

Newdale Primary
Maths Calculation Policy – Number Sense and Division

Development Matters 2020: Reception ELG

Expectations in number, Multiplication and division

Explore and represent patterns within numbers to 10 including evens and Odds, double facts and how quantities can be distributed equally.

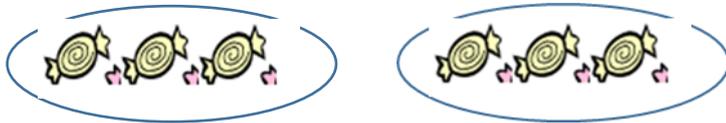
Use pictures to record what they have done

Representations of number:

Introduce the idea of Odd and Even and that an odd number ends in a 1,3,5,7,9 and an even number with a 0,2,4,6,8.

Understand that double means that there are 2 identical sets of an object.

Firstly, teach children to double groups of objects, then use mathematical equipment such as Numicon to double. Final children to use jottings to record their doubles and finally build up their ability to instantly recall of the doubles facts to double 5.



Introduce children to the idea of sharing into 2 groups/extend to more groups where appropriate. Practical activities and children to record using jottings. Explain to the children that when they share objects equally between 2 groups it is known as halving.

Share 8 objects



Key Vocabulary:

Odd/Even
doubling
sharing/sharing equally
halving
Groups of.
number patterns

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Maths Calculation Policy – Number Sense and Division

Year 1

Expectations in number and division

Solve one-step problems, involving division by calculating the answer using concrete objects and pictorial representations with the support of the teacher.

Counting on and back in 2s, 5s and 10s.

To be able to half numbers to 20 mentally.

Recognise, find and name a half as one of two equal parts of an object, shape or quantity.

Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Division at this stage should initially continue to be practical and exploratory so that the concept of division is embedded and that the children are confident in the manipulation of numbers, before moving on to pictorial and written.

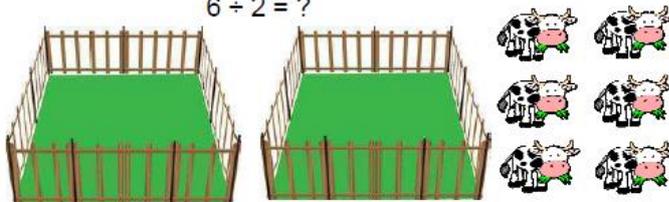
Representations of number:

Children will become familiar with the concept of division through sharing and grouping concrete objects equally.

Sharing

Can you share the cows equally between the two fields?

$6 \div 2 = ?$



$6 \div 2 = 3$

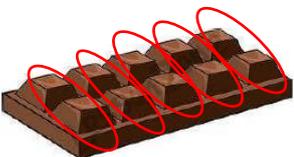
Grouping

Organise these children into groups of 3.



$9 \div 3 = 3$

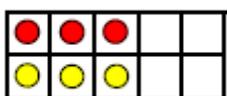
Arrays will also be used to help children visualise and understand division.



10 shared into 2 groups is 5.

Find and name a half of a quantity as two equal parts, or a quarter of a quantity as four equal parts.

Pupils should begin to explore finding simple fractions of quantities, such as $\frac{1}{2}$ and $\frac{1}{4}$. In particular, they will be expected to have some understanding of doubling and halving.



$3 + 3$ is the same as $2 \times 3 = 6$



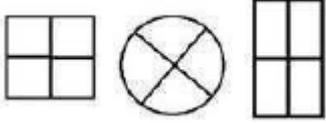
Half of 8 is 4.
 $8 \div 2 = 4$



Half of 4 is 2.
 $4 \div 2 = 2$

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Pupils should be shown that halving and dividing by 2 are the same.



Shade in $1/4$ of these shapes.

Four children share 12 toy cars equally. How many toy cars does each child get?



Remainders introduced as 'Left overs' *There are 7 cakes and 2 children. How many cakes will they each get? How many will be left over?*

Written strategies for dividing:

Introduce \div notation once division has been embedded.

Key Vocabulary:

- Odd, even
- Count in twos, threes, fives
- Count in tens (forwards from/backwards from)
- How many times?
- Lots of, groups of
- Once, twice, three times, five times
- Repeated addition
- Double, halve
- Share, share equally
- Group in pairs, threes, etc.
- Equal groups of, grouping
- Divide, divided by, left, left over

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Year 2

Expectations in number and division.

Key Skills: Calculate mathematical statements for division within the multiplication tables and write them using the \div and $=$ signs.

Know that division is the inverse of multiplication.

Understand that division must be done in the order of the question.

Solve problems involving division, involving materials and known facts, including problems in context.

Know division facts corresponding to the 2, 10 and 5 times tables – solve a variety of missing number problems.

Record using the correct division symbols \div and know that $\div 2$ is the same as halving.

Recognise, find, name and write fractions $1/3$, \square , $2/4$ and $3/4$ of a length, shape, set of objects or a quantity.

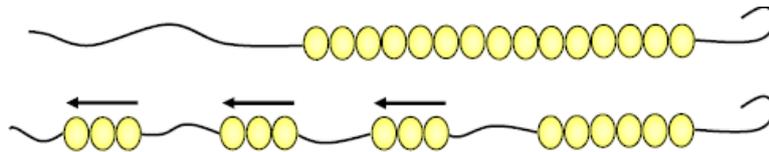
Representations of number / Written strategies for dividing:

The principles of division should continue to be taught through grouping and sharing.

Record using the \div symbol, with practical apparatus to continue to support the calculation and remove its abstract nature.

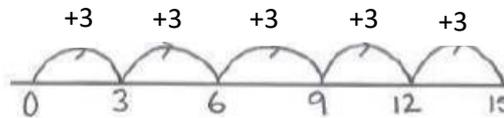
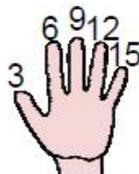
Grouping: When grouping, you count the number of groups you have made.

For instance, $15 \div 3 = 5$ can be viewed as 'How many groups of 3 are there in 15?'



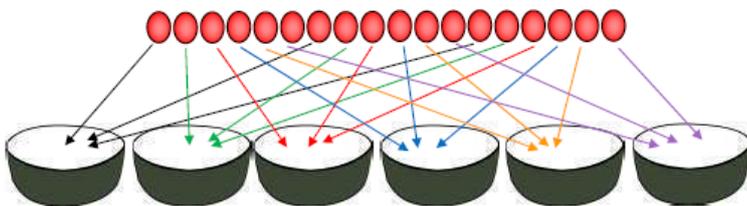
Blank number lines, or even fingers, can support the same line of thinking

Grouping/Repeated addition on a number line



These strategies will also help children make the link between multiplication and division.

Sharing



When sharing, we count the number of objects in each group.

$$18 \div 6 = ?$$

18 shared between 6 makes 3 in each group.

Show that multiplication of two numbers can be done in any order (commutative) but that division of one number by another cannot.

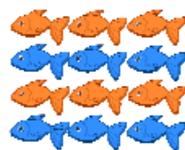
By creating, and looking at, arrays, pupils will begin to recognise the inverse relationship between multiplication and division.

3 groups of 4 = $3 \times 4 = 12$

4 groups of 3 = $4 \times 3 = 12$

12 divided into 4 groups = $12 \div 4 = 3$

12 divided into 3 groups = $12 \div 3 = 4$



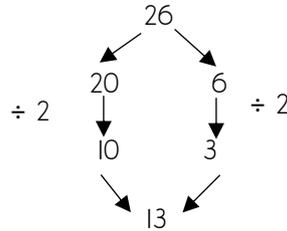
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Eventually, pupils should be able to answer questions like: "If $12 \times 2 = 24$, what is $24 \div 2$?"

Use partitioning as a strategy for halving

$$\text{Half } 26 = 20 \div 2 + 6 \div 2$$



Use partitioning to divide by 3, 5 and 10, using known multiplication facts to support.

Remainders renamed from 'Left overs' to formal **remainder** with **r** notation.

Key Vocabulary:

Numbers to one hundred / two hundred / one thousand

Hundreds

Partition, recombine

Hundred more/less

Count in 3s, 4s and so on

1/2/3 digit numbers

Place / place value

Stands for

Represents

Exchange

Groups of

Times

Once, twice, three times, ten times

Repeated addition

Divide, divided by, divided into

Share, share equally

Left, left over,

One each...two each, ten each

Groups in pairs, groups in threes, tens

Multiplication table

Multiplication fact, division fact

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Year 3

Expectations in number and division

Key Skills: Recall and use division facts corresponding to the 2,3, 4,5,8 and 10 times tables.

Use numbers that will generate remainders.

Use vocab of division

- Remainder
- Dividend (The amount that you want to divide up).
- Divisor (number you divide by)
- Quotient (The answer after you divide one number by another dividend \div divisor = quotient)

E.g. 12 (dividend) \div 3 (Divisor) = 4 (quotient)

Write and calculate mathematical statements for division using the \times facts known, using mental and progressing to written methods.

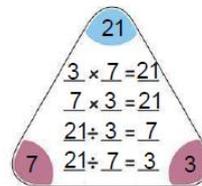
Recognise that tenths arise from \div dividing an object into 10 equal parts and \div 1 digit numbers or quantities by 10.

Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.

Representations of number:

Pupils should continue to develop their understanding of fact families.

It will also help them grasp that division are inverse operations.

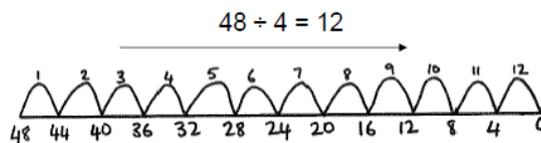


Pupils should also start to use facts that they know to make links with other facts,

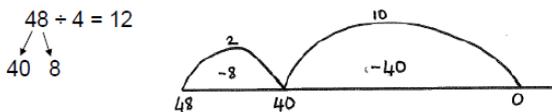
$$\text{If } 6 \div 3 = 2, \text{ then } 60 \div 3 = 20$$

Written strategies for dividing:

For division, pupils should develop a more efficient number line strategy, through the use of repeated subtraction. To begin with, the pupils may 'jump back' along the number line in smaller steps. Underline the divisor.



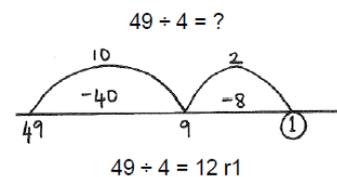
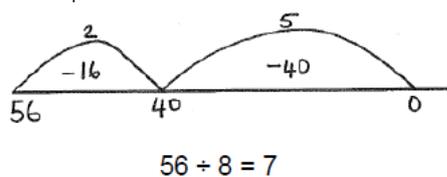
But, as their times table knowledge improves, they will be able partition the dividend (the number being divided) into more workable chunks.



The dividend in the example above has been partitioned into its tens and units. However, it is also possible to partition a number in a different way. This is important for pupils to be able to demonstrate a good sense of number.

$$56 \div 8 = ?$$

In this example, pupils may prefer to partition 56 into two numbers that they know are divisible by 8 (in this case, 40 and 16)



Pupils should also be consolidating the concept of remainders.

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Pupils may be presented with a calculation that they would like to partition in a different way.

$$26 \div 8 = ?$$
$$26 \div 8 = 3 \text{ r}2$$

Solve problems involving multiplication and division, including missing number problems, positive integer (whole number) scaling problems and correspondence problems (where n objects are linked to m objects).

$$32 \div \square = 4$$

$$\square \div 3 = 50$$

Problems where there is a remainder but the answer needs to be given as a whole, should also be provided.

"Pencils are sold in packs of 10. How many packs will I need to buy for 24 children?"

Key Vocabulary:

Multiples of four, eight, fifty and one hundred

Factor of

Remainder

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Year 4

Expectations in number and division

Key Skills: Know division facts corresponding to 12×12 .

Use place value, known and derived facts to divide mentally, including dividing by 1.

Divide any integer/whole number up to 1000 by 10

e.g. $900 \div 10 = 90$ because the digits move one place to the right

Understand how fractions relate to division

$\frac{1}{3}$ of 12 is the same as $12 \div 3$

Solve problems involving increasingly harder fractions to calculate quantities and fractions to divide quantities, including non-unit fractions where the answer is a whole number.

Recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10.

Find the effect of dividing a 1 or 2 digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.

Begin to recognise that division is non-commutative/must be done in the correct order.

Know that a number divided by 0 does not change.

Representations of number / Written strategies for dividing:

Recall division facts for multiplication tables up to 12×12 .

$$64 \div \square = 8$$

$$\square \div 11 = 66$$

Use place value, known and derived facts to divide mentally, including dividing by 1.

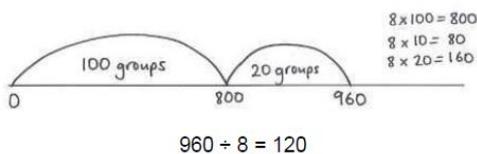
$63 \div 7 = 9$	↗	$630 \div 7 = 90$	$630 \div 90 = 7$
	→	$630 \div 70 = 9$	$630 \div 9 = 70$
	↘	$6300 \div 7 = 900$	$6300 \div 900 = 7$
	↙	$6300 \div 70 = 90$	$6300 \div 90 = 70$

Until they have a secure understanding of division as sharing and grouping, pupils should continue to explore the concept of division using a number line. As such, they should view a division calculation like this one:

$$960 \div 8 = ?$$

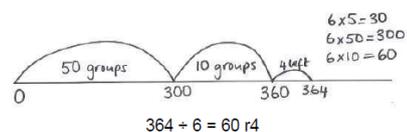
as: "How many 8s are there in 960?"

A well-established times table knowledge will help them identify larger amounts of the divisor to take away.



A further example with remainders:

$$364 \div 6 = ?$$



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Eventually, the formal short division method can be introduced. Manipulatives, such as place value counters, should be used at first for a more visual experience.

$369 \div 3 = 123$

	1	2	3		
3	100	10 10	1 1 1	represents	$\begin{array}{r} 123 \\ 3 \overline{)369} \end{array}$
3	100	10 10	1 1 1		
3	100	10 10	1 1 1		

Examples where exchange is required should also be provided:

$492 \div 4 = ?$

	1	2	3	
4	100	10 10	1	
4	100	10 10	1	
4	100	10 10	1	
4	100	10 10	1	
		10		↓
	1	2	3	
4	100	10 10	1 1 1	
4	100	10 10	1 1 1	
4	100	10 10	1 1 1	
4	100	10 10	1 1 1	

Pupils need to understand that the 10 place value counter has been exchanged into 1s.

$$\begin{array}{r} 123 \\ 4 \overline{)492} \end{array}$$

Pupils should have also encountered examples where there is a remainder. Initially, this idea can be introduced using simple calculations where knowledge of their times tables facts will suffice.

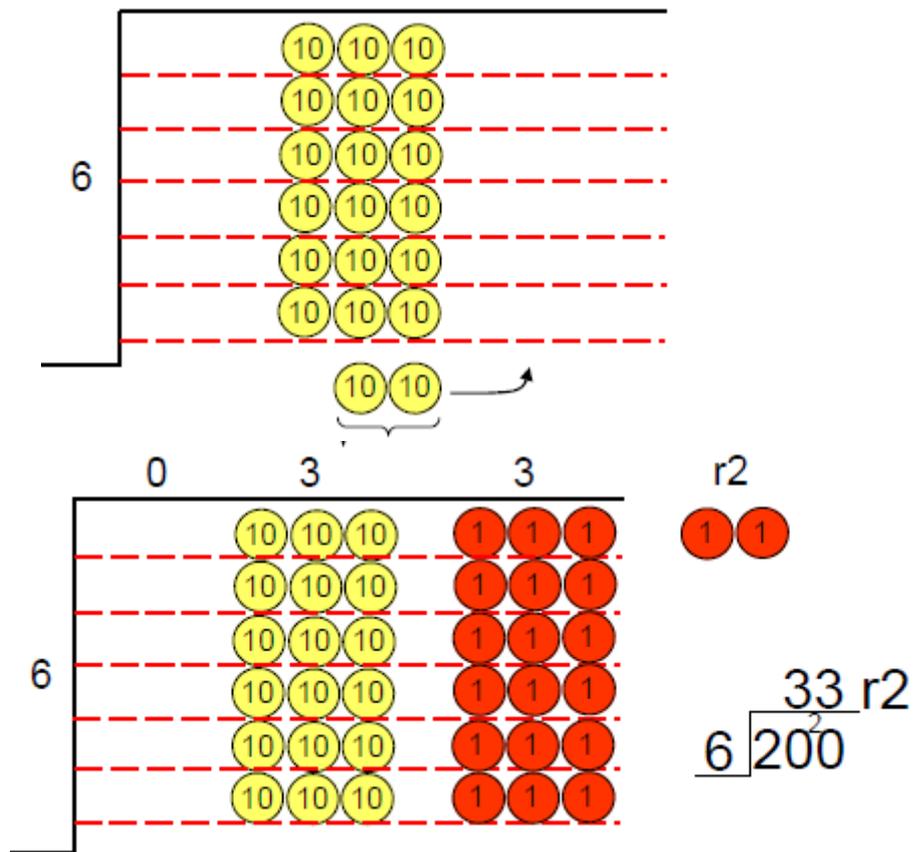
$17 \div 4 = 4 \text{ r}1$

They should then progress to bigger numbers:

$200 \div 6 = ?$

6	100	100	}	→
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Key Vocabulary:

Multiplication facts (up to 12x12)

Division facts

Inverse

Derive

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Year 5

Expectations in number and division

Solve problems involving division where larger numbers are used by decomposing them into their factors.

Use the relationship between multiplication and division and multiplication facts to 12×12

Mentally divide up to 10,000 by 10 and 100.

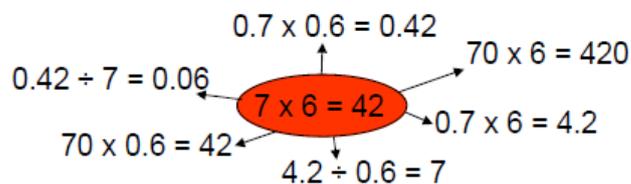
Divide whole numbers and those involving decimals by 10, 100 and 1000.

Divide numbers up to 4 digits by a 1 digit number, using the formal written method for short division and interpret remainders in the context of the question.

Solve problems involving a combination of division, multiplication, addition and subtraction, understanding the meaning of the equals sign.

Representations of number / Written strategies for dividing:

Pupils should be able to derive division facts for both whole numbers, and those with decimals.



Divide numbers up to four digits by a one-digit number using the formal written method of short division, and interpret remainders appropriately for the context.

With regards to division, children should continue to develop the **short division** method that they began in Year 4.

$$943 \div 7 = ?$$

$$\begin{array}{r} 1 \\ 7 \overline{) 943} \end{array}$$

Once the calculation has been set out in the appropriate way, the first thing to establish is how many 7s there are in 9. The answer of 1 should be placed on the line above. However, when 9 is divided by 7, there is still 2 left over; we carry this remainder into the next part, as shown.

$$\begin{array}{r} 13 \\ 7 \overline{) 943} \end{array}$$

The children should now think about how many 7s there are in 24. There are 3 lots of 7 in 24, with 3 remaining.

$$\begin{array}{r} 134 \text{ r}6 \\ 7 \overline{) 943} \end{array}$$

7 goes into 33 four times, with 6 remaining.

$$943 \div 7 = 134 \text{ r}6$$

A practical example of short division using place value counters is explained in the Year 4 division policy.

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Pupils will also have to express the remainder in a variety of ways, according to the context of the question. In the example just given, it is possible to present it as a fraction.

$$\begin{array}{r} 134 \text{ r}6 \\ 7 \overline{)943} \end{array}$$

$$943 \div 7 = 134 \text{ and } 6/7\text{s}$$

Some remainders can be represented as a decimal instead:

$$\begin{array}{r} 113 \text{ r}2 \\ 8 \overline{)906} \end{array}$$

$$\begin{aligned} 906 \div 8 &= 113 \text{ and } 2/8\text{s} \\ &= 113.25 \end{aligned}$$

Key Vocabulary:

Composite numbers

Formal written method

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Year 6

Expectations in number and division

Divide numbers up to 4 digits by a 2 digit whole number using the formal written method of long division.

Divide numbers up to 4 digits by a 2 digit whole number and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.

Associate fractions 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 2 decimal places.

Express remainders as fractions and decimals.

Explain the effect of dividing by 1000

Divide proper fractions by whole numbers e.g.

$$1/3 \div 2 = 1/6$$

Representations of number/ Written strategies for dividing:

Divide numbers with up to four digits by a two-digit whole number using the formal written method of long division.

When dividing by a two-digit number, children should use a method called long division. The steps required to do this are outlined below:

			2			
1	2	3	4	6	8	

- A) How many 12s are there in 3? Since 3 is smaller than 12, there are no 12s in 3.
 B) So how many 12s are there in 34? We can work out that there are 2 lots of 12 in 34. We write this number above the 4.

			2			
1	2	3	4	6	8	
			2	4		
			1	0		

- (C) We then need to write down the exact amount that 2×12 comes to underneath the 34, so that we can see how many are left. $34 - 24 = 10$

			2	8			
1	2	3	4	6	8		
			2	4			
			1	0	6		

$9 \times 12 = 108$

$8 \times 12 = 96$

- (D) Bringing down the next digit, we now need to find out how many 12s there are in 106. Separate jottings on the side may be helpful. The answer of 8 is written above the 6.

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

$9 \times 12 = 108$

$8 \times 12 = 96$

- (E) Having established that there are 8 lots of 12 in 106, we need to work out how many we have left over. $8 \times 12 = 96$, leaving a remainder of 10.

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

(F) Again, we bring down the next digit in the question (8). Now we have to calculate how many 12s there are in 108. The answer of 9 is written above the 8.

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

(G) $12 \times 9 = 108$ which leaves us with no remainders.
So, $3468 \div 12 = 289$

Here is another example where we are left with a remainder:

$$9189 \div 36 = ?$$

1) There are 2 lots of 36 in 91, with 19 left over.

			2		
3	6	9	1	8	9
		7	2		
		1	9		

2) There are 5 lots of 36 in 198, with 18 left over.

			2	5	
3	6	9	1	8	9
		7	2		
		1	9	8	
		1	8	0	
			1	8	

$36 \times 10 = 360$

$36 \times 5 = 180$

			2	5	5	r	9
3	6	9	1	8	9		
		7	2				
		1	9	8			
		1	8	0			
			1	8	9		
			1	8	0		
							9

3) There are 5 lots of 36 in 189 with 9 remaining.
So, $9189 \div 36 = 255 \text{ r}9$

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Interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.

Pupils should have an understanding of how to turn a remainder into a fraction or decimal.

this example... $19 \div 6 = 3 \text{ r}1$

...the remainder can be turned into a fraction by continuing to divide it by 6.

$$19 \div 6 = 3 \frac{1}{6}$$

For some examples, the fraction can be simplified.:

$$26 \div 4 = 6 \text{ r}2$$

$$26 \div 4 = 6 \frac{2}{4}$$

$$26 \div 4 = 6 \frac{1}{2}$$

Pupils can also express a remainder as a decimal. When using either short or long multiplication, by adding a decimal point and a zero to the number being divided, we are able to carry on the calculation.

They must also remember to add a decimal point to the answer line, in the same position as the one in the question.

It might be that the pupils will be presented with an example where they need to add more than one zero on to the number being divided.

Examples where the numbers after the decimal point carry on indefinitely should not be given to the pupils at this stage to calculate. They can discuss as a teaching point.

Short and long division can be used to divide decimal numbers as well; pupils need to remember to put the decimal point in exactly the same position on the answer line as it is in the question.

$$53.73 \div 3 = 17.91$$

$$85.34 \div 17 = 5.02$$

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Key Vocabulary:

Order of operations

Digit total

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New maths vocabulary for EYFS

Number and place value	Addition and subtraction	Multipl cation and division	Measure	Geometry (position and direction)	Geometry (properties of shape)	General
zero number one, two, three ... to twenty and beyond teens numbers, eleven, twelve ... twenty none how many ...? count, count (up) to, count on (from, to), count back (from, to) count in ones, twos, fives, tens is the same as more, less odd, even few pattern, pair ones, tens digit the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more one less, ten less compare order, size	add, more, and make, sum, total altogether double one more, two more ... ten more how many more to make ...? how many more is ... than ...? how much more is ...? take away how many are left/left over? how many have gone? one less, two less, ten less ... how many fewer is ... than ...? how much less is ...? difference between	sharing doublin g halving number pattern s	Measure, size, compare guess, estimate enough, not enough too much, too little too many, too few nearly, close to, about the same as just over, just under metre length, height, width, depth long, short, tall high, low, wide, narrow thick, thin longer, shorter, taller, higher ... and so on longest, shortest, tallest, highest ... and so on far, near, close weigh, weighs, balances heavy, light heavier than, lighter than heaviest, lightest scales full, empty, half full holds, container time, days of the week, Monday, Tuesday ... day, week birthday, holiday morning, afternoon, evening, night bedtime, dinner time, playtime today, yesterday, tomorrow before, after	position over, under above, below top, bottom, side on, in outside, inside around in front, behind front, back beside, next to opposite apart between middle, edge corner direction left, right up, down forwards, backwards, sideways across next to, close, near, far along through to, from, towards, away from	shape, pattern flat curved, straight round hollow, solid sort make, build, draw Size bigger, larger, smaller symmetrical pattern, repeating pattern match, corner, side rectangle (including square) circle triangle, face, edge, vertex, vertices cube pyramid sphere	pattern puzzle what could we try next? how did you work it out? recognis e describe draw compare sort Find, choose, collect, use, make, build, Tell me, describe , pick out, talk about, explain,

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Maths Calculation Policy – Number Sense and Division



first, second, third... twentieth last, last but one before, after next, between guess, how many ...? estimate nearly, close to about the same as just over, just under too many, too few enough, not enough			next, last now, soon, early, late quick, quicker, quickest, quickly slow, slower, slowest, slowly old, older, oldest new, newer, newest takes longer, takes less time hour, o'clock clock, watch, hands, money coin penny, pence, pound price, cost buy, sell, spend, spent, pay	movement slide roll turn stretch, bend whole turn, half turn	cone	show me
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New instructional vocabulary for EYFS

Listen join in say think imagine remember start from start with start at	look at point to show me put place fit arrange rearrange change	change over split separate carry on continue repeat what comes next? find	choose collect use make build tell me describe pick out talk about	explain read write trace copy complete finish end fill in	shade colour
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Newdale Primary
Maths Calculation Policy – Number Sense and Division



New maths vocabulary for Year 1 (Many overlaps with EYFS.....Red vocab is Year 1 specific)

Number and place value	Addition and subtraction	Multiplication and division	Measure	Geometry (position and direction)	Geometry (properties of shape)	Fractions	General/problem solving
Number Zero, one, two, three to twenty, and beyond None Count (on/up/to/from/down/ forwards/backwards) Before, after More, most , less, many , few, fewer, least , fewest, smallest, greater, lesser Equal to , the same as, equivalent to Odd, even Pair Units, ones, tens Ten more/less Digit Numeral Figure(s) Compare (In) order/a different order Size Value Between, halfway between	Number bonds, number line Add, addition , more, plus, make, sum, total, altogether Inverse Double, near double Half, halve Equals, is the same as (including equals sign) Difference between How many more to make..?, how many more is...than..?, how much more is..? Subtract , take away, minus How many fewer is...than..?, how much less is..? Bar	Odd, even Count in twos, threes, fives Count in tens (forwards from/backwards from) How many times? Lots of, groups of Once, twice, three times, five times Multiplication Multiple of , times, multiply, multiply by Repeated addition Array, row, column Double, halve Share, share equally Group in pairs, threes, etc. Equal groups of , grouping Divide, divided by, left, left over	Full, half full, empty, measurement Holds Container, capacity, volume Weigh, weighs, balances Heavy, heavier, heaviest, light, lighter, lightest Scales, more than, less than Time Days of the week: Monday, Tuesday, etc. Seasons: spring, summer, autumn, winter Day, week, months of the year, weekend Birthday, holiday Morning, afternoon, evening, night, midnight , Bedtime, dinnertime, playtime Today, yesterday, tomorrow Before, after Next, last Now, soon, early, earlier, late , later Quick, quicker, quickest, quickly, fast, faster, fastest, slow, slower, slowest, slowly Old, older, oldest, new, newer, newest Takes longer, takes less time Hour, o'clock, half past, quarter past, quarter to Clock face , watch, hour / minute hands How long ago?, how long will it be to...?, how long will it take to...?, how often? Always, never, often, sometimes, usually Once, twice First, second, third, etc. Estimate, close to, about the same as, just over, just under Too many, too few, not enough, enough Length, width, height, depth Long, longer, longest, short, shorter shortest, tall, taller, tallest, high, higher, highest Low, wide, narrow, deep, shallow, thick, thin	Position Over, under, underneath , above, below, top, bottom, side on, in, outside, inside around, in front, behind Front, back Before, after Beside, next to, Opposite Apart Between, middle, edge, centre Corner Direction Journey Left, right, up, down, forwards, backwards, sideways Across Close, far, near	Group, sort Cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square Shape Flat, curved, straight, round Hollow, solid Corner (point, pointed) Face, side, edge Make, build, draw Symmetry Symmetrical Point, pointed	Whole Equal parts, four equal parts One half, two halves A quarter, two quarters Equal part, Equal grouping, Equal sharing	Listen, join in Say, think, imagine, remember Start from, start with, start at Look at, point to Put, place, fit Arrange, rearrange Change, change over Split, separate Carry on, continue, repeat, what comes next? Read, write, record, trace, copy, complete, finish, end Fill in, shade, colour, tick, cross, draw, draw a line between, join (up), ring, arrow Cost Count, work out, answer, check same number(s)/different number(s)/missing number(s) Number facts, number line, number track, number square, number cards

Newdale Primary

Maths Calculation Policy – Number Sense and Division



Above, below roughly	Number bonds/ pairs Missing number		Far, near, close Metre, ruler, metre stick Centimetre, metre Kilogram, half a kilogram Litre, half a litre Money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, change, dear(er), costs more, costs less, cheaper, costs the same as How much?, how many? Total	Along, through To, from, towards, away from Movement Slide, roll, turn, whole turn, half turn Stretch, bend		counters, cubes, blocks, rods, die, dice, dominoes, pegs, peg board, bar model Same way, different way, best way, another way In order, in a different order Not all, every, each
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New instructional vocabulary for Year 1 (Many overlaps with EYFS.....Red vocab is new for Year 1)

listen join in say think imagine remember start from start with start at	look at point to show me put place fit arrange rearrange change	change over split separate carry on continue repeat what comes next? find between	choose collect use make build tell me describe pick out talk about	explain show me read write record trace copy complete finish	end fill in shade colour tick cross draw draw a line	join (up) ring arrow
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Newdale Primary
Maths Calculation Policy – Number Sense and Division



New maths vocabulary for Year 2						
Number and place value	Measure	Geometry (position and direction)	Geometry (properties of shape)	Fractions	Data/statistics	General/problem solving
Numbers to one hundred / two hundred / one thousand Hundreds Partition, recombine Hundred more/less Count in 3s, 4s and so on Sequence Continue Predict 1/2/3 digit numbers Place / place value Stands for Represents Exchange Twenty first.....twenty second..... One hundred more.....one hundred less Number facts Tens boundary Groups of Times Once, twice, three times, ten times Repeated addition Divide, divided by, divided into Share, share equally Left, left over, One each....two each, ten each Groups in pairs, groups in threes, tens Row Column Multiplication table Multiplication fact, division fact Greater than / less than	Quarter past/to m/km, g/kg, ml/l Temperature (degrees) Measuring scale Further, furthest Tape measure Gram Millilitre Contains 5,10, 15....minutes past Digital / analogue clock, watch, timer Seconds Bought sold	Rotation Clockwise, anticlockwise Straight line Ninety degree turn, right angle Higher, lower Right angle Straight line	Size Bigger, larger, smaller Symmetrical, line of symmetry Fold Match Mirror line, reflection Pattern, repeating pattern Surface Line symmetry Circular Rectangular Pentagon Hexagon Octagon	Three quarters, one third, a third Equivalence, equivalent Equivalent fraction Mixed number Numerator Denominator Two halves Two quarters One of three equal parts	Count, tally, sort Vote Graph, block graph, pictogram, Represent Group, set, list, table Label, title Most popular, most common, least popular, least common	Predict Describe the pattern, describe the rule Find, find all, find different Investigate Show how you Explain your method Mental calculation Written calculation

Newdale Primary

Maths Calculation Policy – Number Sense and Division



New instructional vocabulary for Year 2 (Many overlaps with previous years.....Red vocab is new for Year 2)

Listen join in say recite think imagine remember start from start with	start at look at point to show me put place fit arrange rearrange	change change over split separate carry on continue repeat what comes next? Predict	describe the pattern describe the rule find find all find different investigate choose decide collect	use make build tell me describe name pick out discuss talk about	explain explain your method explain how you got your answer give an example of... show how you...
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New maths vocabulary for Year 3

Number and place value	Addition and subtraction	Multiplication and division	Measure	Geometry (position and direction)	Geometry (properties of shape)	Fractions	Data / Statistics
Numbers to one thousand, Count in Eights, fifties and so on to hundreds Relationship Roman numerals One hundred more, one hundred less Approximate, approximately Round, nearest, round to the nearest ten, hundred	Column addition and subtraction	Product Multiples of four, eight, fifty and one hundred Scale up Factor of Remainder	Leap year Twelve-hour/twenty-four-hour clock Divisions (measuring scale) Approximately Millimetre, kilometre, mile Distance apart...between....to....from Perimeter Centigrade Century Calendar Earliest Latest	Greater/less than ninety degrees Orientation (same orientation, different orientation) Compass point North, south, east, West N,S,E,W Horizontal,	perpendicular and parallel lines perimeter Pentagonal Hexagonal Octagonal Quadrilateral Right- angles Hemisphere Prism Triangular prism	Numerator, denominator Unit fraction, non-unit fraction Compare and order Tenths Sixths, sevenths, eights, tenths.....	Chart, bar chart, frequency table, Carroll diagram, Venn diagram Axis, axes Diagram

Newdale Primary

Maths Calculation Policy – Number Sense and Division



Round up, round down			a.m / p.m. 12 / 24 hour clock time	vertical, diagonal Angle is a greater / smaller angle than Acute Obtuse			
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New maths vocabulary for Year 3 (Many overlaps with previous years.....Red vocab is new for Year 3)

listen join in say recite think imagine remember start from start with	start at look at point to show me put place fit arrange rearrange	change change over split separate carry on continue repeat what comes next? Predict	describe the pattern describe the rule find find all find different investigate choose decide	collect use make build tell me describe name pick out discuss	talk about explain explain your method explain how you got your answer give an example of... show how you... show your working	read write record write in figures
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Newdale Primary
Maths Calculation Policy – Number Sense and Division



New maths vocabulary for Year 4

Number and place value	Multiplication and division	Measure	Geometry (position and direction)	Geometry (properties of shape)	Fractions	Data / Statistics
Tenths, hundredths, hundred thousand, million Decimal (places) Round (to nearest) Thousand more/less than Negative integers Integer Negative numbers Count through zero Count in sixes, sevens, nines, twenty fives Next, consecutive Roman numerals	Multiplication facts (up to 12x12) Division facts Inverse Derive Cube Cubed	Convert Unit, standard unit Metric unit Breadth Edge Area Covers Square cm Mass: big, bigger / small, smaller Weight: heavy / light, heavier / lighter/ heaviest / lightest Measuring cylinder Leap year, millennium Noon, date of birth Timetable, arrive, depart	Coordinates Translate, Translation Rotate, rotation degree Quadrant x-axis, y-axis Perimeter and area North-east, north-west, south-east, south-west, NE, NW, SE, SW	Quadrilaterals Equilateral, isosceles and scalene Triangles Right angle, acute and obtuse angles Line Construct Angle Sketch Centre Square- based Reflect Reflection Regular, irregular 2-D Oblong Heptagon Parallelogram, rhombus, trapezium Polygon Spherical Cylindrical Tetrahedron Polyhedron	Equivalent decimals and fractions, hundredths Decimal fraction, decimal point, decimal place, Decimal equivalent Proportion	Continuous data Line graph Survey Questionnaire
						General/problem solving
						Justify Make a statement

Newdale Primary

Maths Calculation Policy – Number Sense and Division



New maths vocabulary for Year 4 (Many overlaps with previous years.....Red vocab is new for Year 4)

listen join in say recite think imagine remember start from start with start at look at point to show me	put place arrange rearrange change change over split separate carry on continue repeat what comes next? describe the pattern	Predict describe the rule find find all find different investigate choose decide collect use make build construct tell me	describe name pick out discuss talk about explain explain your method explain how you got your answer give an example of... show how you... show your working justify make a statement read	write record write in figures present represent interpret trace copy complete finish end fill in shade colour	label plot tick cross draw sketch draw a line between join (up) ring arrow cost count tally	calculate work out solve investigate question answer check
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Newdale Primary
Maths Calculation Policy – Number Sense and Division



New maths vocabulary for Year 5

Number and place value	Addition and subtraction	Multiplication and division	Measure	Geometry (position and direction)	Geometry (properties of shape)	Fractions, Decimals and Percentages	Data/statistics
Powers of 10 Formula Greater than / less than \geq and \leq Divisibility Square number Prime number Ascending order Descending order Ten thousand	Efficient written method Ones boundary Tenths boundary	Factor pairs Composite numbers, prime number, prime factors, square number, cubed number Formal written method	Volume Imperial units, metric units Square metre, square millimetre Pint, gallon Discount, currency	Reflex angle Dimensions Radius Diameter Congruent Axis of symmetry Reflective symmetry x-axis, y-axis, quadrant octahedron	Regular and irregular Polygons	Proper fractions, improper fractions, mixed numbers Percentage Half, quarter, fifth, two fifths, four fifths Ratio, proportion Equivalent, reduced to, cancel In every, for every Percentage, per cent %	Database Bar line chart Line graph Maximum / minimum value Outcome

New maths vocabulary for Year 5 (Many overlaps with previous years.....Red vocab is new for Year 5)

listen join in say recite think imagine remember start from start with start at look at point to show me put	place arrange rearrange change change over split separate carry on continue repeat what comes next? predict describe the pattern describe the rule	find find all find different investigate choose decide collect use make build construct	bisect tell me describe name pick out identify discuss talk about explain explain your method/answer/ reasoning give an example of... show how you...	show your working justify make a statement read write record write in figures present represent interpret trace copy	complete finish end fill in shade colour label plot tick cross draw sketch draw a line between	question answer check join (up) ring arrow cost count tally calculate work out solve convert investigate
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Newdale Primary
Maths Calculation Policy – Number Sense and Division



New maths vocabulary for Year 6

Number and place value	Addition and subtraction	Multiplication and division	Geometry (position and direction)	Measures	Geometry (properties of shape)	Fractions, decimals and percentages	Algebra	Data/statistics
Numbers to ten million	Order of operations	Order of operations Common factors, common multiples Factorise Prime factor Digit total	Four quadrants (for coordinates)	Yard, foot, feet, inch, inches Tonne, pound, ounce Centilitre, Cubic cm Cubic m Cubic mm Cubic km GMT (Greenwich Mean time) BST (British Summer time) IDL (International date line) Profit, loss	Vertically opposite (angles) Circumference, radius, diameter Concentric, arc, Intersecting, intersection Dodecahedron Reflex	Degree of accuracy Simplify Ratio	Linear number sequence Substitute Variables Symbol Known values	Mean (mode, median, range as estimate for this) Pie chart Construct Distribution

New maths vocabulary for Year 6 (Many overlaps with previous years.....Red vocab is new for Year 6)

listen join in say recite think imagine remember start from start with start at	arrange rearrange change change over adjusting adjust split separate carry on continue	Predict describe the pattern describe the rule find find all find different investigate choose decide collect	make build construct bisect tell me define describe name pick out identify	explain your method/answer/reasoning give an example of... show how you... show your working justify make a statement read write record	represent interpret express trace copy complete finish end fill in shade	tick cross draw sketch draw a line between join (up) ring arrow cost	solve convert investigate interrogate (data) question prove answer check
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Newdale Primary
Maths Calculation Policy – Number Sense and Division



look at point to show me put place	repeat what comes next?	use	discuss talk about explain	write in figures present	colour label plot	count tally calculate work out	
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