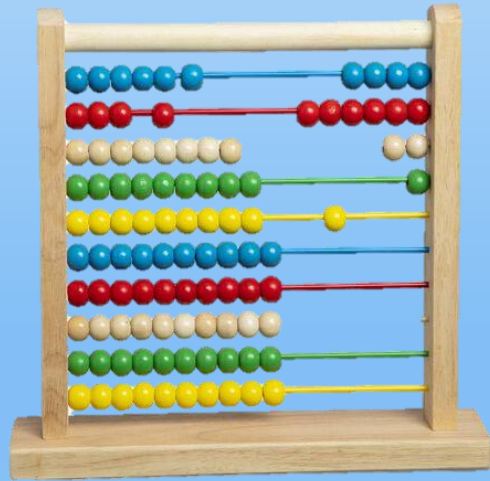


Mathematics

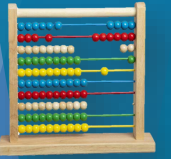


Intent

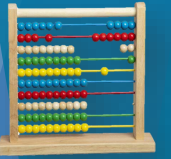
At the centre of our approach to the teaching of mathematics at Southway Junior is the unwavering belief that all children have the potential to succeed. We believe that all children need a deep understanding of the mathematics they are learning and use small steps to build all children into great mathematicians.

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.

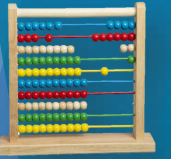
We take a starting point of a concrete, pictorial and then abstract approach (CPA) to maths lessons, where firstly the children are introduced to a new concept through concrete, physical resources. Children then move on to pictorial, visual representations to further consolidate their understanding. 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.

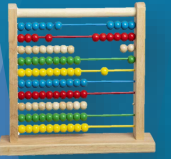


Impact

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



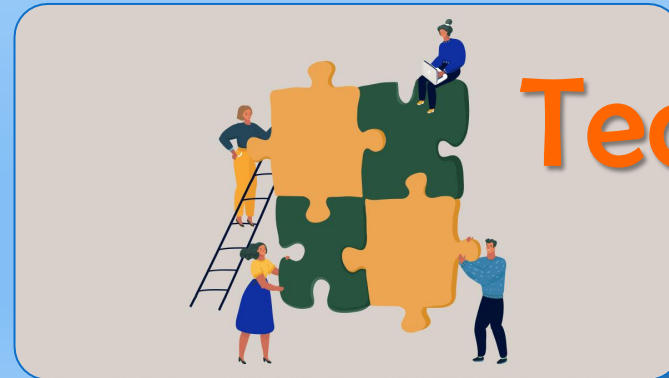
Kindness



Respect

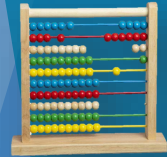


Resilience



Teamwork

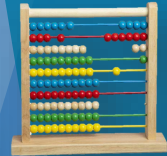
Curriculum Overview



Mathematics Programmes of Study									
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 fractions.	I can compare durations of events of even.	I can identify horizontal, vertical, perpendicular and parallel lines in relation to other lines.	I can interpret data presented in many contexts.	I can use simple tables (e.g. 2, 5, 10 units per cm) in pictograms and bar charts.		
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 order fractions with the same denominator.	I can recognise and write the Roman numerals from I to X.	I can identify whether angles are greater than or less than a right angle.				
I can identify, represent and estimate number in different contexts.	I can estimate the answer to a division and use inverse operations to check answers.	I can use efficient written methods to multiply a 2 digit and 1 digit number.	I can add and subtract fractions with the same denominator within 1 whole.	I can read Roman numerals to 100 (I to C) and understand how the numeral system changed.					
I can compare and order number up to 1000.	I can subtract numbers with up to 3 digits using an efficient written method.	I can use mental strategies to multiply a 2 digit number by a 1 digit.	I can recognise and show equivalent fractions, using diagrams.						
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 recall and use x and + facts for the 8 times tables.	I can recognise and use x and + facts for the 8 times tables.	I can round a number to the nearest 10, 100 or 1000.	I can solve number and practical problems using place value.				
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 and use x and + facts for the 8 times tables.	I can identify, represent and estimate numbers.	I can solve addition two-step problems by dividing which operations and methods to use and why.				
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 can recall and use x and + facts for the 4 times tables.	I can identify, represent and estimate numbers.	I can solve addition two-step problems by dividing which operations and methods to use and why.				
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 recall and use x and + facts for the 3 times tables.	I can count up and down in tens.	I can estimate to check answers to calculations.				
Number, place value and rounding	Addition and Subtraction	Multiplication and Division	Fractions						
I can count backwards through zero to include negative numbers.	I can subtract numbers with up to 4 digits using efficient written methods.	I can recall x and + facts for multiplication tables up to 12 x 12.	I can add and subtract fractions with the same denominator.	I can estimate to check answers to calculations.	I can use place value, known and derived facts to divide mentally.				
I can find 100 more or less than a given number.	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.	I can identify, name and write equivalent fractions of a given fraction.	I can estimate to check answers to calculations.	I can use place value, known and derived facts to multiply mentally.				
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.	I can convert between different units of measure (e.g. kilometres to metres, hours to minutes).	I can measure and calculate the perimeter of a rectangular figure (including squares) in centimetres and metres.	I can use place value, known and derived facts to multiply mentally.				
Number, place value and rounding	Addition and Subtraction	Multiplication and Division	Fractions and Decimals	Measures	Geometry				
I can count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.	I can subtract numbers with more than 4 digits using efficient written methods.	I can add numbers with more than 4 digits using efficient written methods.	I can compare and order fractions whose denominators are all multiples of the same number.	I can compare and order fractions whose denominators are all multiples of the same number.	I can add numbers with more than 4 digits using efficient written methods.				
I can know what each digit represents in numbers to 1,000,000.	I can subtract numbers with more than 4 digits using efficient written methods.	I can add numbers with more than 4 digits using efficient written methods.	I can compare and order fractions whose denominators are all multiples of the same number.	I can compare and order fractions whose denominators are all multiples of the same number.	I can add numbers with more than 4 digits using efficient written methods.				
I can read, write, order and compare numbers to at least 1,000,000.	I can subtract numbers with more than 4 digits using efficient written methods.	I can add numbers with more than 4 digits using efficient written methods.	I can compare and order fractions whose denominators are all multiples of the same number.	I can compare and order fractions whose denominators are all multiples of the same number.	I can add numbers with more than 4 digits using efficient written methods.				
Number, place value and rounding	Addition and Subtraction	Multiplication and Division	Fractions and Decimals	Measures	Geometry				
I can calculate intervals of 'any' when using negative numbers.	I can subtract numbers with more than 4 digits using efficient written methods.	I can add numbers with more than 4 digits using efficient written methods.	I can compare and order fractions whose denominators are all multiples of the same number.	I can compare and order fractions whose denominators are all multiples of the same number.	I can add numbers with more than 4 digits using efficient written methods.				
I can use negative numbers in context.	I can subtract numbers with more than 4 digits using efficient written methods.	I can add numbers with more than 4 digits using efficient written methods.	I can compare and order fractions whose denominators are all multiples of the same number.	I can compare and order fractions whose denominators are all multiples of the same number.	I can add numbers with more than 4 digits using efficient written methods.				
I can round any whole number.	I can subtract numbers with more than 4 digits using efficient written methods.	I can add numbers with more than 4 digits using efficient written methods.	I can compare and order fractions whose denominators are all multiples of the same number.	I can compare and order fractions whose denominators are all multiples of the same number.	I can add numbers with more than 4 digits using efficient written methods.				
I can read, write, order and compare numbers up to 10,000,000.	I can subtract numbers with more than 4 digits using efficient written methods.	I can add numbers with more than 4 digits using efficient written methods.	I can compare and order fractions whose denominators are all multiples of the same number.	I can compare and order fractions whose denominators are all multiples of the same number.	I can add numbers with more than 4 digits using efficient written methods.				
Number and Algebra	+, -, x and ÷	Fractions, Decimals and Percentages	Fractions, Decimals and Percentages	Measures	Geometry	Statistics	Problem Solving		

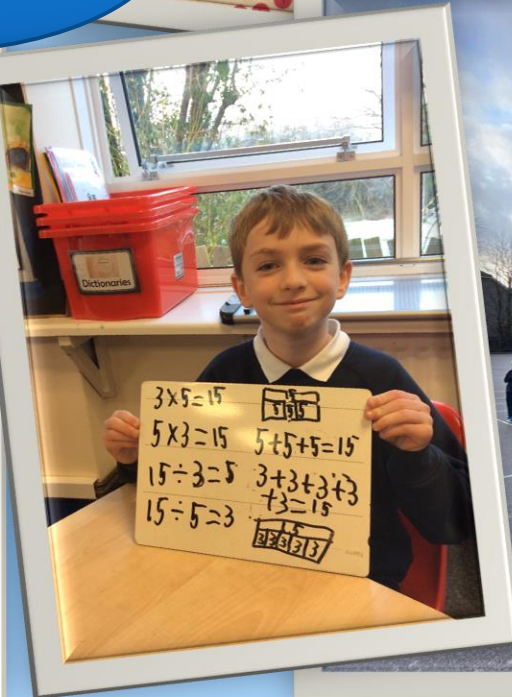
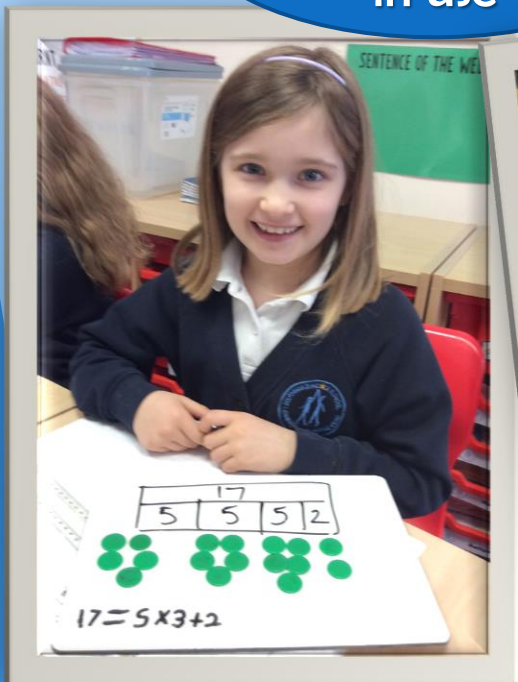
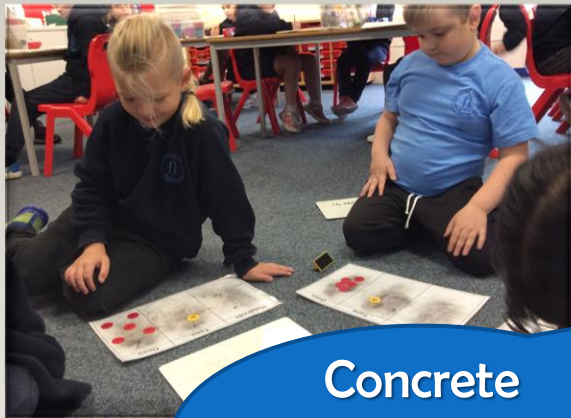
STANDARDS IN YEAR 3

Children
becoming
teachers

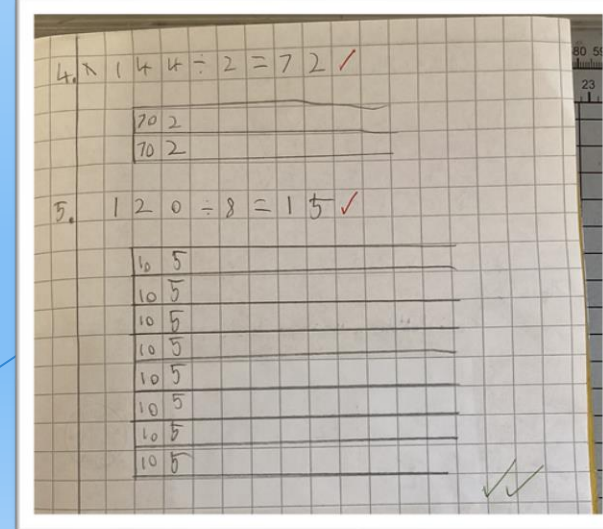
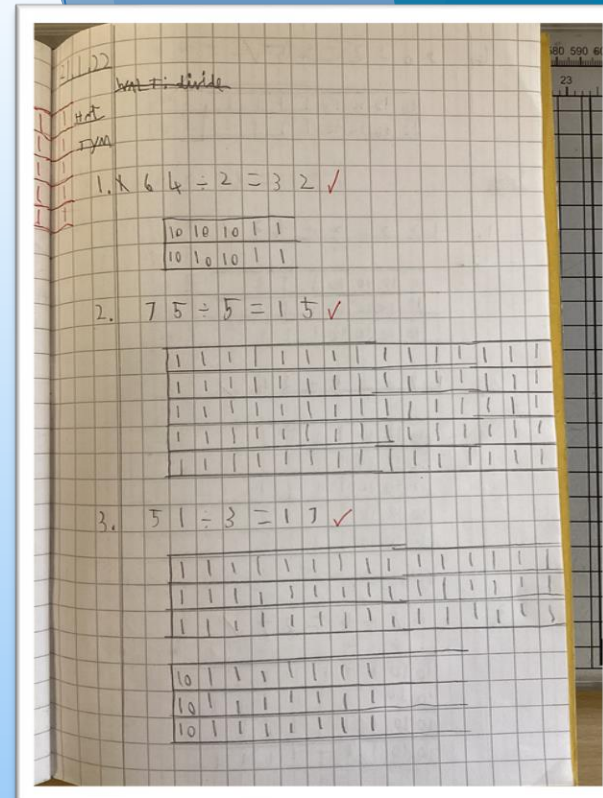
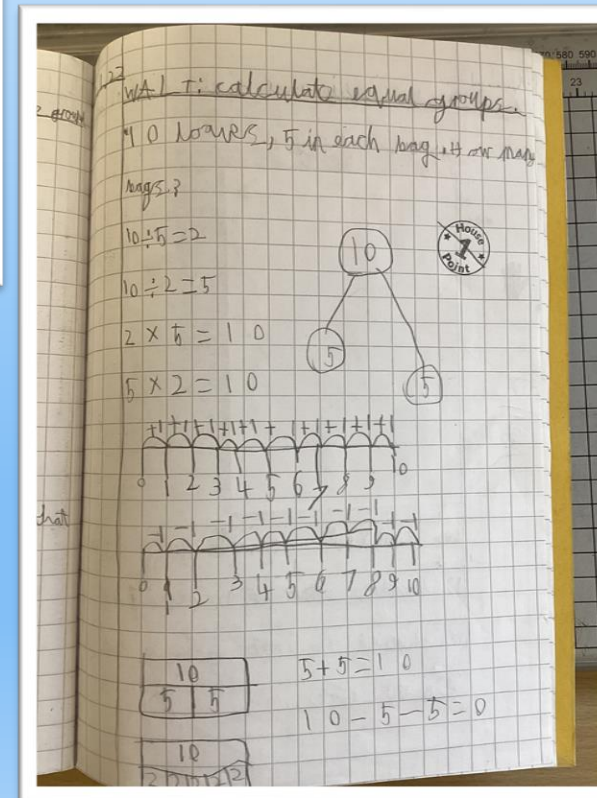
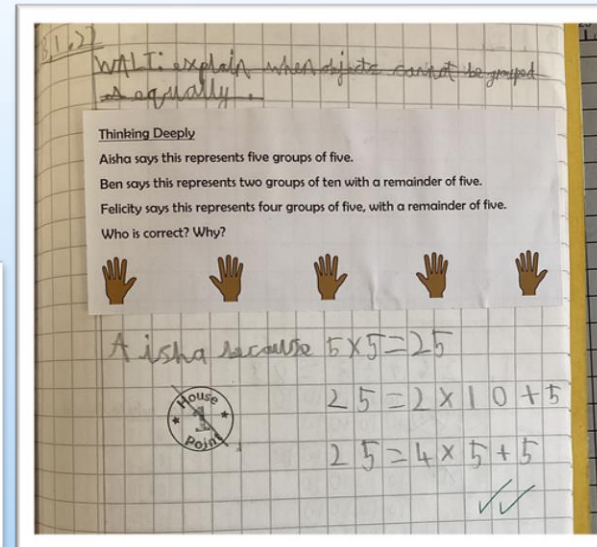
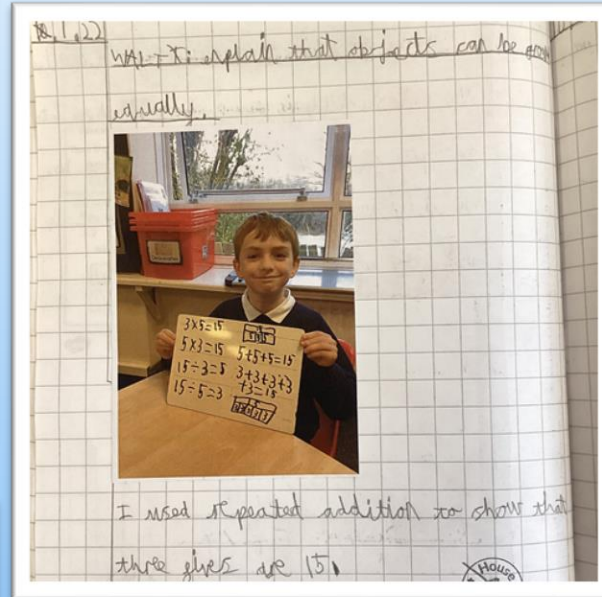
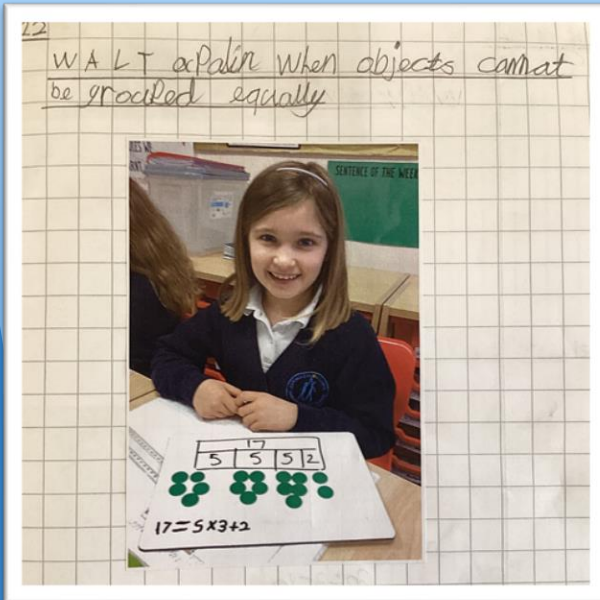
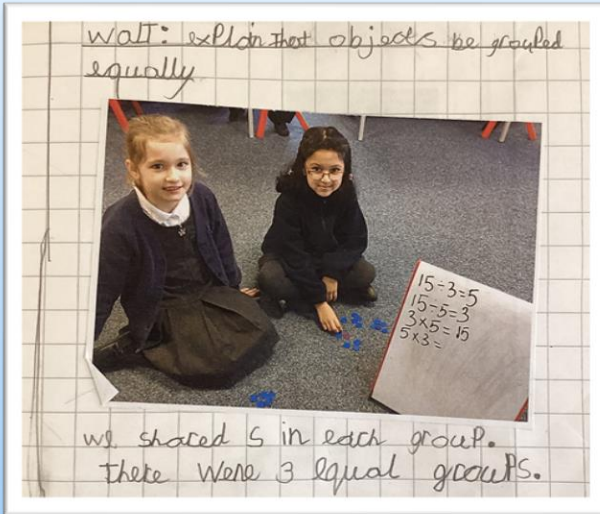


Concrete
manipulatives
in use

Outside
learning

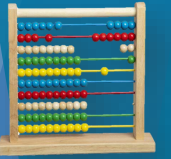


STANDARDS IN YEAR 3



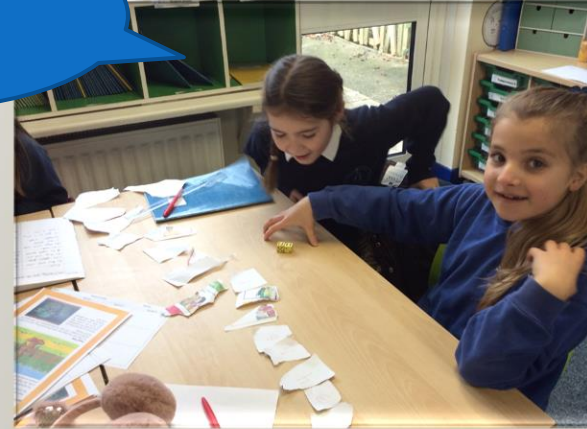
Division Progression in Year 3

STANDARDS IN YEAR 4



Outside
learning

Buddy
maths



Translation

Perimeter



A wooden abacus with multiple horizontal rods. Each rod has several small, round beads in different colors: blue, red, white, yellow, and green. The abacus is made of light-colored wood and has a simple, traditional design.

Progression in Year 4

12.10.21

WAT: *work using short division*

C

1.
$$\begin{array}{r} 309 \\ 3 \overline{) 927} \\ \underline{092} \\ 3 \end{array}$$
 ✓

2.
$$\begin{array}{r} 061 \\ 5 \overline{) 305} \\ \underline{305} \\ 0 \end{array}$$
 ✓

3.
$$\begin{array}{r} 107 \\ 7 \overline{) 749} \\ \underline{749} \\ 0 \end{array}$$
 ✓

4.
$$\begin{array}{r} 071 \\ 6 \overline{) 426} \\ \underline{426} \\ 0 \end{array}$$
 ✓

5.
$$\begin{array}{r} 109 \\ 9 \overline{) 981} \\ \underline{981} \\ 0 \end{array}$$
 ✓

6.
$$\begin{array}{r} 109 \\ 8 \overline{) 872} \\ \underline{872} \\ 0 \end{array}$$
 ✓

7.
$$\begin{array}{r} 071 \\ 9 \overline{) 639} \\ \underline{639} \\ 0 \end{array}$$
 ✓

8.
$$\begin{array}{r} 081 \\ 7 \overline{) 567} \\ \underline{567} \\ 0 \end{array}$$
 ✓

10.
$$\begin{array}{r} 099 \\ 7 \overline{) 693} \\ \underline{693} \\ 0 \end{array}$$
 ✓

13.10.21

C

1.
$$\begin{array}{r} 107 \\ 7 \overline{) 749} \\ \underline{749} \\ 0 \end{array}$$
 ✓

2.
$$\begin{array}{r} 071 \\ 6 \overline{) 426} \\ \underline{426} \\ 0 \end{array}$$
 ✓

3.
$$\begin{array}{r} 109 \\ 9 \overline{) 981} \\ \underline{981} \\ 0 \end{array}$$
 ✓

4.
$$\begin{array}{r} 109 \\ 8 \overline{) 872} \\ \underline{872} \\ 0 \end{array}$$
 ✓

5.
$$\begin{array}{r} 071 \\ 9 \overline{) 639} \\ \underline{639} \\ 0 \end{array}$$
 ✓

6.
$$\begin{array}{r} 081 \\ 7 \overline{) 567} \\ \underline{567} \\ 0 \end{array}$$
 ✓

10.
$$\begin{array}{r} 099 \\ 7 \overline{) 693} \\ \underline{693} \\ 0 \end{array}$$
 ✓

11/02/21


WAT: divide by sharing equally

1. $130 \div 5 = 26$

10	10	1	1	1	1	1
10	10	1	1	1	1	1
10	10	1	1	1	1	1
10	10	1	1	1	1	1
10	10	1	1	1	1	1

2. $333 \div 3 = 111$

100	10	1
100	10	1
100	10	1



17. 22.11.21
T Y M
P: 41
Mild
B
HLTA
55

WAT: use written methods of division.

1. $33 \div 2 = 11 \text{ r } 2$

$$\begin{array}{r} 16 \text{ r } 1 \\ 2 \overline{) 33} \end{array}$$

2. $87 \div 7 = 10$

$$\begin{array}{r} 10 \\ 7 \overline{) 87} \end{array}$$

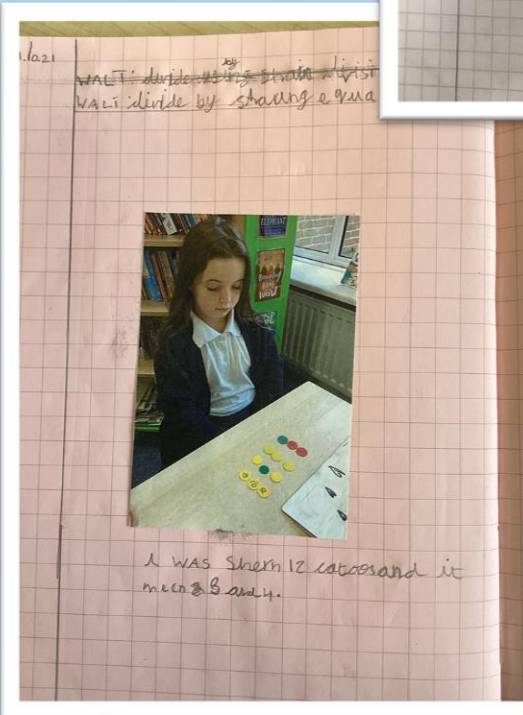
3. $55 \div 3 =$

$$\begin{array}{r} 1 \\ 3 \overline{) 55} \end{array}$$

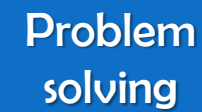
31.11.21
T Y M
P: 42
A

2.

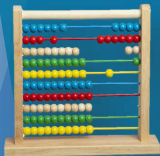
3



A colorful wooden abacus with multiple rows of beads in blue, red, yellow, and white. The abacus has a light-colored wooden frame and several horizontal rods. The beads are arranged in rows, with some rods having more beads than others. The colors of the beads are blue, red, yellow, and white. The abacus is shown from a slightly elevated angle, highlighting its three-dimensional structure.



STANDARDS IN YEAR 5



Division
Progression
in Year 5

Handwritten notes on a grid paper showing division problems and solutions:

1. $95 \div 5 = 19$ ✓

2. $81 \div 6 = 13 \text{ r } 3$ ✓

3. $10146 \div 10 = 1014 \text{ r } 6$ ✓

4. $69 \div 4 = 17 \text{ r } 1$ ✓

5. $145 \div 8 = 18 \text{ r } 1$ ✓

6. $56 \div 2 = 28$ ✓

Handwritten notes on a grid paper showing division problems and solutions, including word problems:

1. 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?

2. There are 206 children going on a school trip to a farm. There must be at least one adult for every 4 children. How many adults should go with the children?

3. Ryan 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?

4. Danni wants to build 3 walls of equal number of bricks. She has 347 bricks. How many bricks can she use for each wall?

5. Roger wants to split 347 sheets of paper into 6 equal piles. How many sheets should he put in each pile?

6. It is 874 miles from Land's End to John o'Groats. Tawn sets off from Land's End and walks 9 miles a day. How many days will it take her to reach John o'Groats?

Handwritten notes on a grid paper showing division problems and solutions:

1. $772 \div 9 = 85 \text{ r } 7$ ✓

2. $471 \div 6 = 78 \text{ r } 3$ ✓

3. $518 \div 8 = 64 \text{ r } 6$ ✓

4. $533 \div 9 = 59 \text{ r } 2$ ✓

5. $804 \div 11 = 73 \text{ r } 1$ ✓

Handwritten notes on a grid paper showing division problems and solutions:

1. $72653 \div 4 = 18163 \text{ r } 3$ ✓

2. $4337424 \div 4 = 1084356$ ✓

3. $1129759 \div 11 = 102705 \text{ r } 4$ ✓

4. $85267 \div 8 = 10658 \text{ r } 3$ ✓

5. $627340 \div 6 = 10455 \text{ r } 4$ ✓

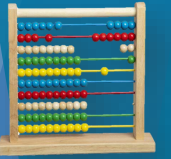
6. $94453 \div 9 = 10494 \text{ r } 3$ ✓

7. $128045 \div 2 = 64022 \text{ r } 1$ ✓

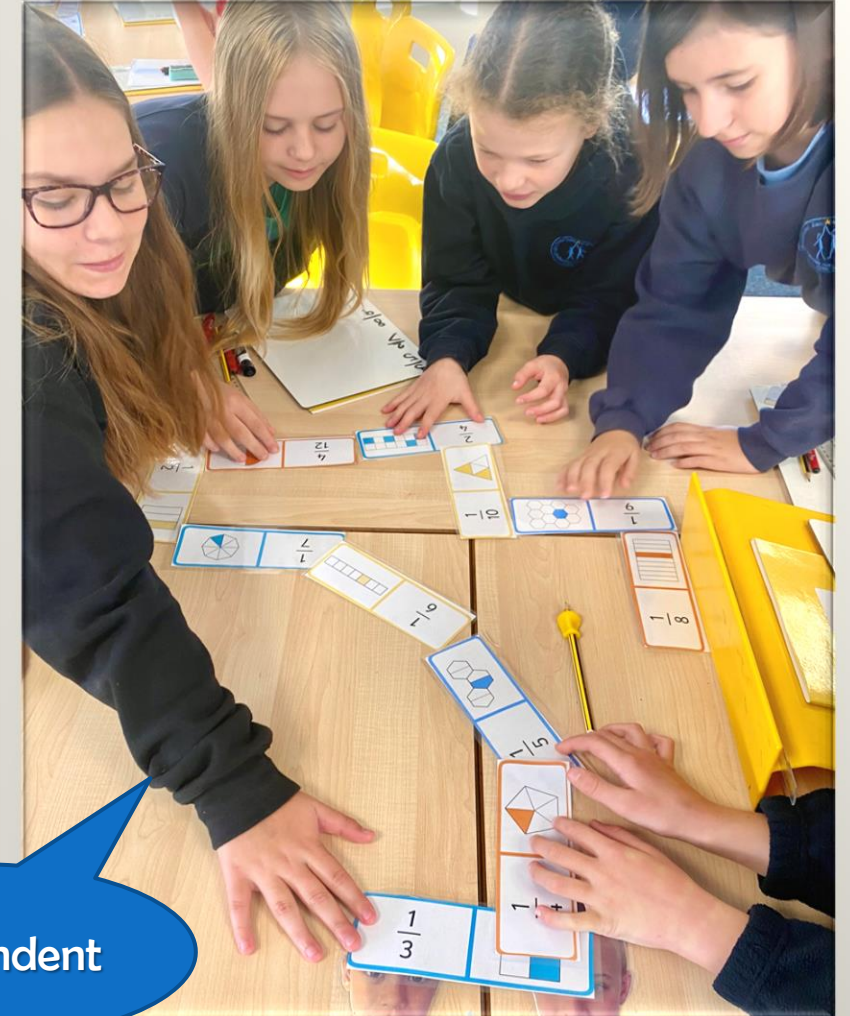
8. $325176 \div 3 = 108392$ ✓

9. $6331756 \div 6 = 105529 \text{ r } 2$ ✓

STANDARDS IN YEAR 6

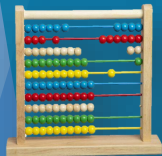


Interactive



Independent

STANDARDS IN YEAR 6



5/10/21
TYM
spicy

1 $\overline{) 02496^r5}$ ✓
 $\overline{) 71747}$

2 $\overline{) 04532^r1}$ ✓
 $\overline{) 94789}$

3 $\overline{) 04935^r1}$ ✓
 $\overline{) 94484}$

4 $\overline{) 01743}$ ✓
 $\overline{) 111933}$

5 $\overline{) 06829^r5}$ ✓
 $\overline{) 64979}$

6 $\overline{) 03578}$ ✓
 $\overline{) 87864}$

6/10/21
WAT use short division

8.10.21
WAT use short division

TYM

① $\overline{) 0839}$ ✓
 $\overline{) 48856}$

② $\overline{) 2647^r1}$ ✓
 $\overline{) 2825}$

③ $\overline{) 0194}$ ✓
 $\overline{) 717828}$

④ $\overline{) 0628^r2}$ ✓
 $\overline{) 58442}$

⑤ $\overline{) 0356^r7}$ ✓
 $\overline{) 98241}$

⑥ $\overline{) 063^r7}$ ✓
 $\overline{) 485128}$

⑦ $\overline{) 024^r9}$ ✓
 $\overline{) 8193972}$

⑧ $\overline{) 05^r86}$ ✓
 $\overline{) 21112}$

⑨ $\overline{) 072^r5}$ ✓
 $\overline{) 756135}$

⑩ $\overline{) 0942^r2}$ ✓
 $\overline{) 87508}$

⑪ $\overline{) 0685}$ ✓
 $\overline{) 74535}$

⑫ $\overline{) 06^r9m}$ ✓
 $\overline{) 64154}$

⑬ $\overline{) 02496^r5}$ ✓
 $\overline{) 71747}$

⑭ $\overline{) 01743}$ ✓
 $\overline{) 111933}$

⑮ $\overline{) 07062^r9}$ ✓
 $\overline{) 12887533}$

Division
Progression
in Year 6

6.10.21
WAT use short division

H.

① $\overline{) 13}$ ✓
 $\overline{) 68}$

② $\overline{) 014}$ ✓
 $\overline{) 81132}$

③ $\overline{) 25}$ ✓
 $\overline{) 315}$

④ $\overline{) 016}$ ✓
 $\overline{) 71142}$

⑤ $\overline{) 013}$ ✓
 $\overline{) 91127}$

⑥ $\overline{) 029}$ ✓
 $\overline{) 51145}$

⑦ $\overline{) 018}$ ✓
 $\overline{) 611048}$

⑧ $\overline{) 017}$ ✓
 $\overline{) 81156}$

⑨ $\overline{) 017}$ ✓
 $\overline{) 71149}$

⑩ $\overline{) 39}$ ✓
 $\overline{) 218}$

⑪ $\overline{) 016}$ ✓
 $\overline{) 91154}$

⑫ $\overline{) 019}$ ✓
 $\overline{) 811672}$

⑬ $\overline{) 018}$ ✓
 $\overline{) 611048}$

⑭ $\overline{) 028}$ ✓
 $\overline{) 41132}$

⑮ $\overline{) 018}$ ✓
 $\overline{) 911672}$

⑯ $\overline{) 019}$ ✓
 $\overline{) 711345}$

⑰ $\overline{) 018}$ ✓
 $\overline{) 711256}$

⑱ $\overline{) 14}$ ✓
 $\overline{) 6824}$

⑲ $\overline{) 017^r1}$ ✓
 $\overline{) 91153}$

⑳ $\overline{) 019^r1}$ ✓
 $\overline{) 811573}$

⑳ $\overline{) 14}$ ✓
 $\overline{) 6824}$

⑳ $\overline{) 013}$ ✓
 $\overline{) 811024}$

TYM

M.

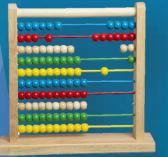
① $\overline{) 071^r1}$ ✓
 $\overline{) 1143}$

② $\overline{) 014^r3}$ ✓
 $\overline{) 2815}$

③ $\overline{) 016^r1}$ ✓
 $\overline{) 331819}$

④ $\overline{) 036^r2}$ ✓
 $\overline{) 311819}$

Pupil Voice



My favourite types of maths activities are....

I pregene when we are in groups.

I learn most in maths when...

I explain to my partner about it

I learn most in maths when...

I'm challenged

I learn most in maths when...

when I have a good night sleep

My favourite types of maths activities are...

Really, really hard maths.

I learn most in maths when...

I Challenge myself

My favourite types of maths activities are....

Physical learning

My favourite types of maths activities are....

maths, sit on the playground

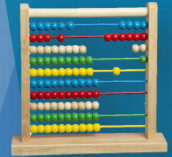
I learn most in maths when...

is working with a sensible partner

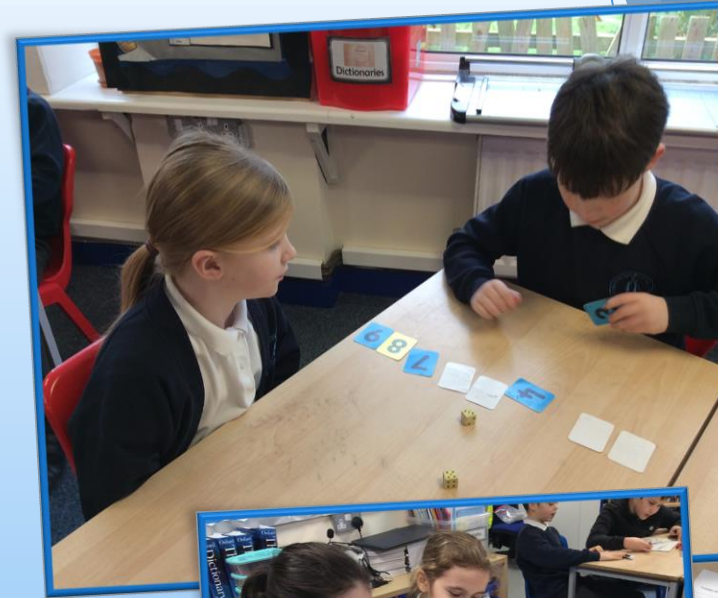
Maths at Southway could be improved by:

having more counters

Enrichment Opportunities – Maths Week



Throughout the week we had a maths quiz, 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!



CELEBRATING SUCCESS

TIMES TABLES
ROCKSTARS
COMPETITION

HALF-TERMLY
MATHS AWARDS

ROCKSTAR
LEADER
BOARDS

