereas Year 5 planned day trips to London and Brighton, where they had to factor in the cost of different museums. Year 6 were put to work planning a day trip for their Isle of Wight residential and put forward different ideas based on cost and time spent at the different amusements. The culmination of the week was a visit from 'House of Maths', who tailored mathematical shows to each year group and wowed everyone!



