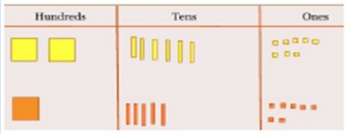
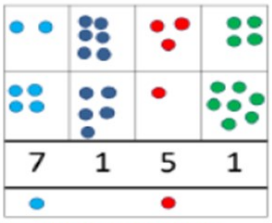
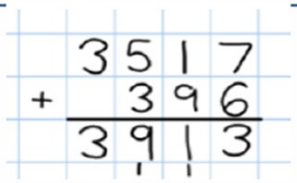
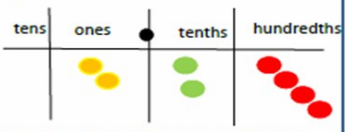
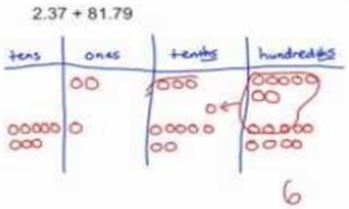
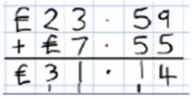
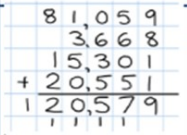
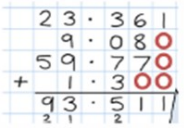
Supporting Maths Mastery Skills

Year 4

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

ADDITION

In Year 4, when pupils are confident with column addition they will extend to four digit numbers. If they still find adding hard they will label each column with the headings Th, H, T and U. At this stage the children can still use place value counters to see the exchange in each column when it takes place.

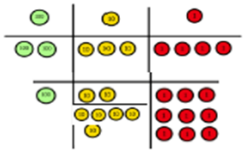
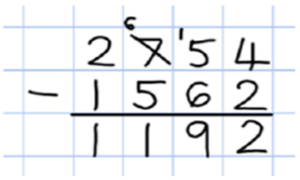
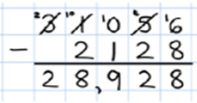
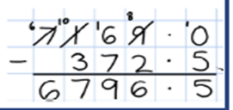
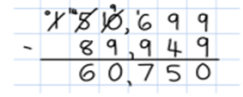
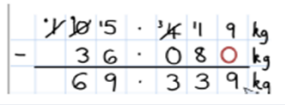
Objective & Strategy	Concrete	Pictorial	Abstract
Y4—add numbers with up to 4 digits	~~Children continue to use dienes or pv~~ counters to add, exchanging ten ones for a ten and ten tens for a hundred and ten hundreds for a thousand. 	 Draw representations using pv grid.	 Continue from previous work to 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. 

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

SUBTRACTION

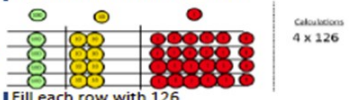
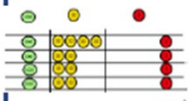
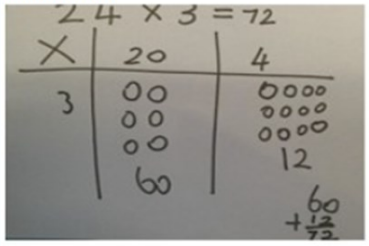
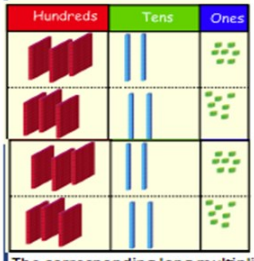
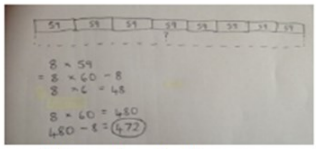
Year 4, pupils will record their work as column subtraction. Once the children are confident with the column method they will start to extend their recordings to working with four digit numbers. Place value counters at this stage will allow the children once again to visually see what is happening to the number

$$\begin{array}{r} 5\,{}^{2}\!\not{3}\,{}^{1}6\;8 \\ -\;2\;1\;9\;3 \\ \hline 3\;1\;7\;5 \\ \hline \end{array}$$

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 4, the children are expected to multiply a three digit number by a single digit number using a written calculation. Using a range of counters, dienes and multiplication grids allows the children to explore what is happening to the number at this stage.

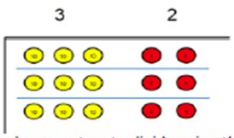
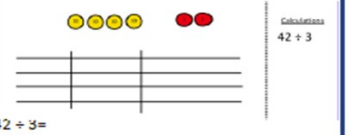
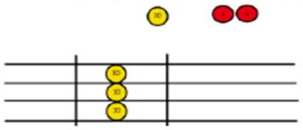
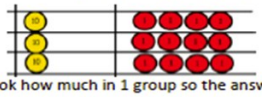
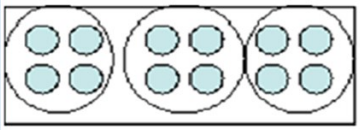
Objective & Strategy	Concrete	Pictorial	Abstract
Grid method recap from year 3 for 2 digits x 1 digit Move to multiplying 3 digit numbers by 1 digit. (year 4 expectation)	Use place value counters to show how we are finding groups of a number. We are multiplying by 4 so we need 4 rows  Fill each row with 126   Add up each col… …les making any exchanges needed	Children can represent their work with place value counters in a way that they understand. They can draw the counters using colours to show different amounts or just use the circles in the different columns to show their thinking as shown below.  	Start with multiplying by one digit numbers and showing the clear addition alongside the grid. | x | 30 | 5 | | 7 | 210 | 35 | 210 + 35 = 245
Column multiplication	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  It is important at this stage that they always multiply the ones first. The corresponding long multiplication is modelled alongside	| x | 300 | 20 | 7 | | 4 | 1200 | 80 | 28 | The grid method my be used to show how this relates to a formal written method.  Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.	327 x 4 28 80 1200 1308 3 2 7 x 4 1 3 0 8 1 2 This may lead to a compact method.

$$\begin{array}{r} 476 \\ \times \quad 7 \\ \hline 3332 \\ \hline \end{array}$$

DIVISION

In Year 4, pupils begin to record division of three digit numbers by drawing 'half a goalpost' as shown below. Children will then extend division calculations which will include a remainder. The children will start with counters so they visually see the remainders.

$$\begin{array}{r} 1\ 1\ 6\ \ r\ 2 \\ 6\overline{)\,6\ 9\ {}^{3}8} \end{array}$$

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  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. $\begin{array}{r} 2\ 1\ 8 \\ 4\overline{)\,8\ 7\ 2} \end{array}$ Move onto divisions with a remainder. $\begin{array}{r} 8\ 6\ r\ 2 \\ 5\overline{)\,4\ 3\ 2} \end{array}$ Finally move into decimal places to divide the total accurately. $\begin{array}{r} 1\ 4\ .\ 6 \\ 3\ 5\overline{)\,5\ 1\ 1\ .\ 0} \end{array}$ $\begin{array}{r} 0\ 6\ 6\ 3\ r\ 5 \\ 8\overline{)\,5\ {}^{5}3\ {}^{5}0\ {}^{2}9} \end{array}$

Year 4 I can statements

By the end of year 4 your child should be able to achieve the following I can statements.

Number – Place Value

- I can count in multiples of 6, 7, 9, 25 and 1,000.
- I can find 1,000 more or less than a given number.
- I can count backwards through zero, including negative numbers.
- I can recognise place value in four-digit numbers.
- I can order and compare numbers beyond 1,000.
- I can round any number to the nearest 10, 100 or 1000.
- I can read Roman numerals to 100 (I to C).

Number – Addition and Subtraction

- I can add 4-digit numbers using the formal written method.
- I can subtract 4-digit numbers using the formal written method.
- I can estimate and use inverse operations to check answers to a calculation.
- I can solve addition and subtraction two-step problems, deciding which operations and methods to use and why.

Number – Multiplication and Division

- I can recall multiplication tables up to 12 × 12.
- I can use place value and number facts to carry out mental .
- I can recognise and use factor pairs and commutativity in mental calculations.
- I can multiply two-digit and three-digit numbers by a one-digit number using formal written layout.
- I can solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit.

Please help your child become familiar with their times tables.

1 x 1 = 1 2 x 1 = 2 3 x 1 = 3 4 x 1 = 4 5 x 1 = 5 6 x 1 = 6 7 x 1 = 7 8 x 1 = 8 9 x 1 = 9 10 x 1 = 10 11 x 1 = 11 12 x 1 = 12	1 x 2 = 2 2 x 2 = 4 3 x 2 = 6 4 x 2 = 8 5 x 2 = 10 6 x 2 = 12 7 x 2 = 14 8 x 2 = 16 9 x 2 = 18 10 x 2 = 20 11 x 2 = 22 12 x 2 = 24	1 x 3 = 3 2 x 3 = 6 3 x 3 = 9 4 x 3 = 12 5 x 3 = 15 6 x 3 = 18 7 x 3 = 21 8 x 3 = 24 9 x 3 = 27 10 x 3 = 30 11 x 3 = 33 12 x 3 = 36	1 x 4 = 4 2 x 4 = 8 3 x 4 = 12 4 x 4 = 16 5 x 4 = 20 6 x 4 = 24 7 x 4 = 28 8 x 4 = 32 9 x 4 = 36 10 x 4 = 40 11 x 4 = 44 12 x 4 = 48
1 x 5 = 5 2 x 5 = 10 3 x 5 = 15 4 x 5 = 20 5 x 5 = 25 6 x 5 = 30 7 x 5 = 35 8 x 5 = 40 9 x 5 = 45 10 x 5 = 50 11 x 5 = 55 12 x 5 = 60	1 x 6 = 6 2 x 6 = 12 3 x 6 = 18 4 x 6 = 24 5 x 6 = 30 6 x 6 = 36 7 x 6 = 42 8 x 6 = 48 9 x 6 = 54 10 x 6 = 60 11 x 6 = 66 12 x 6 = 72	1 x 7 = 7 2 x 7 = 14 3 x 7 = 21 4 x 7 = 28 5 x 7 = 35 6 x 7 = 42 7 x 7 = 49 8 x 7 = 56 9 x 7 = 63 10 x 7 = 70 11 x 7 = 77 12 x 7 = 84	1 x 8 = 8 2 x 8 = 16 3 x 8 = 24 4 x 8 = 32 5 x 8 = 40 6 x 8 = 48 7 x 8 = 56 8 x 8 = 64 9 x 8 = 72 10 x 8 = 80 11 x 8 = 88 12 x 8 = 96
1 x 9 = 9 2 x 9 = 18 3 x 9 = 27 4 x 9 = 36 5 x 9 = 45 6 x 9 = 54 7 x 9 = 63 8 x 9 = 72 9 x 9 = 81 10 x 9 = 90 11 x 9 = 99 12 x 9 = 108	1 x 10 = 10 2 x 10 = 20 3 x 10 = 30 4 x 10 = 40 5 x 10 = 50 6 x 10 = 60 7 x 10 = 70 8 x 10 = 80 9 x 10 = 90 10 x 10 = 100 11 x 10 = 110 12 x 10 = 120	1 x 11 = 11 2 x 11 = 22 3 x 11 = 33 4 x 11 = 44 5 x 11 = 55 6 x 11 = 66 7 x 11 = 77 8 x 11 = 88 9 x 11 = 99 10 x 11 = 110 11 x 11 = 121 12 x 11 = 132	1 x 12 = 12 2 x 12 = 24 3 x 12 = 36 4 x 12 = 48 5 x 12 = 60 6 x 12 = 72 7 x 12 = 84 8 x 12 = 96 9 x 12 = 108 10 x 12 = 120 11 x 12 = 132 12 x 12 = 144

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