Hazelbury Primary School

Calculation Policy

Key Stage 1 – Addition

Y1	Y2
Through practical activities and meaningful contexts using concrete objects, pictorial representations and informal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y1

Through practical activities and meaningful contexts using concrete objects, pictorial representations and informal written methods:

- Recall number bonds to 20 and within 20.

- Derive related facts to 20.

  $\square$ = 5 + 4

  5 + 4 = $\square$

  $\square$ + 4 = 9

  $\square$ + $\square$ = 9

- Add one digit and two digit numbers to 20, including zero, including using a number line

$6+3=9$
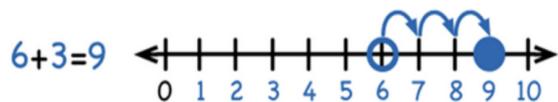
- Solve one step problems involving addition including missing numbers

20 = 15 + $\square$

- Read, write and interpret mathematical statement involving addition (+) and equals (=).

7 + 5 = 12

  Seven plus five equals twelve

- See also "Fractions" on page 14

Y2

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Fluently recall of bonds to 20 and within 20, recognising their associated additive relationships

7 + 3 = 10 therefore 17 + 3 = 20

14 + 3 = 17 therefore 3 + 14 = 17, 17 – 14 = 3 and 17 – 3 = 14

- Derive and use related facts up to 100.

$\square$ = 40 + 55

55 + 40 = $\square$

$\square$ + 40 = 95

$\square$ + $\square$ = 95

- Add 2 two digit numbers using efficient strategies, explaining their method verbally, using concrete objects, pictorial representations and mentally.

Fifty plus twenty-four equals seventy-four
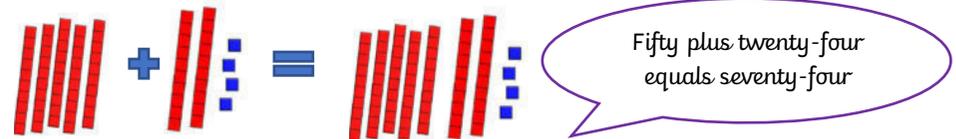
- Show that addition of two numbers can be done in any order (commutative).

12 + 5 = 17   5 + 12 = 5

- Recognise and use the inverse relationship between addition and subtraction

25 + 10 = 35   10 + 25 = 35   35 – 25 = 10   35 – 10 = 25

- Progressing to partitioned columnar method (in preparation for year 3).
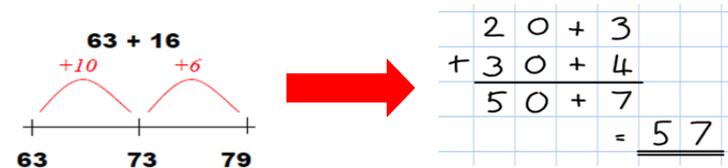
- See also "Fractions" on page 14

Key Stage 2 – Addition

Y3	Y4
Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y3

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Solve missing number problems for addition

$340 + \square = 450$

$450 - 340 = 110$

- Solve word problems for addition

"If Anna has three hundred points and wins another two hundred and fifteen points, how many points does she have altogether?"

$300 + 215 = 515$

	3	0	0
+	2	1	5
	5	1	5

- Estimate the answer to a calculation and use the inverse operation to check answers

$748 + 249 = 997$
$997 - 249 = 748$

$748 + 249 = 997$

	7	4	8
+	2	4	9
	9	9	7
		1	

- Add numbers mentally including 3-digit numbers and ones
- Add numbers mentally including 3-digit numbers and tens
- Add numbers mentally including 3-digit numbers and hundreds

- See also "Fractions" on page 15

## Y4

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Mentally add pairs of 2-digit numbers, 3-digit numbers and ones, 3 digit numbers and tens and three digit numbers and hundreds

- Add numbers with up to 4 digits using formal written methods

$3842 + 1483 = 5325$

	3	8	4	2
+	1	4	8	3
	5	3	2	5
		1	1	

- Use inverses to check answers to calculations and estimate to check answers

$1627 + 738 = 2365$
$2365 - 738 = 1627$

	1	6	2	7
+		7	3	8
	2	3	6	5
		1		1

- Solve two step addition problems by selecting the correct method

> There are 45 counters in a box and 98 are added. The next day, a further 138 are added. How many are there altogether?

	4	5
+	9	8
1	4	3
	1	

	1	4	3
+	1	3	8
	2	8	1
		1	

- See also "Fractions" on page 15

Key Stage 2 – Addition

Y5	Y6
Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y5

- Solve multi-step addition problems in context deciding which operation and method to use and why

> There are 198 counters in a box and 258 are added. The next day, a further 938 are added. How many are there altogether?

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

1 1   1

- Use rounding to check answers to calculations

- Add mentally using increasingly large numbers

- Add numbers with more than 4 digits using formal methods

$$45673 + 93812 = 139485$$

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

1

- See also "Fractions" on page 16

Y6

- Use estimation to check answers to calculations

- Solve multi-step problems involving any operation

> Sarah bought 166 apples on Tuesday and a further 273 apples on Wednesday. She then sold 295 apples. How many apples did she have left?

$$166 + 273 = 439 \qquad 439 - 295 = 144$$

$$
\begin{array}{r}
1\ 6\ 6 \\
+\ 2\ 7\ 3 \\
\hline
4\ 3\ 9 \\
\end{array}
\qquad
\begin{array}{r}
4\ 3\ 9 \\
-\ 2\ 9\ 5 \\
\hline
1\ 4\ 4 \\
\end{array}
$$

1

- Work out mixed calculations by following the correct order of operations

B	Brackets
I	Indices
D	Division
M	Multiplication
A	Addition
S	Subtraction

- Calculate mentally including with mixed operations and large numbers

- See also "Fractions" on page 16

Key Stage 1 – Subtraction

Y1	Y2
Through practical activities and meaningful contexts using concrete objects, pictorial representations and informal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y1

- Subtract one and two digit numbers within 20

$$5 - 3 = 2$$

- Derive related facts up to 20.

$5 - 2 = \square$ $\square = 5 - 2$
$5 - \square = 3$ $3 = \square - 2$
$\square - 2 = 3$ $3 = 5 - \square$
$\square - \square = 3$ $3 = \square - \square$

- Subtract one digit and two digit numbers to 20, including zero, including using a number line

$14 - 6 = 8$

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

- Solve one step problems involving subtraction including missing numbers

$15 = 20 - \square$

- Read, write and interpret mathematical statement involving subtraction (-) and equals (=)

$12 - 5 = 7$

Twelve minus five equals seven

- See also "Fractions" on page 14

Y2

- Fluent recall of bonds to 20 and within 20.

- Derive and use related facts up to 100
  e.g. $10 - 7 = 3$ so $100 - 70 = 30$.

- Counting back by partitioning second number. Subtract the ones first to be in line with columnar subtraction.

  E.g. 46 - 18
  46 – 8 - 10

  - 8   **- 10**

  46   **38**   **28**
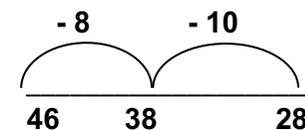
- Find the difference by counting up (only when the difference is small).
  $23 – 18 = 5$

  +1 +1 +1 +1 +1
  16 17 18 19 20 21 22 23
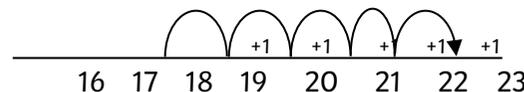
- Recognise and use the inverse relationship between addition and subtraction

- Show that subtraction is not commutative (done in any order)
  $14 – 6 = 8$ so $14 – 8 = 6$

- Progressing to the partitioned columnar method in preparation for year 3
  $48 – 12 = 36$

	40	8
-	10	2
	30	6	= 36

- See also "Fractions" on page 14

Key Stage 2 – Subtraction

Y3	Y4
Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y3

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Solve missing number problems for subtraction

- Solve word problems for subtraction

- Subtract numbers with up to 3-digit numbers, including exchanging

T O	H T O	T O
4 7	8 6 4	$\cancel{4}5^1$
- 2 3	- 6 2 1	- 3 6
2 4	2 4 3	1 5

- Subtract numbers mentally including 3-digit numbers and ones
- Subtract numbers mentally including 3-digit numbers and tens
- Subtract numbers mentally including 3-digit numbers and hundreds

  - See also "Fractions" on page 15

Y4

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Mentally subtract pairs of 2-digit numbers, 3-digit numbers and ones, 3 digit numbers and tens and three digit numbers and hundreds

- Subtract numbers with up to 4 digits using formal written methods, including the column method

H T O	H T O	H T O	Th H T O
$^3\cancel{4}3\,7$	$^3\cancel{4}\,^{12}\cancel{3}\,^12$	$^5\cancel{6}\,^9\cancel{0}\,^14$	$8\,^3\cancel{4}\,^{11}\cancel{2}\,^16$
- 1 8 2	- 1 8 7	- 3 4 7	- 2 1 7 7
2 5 5	2 4 5	2 5 7	6 2 4 9

- Use inverses to check answers to calculations and estimate to check answers

  2366 – 738 = 1627
  1627 + 738 = 2366

- Solve two step subtraction problems by selecting the correct method

  There are 189 counters in a jar and 78 are removed. The next day a further 56 are removed. How many counters are left?

  189 - 78 = 111   111 - 56 = 55

	1	8	9
-		7	8
	1	1	1

^{1}0 1

	$\cancel{1}$	$\cancel{1}$	1
-		5	6
		5	5

  - See also "Fractions" on page 15

Key Stage 2 – Subtraction

Y5	Y6
Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y5

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Solve multi-step subtraction problems in context deciding which operation and method to use and why

> There are 1898 counters in a box and 258 are removed. The next day, a further 938 are taken away. How many are left?

$1898 - 258 = 1640$

$1640 - 938 = 702$

- Use rounding to check answers to calculations

- Subtract mentally using increasingly large numbers

- Subtract numbers with more than 4 digits using formal methods

$73840 - 19383 = 54457$

- See also "Fractions" on page 16

Y6

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Use estimation to check answers to calculations

- Solve multi-step problems involving any operation

> Sarah bought 166 apples on Tuesday and a further 273 apples on Wednesday. She then sold 295 apples. How many apples did she have left?

$166 + 273 = 439$

$439 - 295 = 144$

- Work out mixed calculations by following the correct order of operations

| B	Brackets
I	Indices
D	Division
M	Multiplication
A	Addition
S	Subtraction

- Calculate mentally including with mixed operations and large numbers

- See also "Fractions" on page 16

Key Stage 1 – Multiplication

| Y1	Y2
Through practical activities and meaningful contexts using concrete objects, pictorial representations and informal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y1

Through practical activities and meaningful contexts using concrete objects, pictorial representations and informal written methods:

- Show multiplication using pictures including number lines

0 1 2 3 4 5 6 7 8 9 10 11 12 13
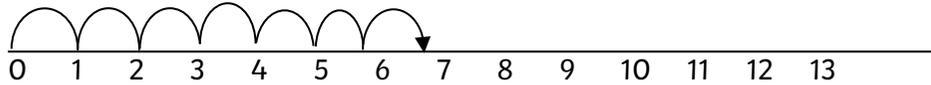
- Make connections between arrays, number patterns and counting in 2's, 5's to 50 and 10's to 100

- Show multiplication using arrays
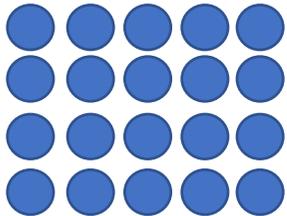
4 x 5
5 + 5 + 5 + 5

- Doubles single digit numbers
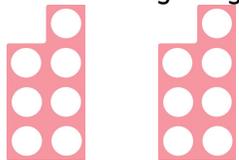
7   +   7   = 14

- Multiply using objects (by grouping small amounts)

- Solve simple multiplication problems

There are 2 sweets in one bag. How many sweets are there in 5 bags?

- See also "Fractions" on page 14

Y2

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Double numbers (by partitioning and recombining) 17 + 17.

10   +   10   7   +   7

- Understand multiplication as repeated addition/groups/lots.
- Read arrays.

2 x 4
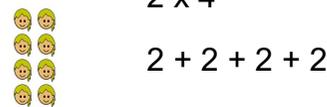
2 + 2 + 2 + 2

- Repeated addition on a number line.

2   +   2   +   2   +   2   (4 groups of 2, 2 four times, 2 x 4)

0   1   2   3   4   5   6   7   8   9   10
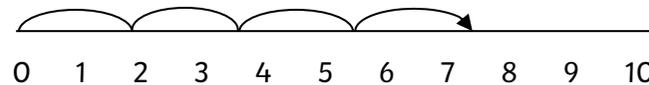
4   +   4   (2 groups of 4, 4 two times, 4x2)

0   1   2   3   4   5   6   7   8   9   10

- Know the multiplication tables for 2, 5 and 10.

- Calculate mathematical statements within the multiplication tables using the multiplication (x) and equals (=) signs.

- Show that the multiplication of two numbers can be done in any order (commutative).

- See also "Fractions" on page 14

Key Stage 2 – Multiplication

Y3	Y4
Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y3

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Write and calculate mathematical statements for multiplication. Statements to include the multiplication tables that they know and 2 digit numbers x 1 digit numbers. Pupils use mental methods and progress to formal written methods (expanded column method)

```
T O
  1 4
x   5
  2 0  (5x4)
+ 5 0  (5x10)
  7 0
```

- Solving missing number problems using multiplication

$5 \times \square = 55$

- Solve word problems using multiplication

> Fifteen friends each buy four apples. How many apples are there altogether?

- Use mental strategies to multiply a 2-digit number by a 1-digit number

- Recall and use multiplication facts for the 2, 4 and 8 times tables

- . See also "Fractions" on page 15

Y4

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Mentally multiply together 3 numbers using place value and known derived facts

- Recall multiplication tables and facts up to 12x12 (Including multiplying by 0 and 1).

- Continue using grid method and expanded method as appropriate, progressing to short multiplication to multiply 2-digit numbers by a 1-digit number, solve problems involving multiplying and multiply 3 numbers together (see year 3)

```
  3 2 7
x     4
1 3 0 8
  1 2
```

- Use short multiplication to multiply 2-digit numbers by a 1-digit number, solve problems involving multiplying and multiply 3 numbers together.

No carrying	Extra digit	Carrying	Zeros	Ext.
T O 3 2 x 3 9 6	H T O 5 1 x 2 1 0 2	H T O 3 8 x 7 2 6 6 5	H T O 2 0 2 x 4 8 0 8	H T O □ 5□ x 4 6 1 2 2 1

- See also "Fractions" on page 15

Key Stage 2 – Multiplication

Y5	Y6
Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods: • Multiply numbers mentally using known facts • Recognise and use prime, square and cube numbers • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • Multiply whole numbers and those involving decimals by 10, 100 and 1000 • Recall and use multiplication tables up to 12x12 (Including multiplying by 0 and 1). • Continue to practise short multiplication to multiply whole numbers, multiply a number up to 4 digits by a 1-digit number and solve problems involving multiplication (see year 4) • Introduce long multiplication to multiply whole numbers, multiply a number up to 4 digits by a 1-digit number and solve problems involving multiplication	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods: • Recall and use multiplication tables up to 12x12 (Including multiplying by 0 and 1). • Use estimation to check answers to calculations • Work out mixed calculations by following the correct order of operations • Calculate mentally including with mixed operations and large numbers • Continue to practise both short and long multiplication to solve multi-step problems involving any operation and multiply up to 4 digits by 2 digits (see year 5)

		1	8
		1	3
x	5	4	
	1	8	0
	2	3	4

• Identify multiples and factors including finding all factor pairs

• See also "Fractions" on page 16

(Y6 column continued)

		3	6	5	2
x					8
	2	9 ,	2	1	6
			5	4	1

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

• Multiply decimals using the grid method and progressing on to short multiplication

• See also "Fractions" on page 16

Key Stage 1 – Division

Y1	Y2
Through practical activities and meaningful contexts using concrete objects, pictorial representations and informal written methods: • Solve simple division problems by explaining division as sharing equally. Share a bag of 15 sweets between 5 children – one for you, one for you, one for you, one for you, one for me. • Divide by using objects – group objects into small amounts 12 shared between 3 is 4 • Introduce halving even numbers up to 20. Half of 4 • See also "Fractions" on page 14	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods: • Recall and use division facts for 2, 5 and 10 times tables. • Continue to use division as sharing. 15 children get into teams of 5 to play a game. How many teams are there? How many groups of 5 in 15? How many 5's have been counted? How many 2's in 10? • Understand '÷ 2' as 'half of'. • Understand that division is not commutative. • Recognise and explain the relationship between x and ÷ 4 x 2 = 8 so 8 ÷ 2 = 4 • Record using division (÷) and equals (=) signs. • Use number lines to answer questions such as 20 ÷ 2 = • See also "Fractions" on page 14
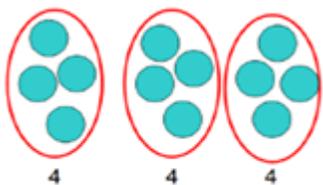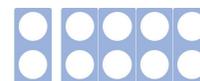
Key Stage 2 – Division

Y3	Y4
Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y3

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Write and calculate mathematical statements for division using the tables they know.

- Use short division, to solve missing number problems and word problems with exact answers.

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

- Recall and use division facts for 3, 4, and 8 times tables.

- See also "Fractions" on page 15

Y4

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Recall and use all division facts for all tables up to 12 (Including dividing by 1)

- Use place value, known and derived facts to divide mentally

- Continue with short division method involving carrying, with exact answers to solve problems (see year 3)

$$4\overline{)7\,^3 2} = 18 \qquad 5\overline{)1\,8\,^3 5} = 037 \qquad 4\overline{)8\,7\,^3 2} = 218$$

- Progress to short division with remainders to solve problems

$\begin{array}{r} 2\;0\;4 \\ 4)\,8\;\;1\,^16 \end{array}$	$\begin{array}{r} 1\;4\;1\;r1 \\ 3)\,4\,^12\;4 \end{array}$

- See also "Fractions" on page 15

Key Stage 2 – Division

Y5	Y6
Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y5

- Recall and use all division facts for all tables up to 12 (Including dividing by 1)

- Divide numbers mentally using known facts

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

- Consolidate the use of short division to divide numbers with up to 4 digits by a 1 or 2 digit number and solve problems involving division (see year 4)

$$0\ 6\ 6\ 3\ r\ 5$$
$$8\overline{)5\,{}^53\,{}^50\,{}^29}$$

- Use long division to divide numbers with up to 4 digits by a 1 or 2 digit number and solve problems involving division

432 ÷ 15 becomes

```
        2   8   r 12
  1   5 | 4   3   2
          3   0   0
          1   3   2
          1   2   0
              1   2
```

Answer: 28 remainder 12

432 ÷ 15 becomes

```
        2   8
  1   5 | 4   3   2
          3   0   0    15×20
          1   3   2
          1   2   0    15×8
              1   2
```
$$\frac{12}{15} = \frac{4}{5}$$

Answer: 28 $\frac{4}{5}$

432 ÷ 15 becomes

```
        2   8 · 8
  1   5 | 4   3   2 · 0
          3   0   ↓
          1   3   2
          1   2   0   ↓
              1   2   0
              1   2   0
                      0
```

Answer: 28·8

N.B: The above examples are taken from the National Curriculum for Mathematics appendix.

- See also "Fractions" on page 16

Y6

- Recall and use all division facts for all tables up to 12 (Including dividing by 1)

- Continue to practise both short and long division to solve multi-step problems involving any operation and divide up to 4 digits by 2 digits (see year 5)

- Children should be able to interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.

98 ÷ 7 becomes
```
      1   4
      2
  7 | 9   8
```
Answer: 14

432 ÷ 5 becomes
```
          8   6   r 2
          3
  5 | 4   3   2
```
Answer: 86 remainder 2

496 ÷ 11 becomes
```
          4   5   r 1
          5
  1   1 | 4   9   6
```
Answer: 45 $\frac{1}{11}$

- Use estimation to check answers to calculations

- Work out mixed calculations by following the correct order of operations

- Calculate mentally including with mixed operations and large numbers

N.B: The above examples are taken from the National Curriculum for Mathematics appendix.

- See also "Fractions" on page 16

Key Stage 1 – Fractions

Y1	Y2
Through practical activities and meaningful contexts using concrete objects, pictorial representations and informal written methods:	Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

Y1

Through practical activities and meaningful contexts using concrete objects, pictorial representations and informal written methods:

- Solve simple problems involving a quarter and a half

Sarah has 12 cupcakes. She gives half to her friend. How many do they each get?

Ethan has 16 apples. She puts $\frac{1}{4}$ in a box. How many are in the box?

- Find and name a half of a quantity, shape and object
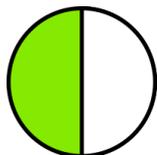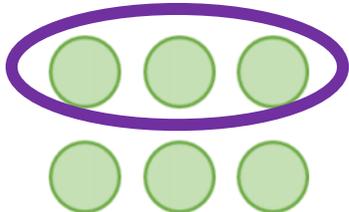
- Find and name a quarter of a quantity, shape and object
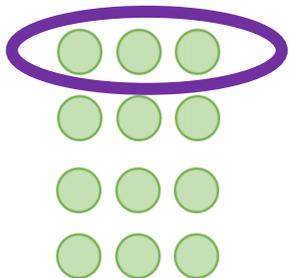
Y2

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Identify $\frac{1}{4}$, 1/3 , $\frac{1}{2}$, 2/4 and $\frac{3}{4}$ of a number, shape, length or sets of objects and know that all parts must be equal parts of the whole (see year 1)
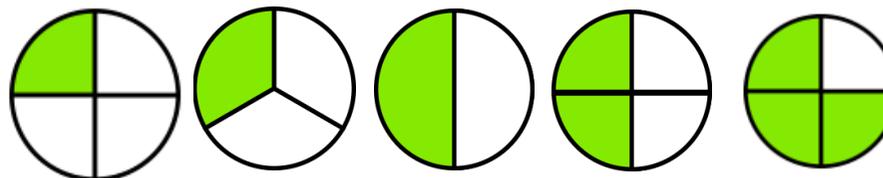
- Count in fractions up to 10, starting from any number
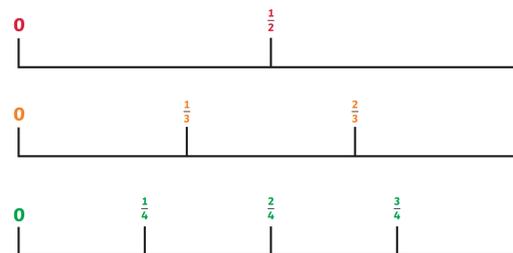
- Write simple fractions and recognise the equivalence of 2/4 and 1/2
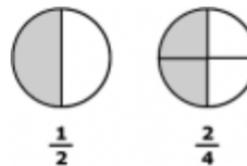
$\frac{1}{2}$ of 12 is 6 and 2/4 of 12 is 6

Key Stage 2 – Fractions

Y3	Y4

Y3

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Solve problems that involve fractions
- Compare and order fractions with the same denominator

$$\frac{1}{10} \quad \frac{3}{10} \quad \frac{5}{10} \quad \frac{6}{10}$$

$\frac{5}{8}$ ◯ $\frac{7}{8}$
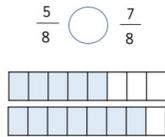
- Add and subtract factions with the same denominator within 1 whole

$$\frac{4}{12} \quad + \quad \frac{7}{12} \quad = \qquad \frac{6}{10} \quad - \quad \frac{5}{10} \quad =$$

- Recognise and show equivalent fractions using diagrams
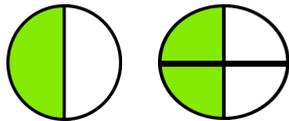
- Recognise and use fractions as numbers
- Recognise, find and write fractions for a set of objects

$\frac{1}{4}$ of 20 is 5
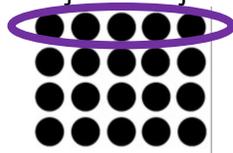
- Know that tenths arise from dividing an object into 10 equal parts
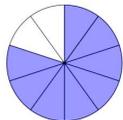
- Count up and down in tenths

Y4

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Solve simple measure and money problems involving fractions

Anna has £6. She gives away $\frac{1}{2}$ to her friend. How much money does she have left?

Jack has a piece of ribbon that is 30cm long. He cuts it in half. How long is each piece?

- Recognise and write decimal equivalents to a $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$

$\frac{1}{4} \rightarrow 0.25 \qquad \frac{1}{2} \rightarrow 0.5 \qquad \frac{3}{4} \rightarrow 0.75$

- Add and subtract fractions with the same denominator (see year 3)
- Identify, name and write equivalent fractions of a given fraction including $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$
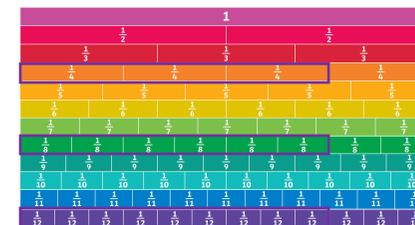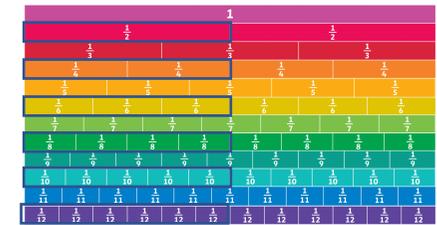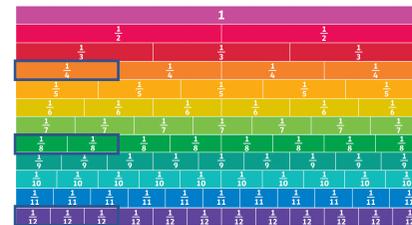
Key Stage 2 – Fractions

Y5	Y6

Y5

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Write percentages as a fraction (out of 100 and simplify)
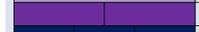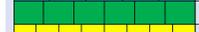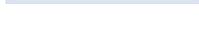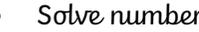
Fraction	Percentage	Decimal
1 whole	100%	1
$^1/_2$	50%	0.5
$^1/_3$	33.3%	0.33
$^1/_4$	25%	0.25
$^1/_5$	20%	0.2
$^1/_6$	16.7%	0.167
$^1/_8$	12.5%	0.125
$^1/_{10}$	10%	0.1
$^1/_{12}$	8.3%	0.083

- Solve number problems involving fractions
- Compare and order fractions whose denominators are all multiples of the same number

Circle the **greatest** fraction.

$\frac{2}{3}$ or $\frac{3}{9}$ $\frac{11}{20}$ or $\frac{9}{10}$

Circle the **smallest** fraction.

$\frac{4}{18}$ or $\frac{2}{6}$ $\frac{22}{30}$ or $\frac{10}{10}$

- Read and write decimal numbers as fractions
- Multiply proper fractions and mixed numbers by whole numbers supported by diagrams and materials

Count the number of sixths to work out

$3 \times \frac{5}{6} =$

- Add and subtract fractions with the same denominator and related fractions (see year 3)
- Recognise mixed numbers and improper fractions and convert from one form to another

$\frac{17}{6} \rightarrow 2\frac{5}{6}$ $2\frac{5}{6} \rightarrow \frac{17}{6}$

Y6

Through practical activities and meaningful contexts using concrete objects, pictorial representations and formal written methods:

- Divide proper fractions by a whole number
- Multiply simple pairs of proper fractions, writing the answer in its simplest form

Dividing Fractions

$\frac{3}{4} \div \frac{2}{7}$

Keep — Change — Flip

$\frac{3}{4} \times \frac{7}{2} = \frac{21}{8}$

$\frac{3}{5}$ x $\frac{2}{3}$ = $\frac{6}{15}$
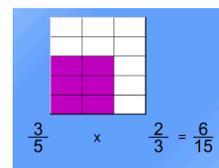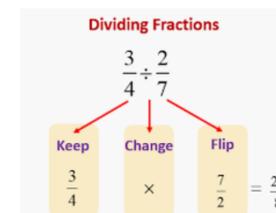
- Add and subtract fractions with different denominators and mixed numbers
- Associate fractions with division to calculate an equivalent fraction
- Compare and order fractions including fractions greater than 1

Use bar models to compare $\frac{7}{6}$ and $\frac{5}{3}$.

$\square > \square$
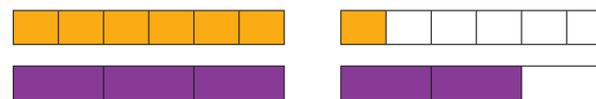
- Use common factors to simplify fractions and use common multiples to express fractions in the same denominator

$\frac{14}{30}$ | $\frac{14 \boxed{\div 2}}{30 \boxed{\div 2}}$

- Recall and use equivalences between simple fractions, decimals and percentages

Fraction	Percentage	Decimal
1 whole	100%	1
$^1/_2$	50%	0.5
$^1/_3$	33.3%	0.33
$^1/_4$	25%	0.25
$^1/_5$	20%	0.2
$^1/_6$	16.7%	0.167
$^1/_8$	12.5%	0.125
$^1/_{10}$	10%	0.1
$^1/_{12}$	8.3%	0.083