Division

Division - Stage 1

Solve one-step division problems using concrete objects, pictorial representations, and arrays with the support of the teacher.

1. Arrays

There are ___ groups of ___ dogs.

There are ___ groups of ____ pandas.

2. Guided number line

$50 \div 10 = 5$

0   10   20   30   40   50

3. Draw own number line

$20 \div 5 = 4$

1   2   3   4

0   5   10   15   20

Division - Stage 2

Solve problems involving division using mental methods and multiplication and division facts.

Divide mentally and relate to multiplication

1. Multiplication and division

5 x 2 = 10

10 ÷ 2 = 5

2 x 5 = 10

10 ÷ 5 = 2

5 x 10 = 50

50 ÷ 10 = 5

10 x 5 = 50

50 ÷ 5 = 10

2. Mentally ÷ 2 ÷ 5 ÷10

2, 4, 6 …

5, 10, 15 …

10, 20, 30 …

Divide using a number line

1. Number line

20 ÷ 5 = 4

0	4	8	12	16	20
	1	2	3	4	5
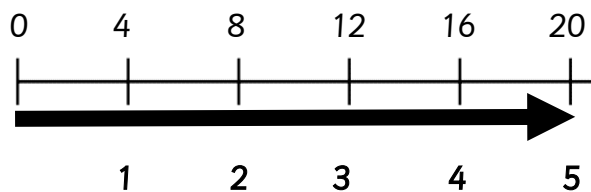
2. Number line with remainders

9 ÷ 4 = 2 r1
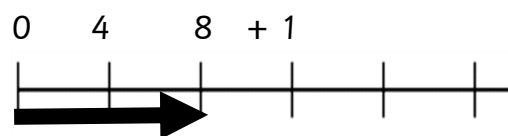
0   4   8   + 1

Division - Stage 3

Write and calculate mathematical statements for division using mental and progressing to formal written methods.

1. Dividing mentally and relate to multiplication

3 x 6 = 18
18 ÷3 = 6
6 x 3 = 18
18 ÷ 6 = 3

7 x 9 = 63
63 ÷9 = 7
9 x 7 = 63
63 ÷ 7 = 9

2. Tens/ones ÷ ones exchanging

52

40   12

÷ 4   ÷ 4

10   3

10 + 3 = 13

52

?	?	?	?

3. Tens/Ones ÷ ones with exchanging and remainder

53 ÷ 4 = 13 r1

53

40   13

÷ 4   12   1

10   ÷ 4

3

53

13	13	13	13	1
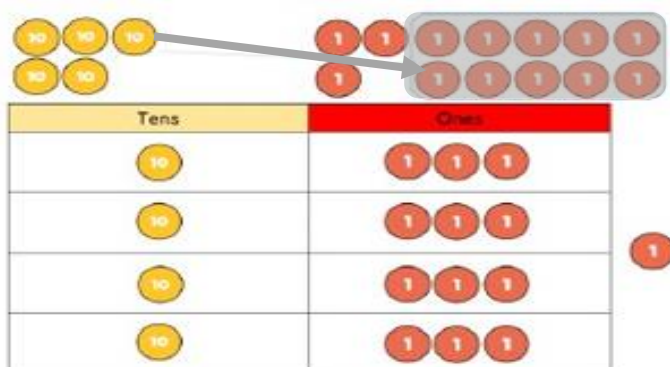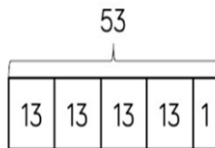
Tens	Ones

4. Hundreds/tens/ones ÷ ones - introduce short division layout

	2	1	2
2	4	2	4

Key vocabulary

Share, share equally, one each, two each..., group, groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over.
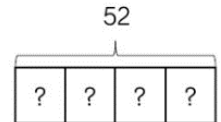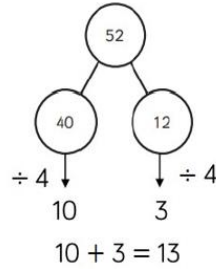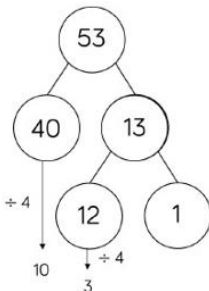
Division - Stage 4

Recall multiplication and division facts for multiplication tables u to 12 x 12 and become fluent in the formal written method of short division.

Short division

1. No carrying

2. Carrying

$$2\;\overline{\smash{)}4\;2} = 2\;1$$

$$3\;\overline{\smash{)}4\;\,_12} = 1\;4$$

3. Remainders

$$4\;\overline{\smash{)}6\;\,_23} = 1\;5\;r3$$

Division - Stage 5

Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.

Short division

1. Remainder

	3	5	7	÷	5
	0	7	1	r2	
5	3	5	7		

2. Fraction

	3	5	7	÷	5
	0	7	1	$\frac{2}{5}$	
5	3	5	7		

3. Decimal

	3	5	7	÷	5
	0	7	1	.4	
5	3	5	7	^{2}0	

Long division

4. ÷11 and ÷12

4848 ÷12 = 404					
		0	4	0	4
1	2	4	8	4	8
	-	4	8		
			0	4	
				4	8
		-		4	8

Times tables

12 x 1=12

12 x 2=24

12 x 3=36

12x 4=48

5. For the less able. Long division for one-digit divisors

728÷4= 182			
		1	8	2
4	7	2	8
-	4		
	3	2	
-	3	2	
		0	8

Key vocabulary

Share, share equally, one each, two each..., group, groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, carry, remainder, multiple, divisible by, factor, quotient, prime number, prime factors, composite number (non -prime).

Division - Stage 6

Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and short division.

Short Division

1. Decimal ÷ integer

	£	3	.2	4
3	£	9	.7	¹2

£3.24

Context of money

e.g., **£9.72 ÷3 = £3.24**

Long Division

2- digit divisor

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

= **265**

LONG DIVISION – DIVIDE, MULTIPLY, SUBTRACT, BRING DOWN.

Times Tables

	10 x	5 x	15 x
1 x	10	5	15
2 x	20	10	30
3x	30	15	45
4 x	40	20	60
5 x	50	25	75
6 x	60	30	90
7 x	70	35	105
8 x	80	40	120

Key vocabulary

Share, share equally, one each, two each…, group, groups of, lots of, array, divide, divided by, divided into, division, grouping, number line, left, left over, inverse, short division, carry, remainder, multiple, divisible by, factor, quotient, prime number, prime factors, composite number (non -prime), common factor.