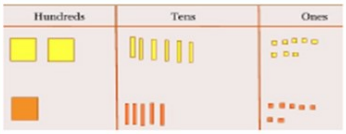
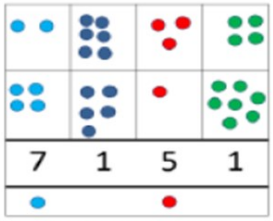
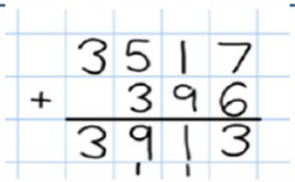
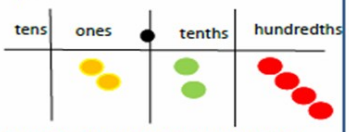
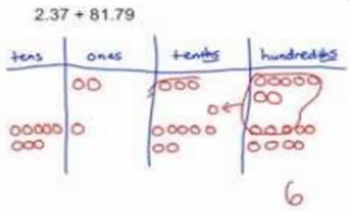
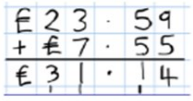
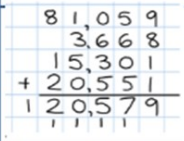
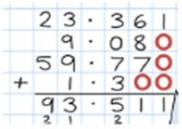
Supporting Maths Mastery Skills

Year 5

This booklet aims to show you, as simply as possible, how to help your child in Maths.

ADDITION

In Year 5, pupils are expected to use the column method to add large numbers. Each individual number needs to be recorded in one square and in the correct column. To start with the children use counters on a place value grid so they can visually see the exchange take place.

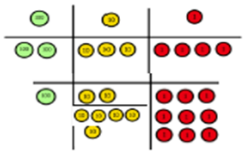
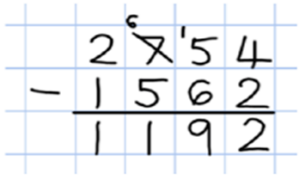
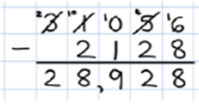
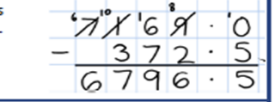
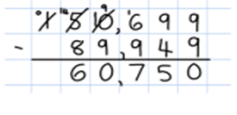
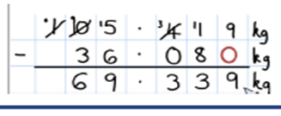
Objective & Strategy	Concrete	Pictorial	Abstract
Y4—add numbers with up to 4 digits	~~Children continue to use dienes or pv~~ counters to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand. 	 Draw representations using pv grid.	 Continue from previous work to carry hundreds as well as tens. Relate to money and measures.
Y5—add numbers with more than 4 digits. Add decimals with 2 decimal places, including money.	As year 4  Introduce decimal place value counters and model exchange for addition.		72.8 + 54.6 127.4 1 1 
Y6—add several numbers of increasing complexity Including adding money, measure and decimals with different numbers of decimal points.	As Y5	As Y5	 Insert zeros for place holders. 

$$\begin{array}{r} 5\ 3\ 6\ 5\ 4 \\ \quad\quad\quad\quad\ 3 \\ +\ 2\ 4^{1}\ 9\ \ {}^{1}8 \\ \hline 7\ 8\ 5\ 9\ 2 \end{array}$$

SUBTRACTION

Year 5, pupils will continue to use the column method and exchange. Each number must be set out in the correct column and one number in each square. To start with the children use counters on a place value grid so they can visually see the exchange take place.

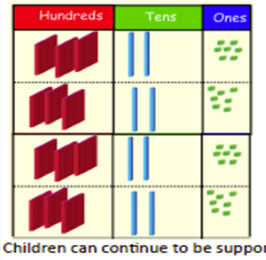
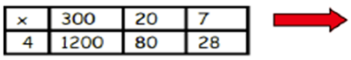
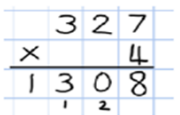
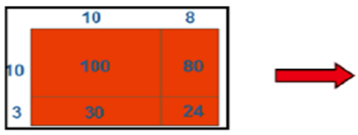
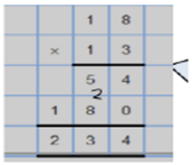
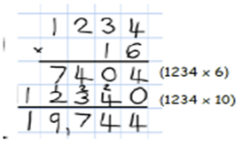
$$\begin{array}{r} 7\ \cancel{4}^{3}\ \cancel{8}^{1}\ \cancel{3}^{2}\ {}^{1}6 \\ -\ 3\ 2\ 9\ 1\ 8 \\ \hline 4\ 1\ 9\ 1\ 8 \end{array}$$

Objective & Strategy	Concrete	Pictorial	Abstract
Subtracting tens and ones Year 4 subtract with up to 4 digits. *Introduce decimal subtraction through context of money*	234 - 179  Model process of exchange using Numicon, base ten and then move to PV counters.	Children to draw pv counters and show their exchange—see Y3	 Use the phrase 'take and make' for exchange
Year 5- Subtract with at least 4 digits, including money and measures. *Subtract with decimal values, including mixtures of integers and decimals and aligning the decimal*	As Year 4	Children to draw pv counters and show their exchange—see Y3	 Use zeros for place-holders. 
Year 6—Subtract with increasingly large and more complex numbers and decimal values.			 

MULTIPLICATION

Year 5, pupils are expected to try out long multiplication. They will multiply 1,274 by 9 on the first line. Then progress to multiplying 1,274 by 30 on the next line understanding that placing a zero in the ones column means they have times the number by 10. Finally they must add the two results. Each number must be in one square and they will start in the right hand column. The children will also see this represented on a multiplication grid.

	1	2	7	4
x			3	9
1	1	4	6	6
3	8	2	2	0
4	9	6	8	6

Objective & Strategy	Concrete	Pictorial	Abstract
Column Multiplication for 3 and 4 digits x 1 digit.	 It is important at this stage that they always multiply the ones first. Children can continue to be supported by place value counters at the stage of multiplication. This initially done where there is no regrouping. 321 x 2 = 642		327 x 4 = 28, 80, 1200 = 1308  This will lead to a compact method.
Column multiplication	Manipulatives may still be used with the corresponding long multiplication modelled alongside.	 Continue to use bar modelling to support problem solving	 18 x 3 on the first row (8 x 3 =24, carrying the 2 for 20, then 1 x 3) 18 x 10 on the 2nd row. Show multiplying by 10 by putting zero in units first  (1234 × 6) (1234 × 10)

DIVISION

In Year 5, pupils continue to develop a standard method of dividing a four digit number by a single digit. Pupils will develop the ability to write their answers with remainders or even a fraction. Once again, the children will start with counters so they visually see the remainders.

$$7 \overline{)\,7\ 2\ {}^{2}5\ {}^{4}6} \qquad 1\ 0\ 3\ 6 \qquad \frac{4}{7}$$

Objective & Strategy	Concrete	Pictorial	Abstract
Divide at least 3 digit numbers by 1 digit. Short Division	96 ÷ 3 Tens Units 3 2 3 Use place value counters to divide using the bus stop method alongside Calculations 42 ÷ 3 42 ÷ 3= Start with the biggest place value, we are sharing 40 into three groups. We can put 1 ten in each group and we have 1 ten left over. We exchange this ten for ten ones and then share the ones equally among the groups. We look how much in 1 group so the answer is 14.	Students can continue to use drawn diagrams with dots or circles to help them divide numbers into equal groups. Encourage them to move towards counting in multiples to divide more efficiently.	Begin with divisions that divide equally with no remainder. 2 1 8 3 4 8 7 2 Move onto divisions with a remainder. 8 6 r 2 3 5 4 3 2 Finally move into decimal places to divide the total accurately. 1 4 . 6 16 21 3 5 5 1 1 . 0 0 6 6 3 r 5 8 5 3 0 2 9

Year 5 I can statements

By the end of year 5 your child should be able to achieve the following I can statements.

Number - Place Value

- I can read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.
- I can read Roman numerals to 1000, including years.
- I can count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.
- I can interpret negative numbers in context.
- I can round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.

Number – Addition and Subtraction

- I can add and subtract numbers with more than 4-digits, including using formal written methods.
- I can add and subtract numbers mentally with increasingly large numbers.
- I can use rounding to check answers to calculations.
- I can solve addition and subtraction multi-step problems, deciding which operations and methods to use and why.

Number – Multiplication and Division

- I can identify multiples and factors, incl. finding factor pairs and common factors.
- I can use and know vocabulary: prime numbers, prime factors and composite numbers.
- I can recall prime numbers up to 19.
- I can recognise and use square and cube numbers and know the notation.
- I can multiply and divide numbers by 10, 100 or 1000, including decimals.
- I can multiply and divide numbers mentally, drawing upon known facts.
- I can use long multiplication for multiplying numbers up to 4 digits by 1 or 2 digits.
- I can divide numbers using standard written short division and interpret remainders.
- I can solve problems using multiplication and division methods.
- I can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Please help your child become familiar with their times tables.

0 ÷ 3 = 0 3 ÷ 3 = 1 6 ÷ 3 = 2 9 ÷ 3 = 3 12 ÷ 3 = 4 15 ÷ 3 = 5 18 ÷ 3 = 6 21 ÷ 3 = 7 24 ÷ 3 = 8 27 ÷ 3 = 9 30 ÷ 3 = 10 33 ÷ 3 = 11 36 ÷ 3 = 12	0 ÷ 5 = 0 5 ÷ 5 = 1 10 ÷ 5 = 2 15 ÷ 5 = 3 20 ÷ 5 = 4 25 ÷ 5 = 5 30 ÷ 5 = 6 35 ÷ 5 = 7 40 ÷ 5 = 8 45 ÷ 5 = 9 50 ÷ 5 = 10 55 ÷ 5 = 11 60 ÷ 5 = 12	0 ÷ 4 = 0 4 ÷ 4 = 1 8 ÷ 4 = 2 12 ÷ 4 = 3 16 ÷ 4 = 4 20 ÷ 4 = 5 24 ÷ 4 = 6 28 ÷ 4 = 7 32 ÷ 4 = 8 36 ÷ 4 = 9 40 ÷ 4 = 10 44 ÷ 4 = 11 48 ÷ 4 = 12	0 ÷ 10 = 0 10 ÷ 10 = 1 20 ÷ 10 = 2 30 ÷ 10 = 3 40 ÷ 10 = 4 50 ÷ 10 = 5 60 ÷ 10 = 6 70 ÷ 10 = 7 80 ÷ 10 = 8 90 ÷ 10 = 9 100 ÷ 10 = 10 110 ÷ 10 = 11 120 ÷ 10 = 12
2 x 10 = 20 2 x 20 = 40 2 x 30 = 60 2 x 40 = 80 2 x 50 = 100 2 x 60 = 120 2 x 70 = 140 2 x 80 = 160 2 x 90 = 180 2 x 100 = 200 2 x 110 = 220 2 x 120 = 240	5 x 10 = 50 5 x 20 = 100 5 x 30 = 150 5 x 40 = 200 5 x 50 = 250 5 x 60 = 300 5 x 70 = 350 5 x 80 = 400 5 x 90 = 450 5 x 100 = 500 5 x 110 = 550 5 x 120 = 600	3 x 10 = 30 3 x 20 = 60 3 x 30 = 90 3 x 40 = 120 3 x 50 = 150 3 x 60 = 180 3 x 70 = 210 3 x 80 = 240 3 x 90 = 270 3 x 100 = 300 3 x 110 = 330 3 x 120 = 360	10 x 10 = 100 10 x 20 = 200 10 x 30 = 300 10 x 40 = 400 10 x 50 = 500 10 x 60 = 600 10 x 70 = 700 10 x 80 = 800 10 x 90 = 900 10 x 100 = 1000 10 x 110 = 1100 10 x 120 = 1200
20 ÷ 1 = 20 40 ÷ 2 = 20 60 ÷ 3 = 20 80 ÷ 4 = 20 100 ÷ 5 = 20 120 ÷ 6 = 20 140 ÷ 7 = 20 160 ÷ 8 = 20 180 ÷ 9 = 20 200 ÷ 10 = 20 220 ÷ 11 = 20 240 ÷ 12 = 20	50 ÷ 1 = 50 100 ÷ 2 = 50 150 ÷ 3 = 50 200 ÷ 4 = 50 250 ÷ 5 = 50 300 ÷ 6 = 50 350 ÷ 7 = 50 400 ÷ 8 = 50 450 ÷ 9 = 50 500 ÷ 10 = 50 550 ÷ 11 = 50 600 ÷ 12 = 50	30 ÷ 1 = 30 60 ÷ 2 = 30 90 ÷ 3 = 30 120 ÷ 4 = 30 150 ÷ 5 = 30 180 ÷ 6 = 30 210 ÷ 7 = 30 240 ÷ 8 = 30 270 ÷ 9 = 30 300 ÷ 10 = 30 330 ÷ 11 = 30 360 ÷ 12 = 30	100 ÷ 1 = 100 200 ÷ 2 = 100 300 ÷ 3 = 100 400 ÷ 4 = 100 500 ÷ 5 = 100 600 ÷ 6 = 100 700 ÷ 7 = 100 800 ÷ 8 = 100 900 ÷ 9 = 100 1000 ÷ 10 = 100 1100 ÷ 11 = 100 1200 ÷ 12 = 100

Useful websites to help enhance your child's learning at home:

Number Blocks
BBC iPlayer - Numberblocks

KS2 BBC Bite Size
KS2 Maths - BBC Bitesize

Kids Maths Games
Kids Math Games Online - Free Interactive Learning Activities, Fun Educational Resources

Top Marks Maths
Ordering and Sequencing Numbers Games (topmarks.co.uk)

ICT Maths Games
ictgames || html5 Home Page

Maths Zone
Maths Zone Cool Learning Games – Maths Games and Learning Activties for Fun

Primary Games (some free games)
Primary Games :: Maths Games and Interactive Resources for the Primary Classroom

Times Table Rock Stars
Times Tables Rock Stars – Times Tables Rock Stars (ttrockstars.com)

Apps
One minute white rose maths
Twinkl times tables