Fractions

Foundation Stage Objectives:
**See Division section of policy.**

Year 1 Objectives:
- 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.

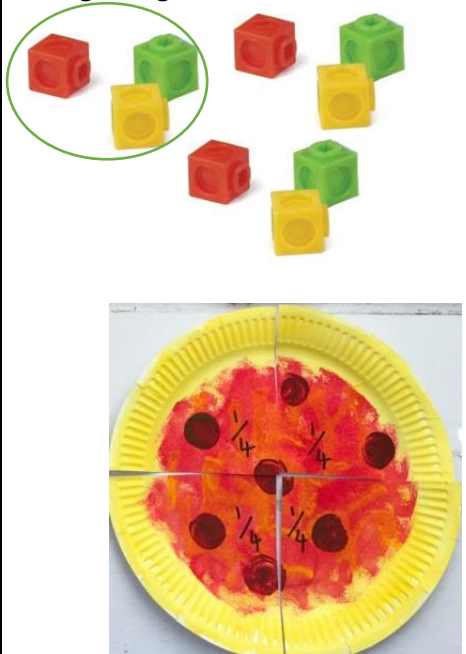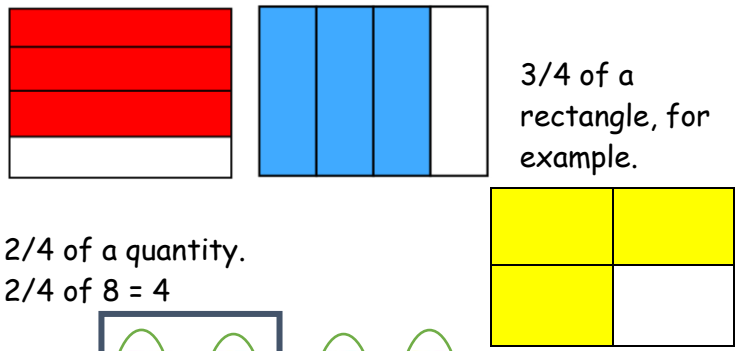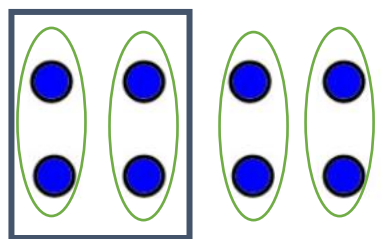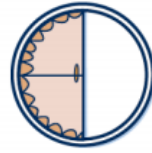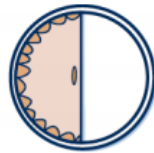| Concrete	Pictorial	Abstract
Pupils will use practical objects, including within their role play and outside areas to find 1/2 and 1/4 of different amounts and shapes.		
Bar Model using strips of paper, I find 1/2 and 1/4 by folding and cutting different sizes and shapes in order to support their understanding of fractions.	E.g. find half (½) of the items on each picture or shape. Do the same for a quarter (1/4).	Half of 10 = 5 1/2 of 6 = 3 A quarter of 20 = 1/4 of 8 = 2
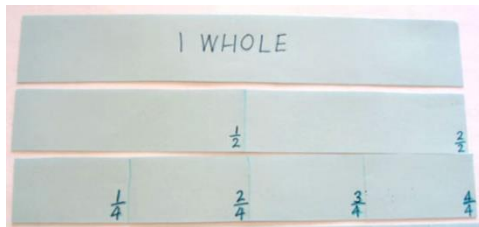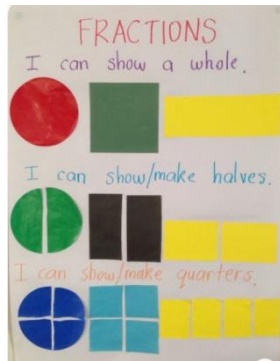
	Repeat with shapes: Which have been cut exactly into quarters?		
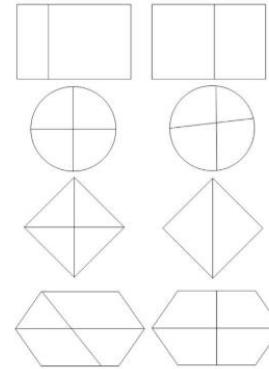
Year 2 Objectives:
- Recognise, find, name and write fractions 1/3 , 1/4 , 2/4 and 3/4 of a length, shape, set of objects or quantity
- Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2 .

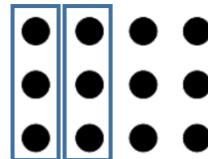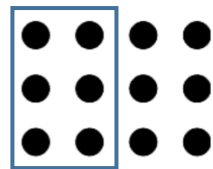| Concrete	Pictorial	Abstract
Recognising 1/3. 1/4 2/4 and 3/4	Find different ways of finding fractions of shapes 3/4 of a rectangle, for example. 2/4 of a quantity. 2/4 of 8 = 4	1/3 of 9 = 3 2/4 of 8 = 4 3/4 of 12 = 9

Recognise equivalence. 1/2 = 2/4 	 2/4 of a pie = 1/2 of a pie 1/2 of 12 = 2/4 of 12 	1/2 of 12 = 6 2/4 of 12 = 6

Year 3 Objectives:
- Recognise and show, using diagrams, equivalent fractions with small denominators
- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- Add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7]
- 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

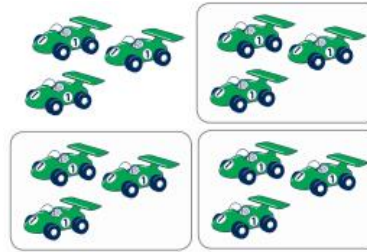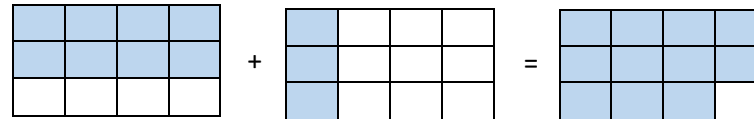| Recognise and show equivalent fractions using fraction bars/strips, for example 	 1/2 2/4 3/6 4/8	David says two sixths is the same as one third. Is he correct? How do you know?
Fractions of a discrete set of objects. Unit fraction 1/8		1/5 of 15 sweets = 3 (15 ÷ 5 = 3)

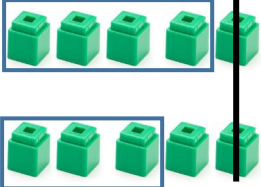|		
Non-unit fraction 3/7	1/8　　　　　　3/4	2/5 of 15 sweets = 6 (15 ÷ 5 = 3 and 3 x 2 = 6)
Add and subtract fractions with the same denominator within 1 whole. Comparing the two fractions and finding the difference/ 4/5 - 3/5 = 1/5		8/12 + 3/12 = 11/12 4/5 - 3/5 = 1/5
Solve problems:	David spent 1 /4 of his money on a book. The book cost £10. How much money did he start off with? Total Money? 1/4　　　1/4　　　1/4　　　1/4	1/4 = £10 4 x £10 = £40

£10	£10	£10	£10	

Concrete	Pictorial	Abstract

Year 4 Objectives:
- Add and subtract fractions with the same denominator
- 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

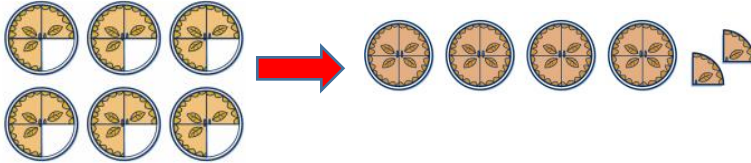| Concrete	Pictorial	Abstract
Adding and subtracting fractions as above Solve problems including non-unit fractions	 2/3 of £18 = 	3/8 + 5/8 = 8/8 (same as 1 whole) 6/7 – 4/7 = 2/7 2/3 of £18 = £18 ÷ 3 = £6 £6 x 2 = £12

Use counters/play money to find 2/3.
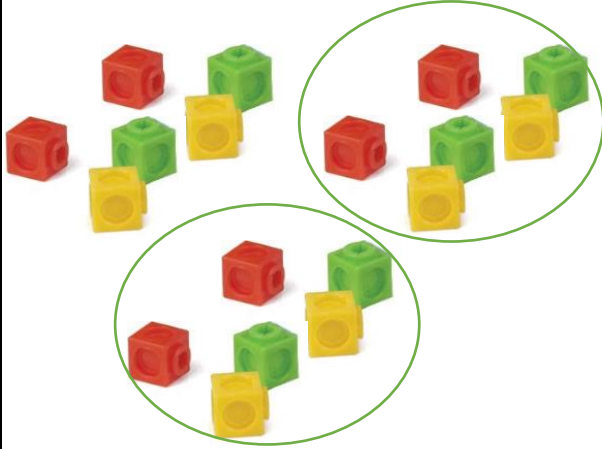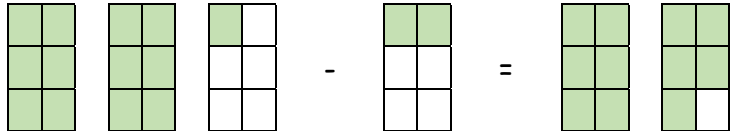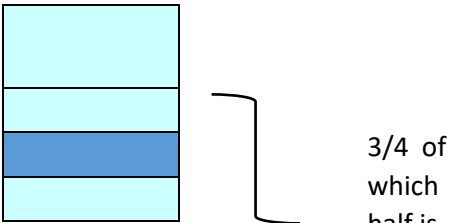

Year 5 Objectives:
- Add and subtract fractions with the same denominator and denominators that are multiples of the same number
- Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5]
- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

| Concrete	Pictorial	Abstract
Add and subtract fractions with same denominator and denominators that are multiples of the same number, and recognise mixed numbers and improper fractions. 2/3 + 2/3 = 4/3 = 1 1/3 	 4/6 + 3/6 = 1 whole + 1/6 (7/6) 2/5 - 1/4 = 8/20 - 5/20 = 3/20	4/6 + 3/6 = 7/6 = 1 1/6 1 1/6 = 7/6 (because 1 = 6/6) 2/5 - 1/4 = 2/5 - 1/4 X4 x5 8/20 - 5/20 = 3/20

Multiply proper fractions and mixed numbers by a whole number $6 \times 3/4$ 	$6 \times 3/4 = 4 \; 2/4$ 	$6 \times 3/4 = 18/4 = 4 \; 2/4$ or $4 \; 1/2$

Year 6 Objectives:
- Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $1/4 \times 1/2 = 1/8$]
- Divide proper fractions by whole numbers [for example, $1/3 \div 2 = 1/6$]

Concrete	Pictorial	Abstract
Add and Subtract fractions – as year 5 With mixed numbers	$2 \; 1/6 \; - \; 1/3$ $2 \; 1/6 \qquad - \qquad 1/3 \; = \; 1 \; 5/6$	$2 \; 1/6 \; - \; 1/3$ (find the same denominator) $2 \; 1/6 \; - \; 2/6$ (change 1 whole into a fraction and add to the existnig fraction) $1 \; 7/6 \; - \; 2/6 \; = \; 1 \; 5/6$
Multiply simple pairs of proper fractions.	$1/2 \; \times 3/4$ 3/4 of which half is shaded	$1/2 \; \times 3/4 \; = 3/8$ 1. Multiply the numerator. 2. Multiply the denominator. 3. Simplify where possible. $\times$
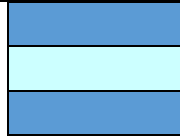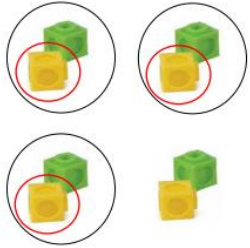
1/2 x 3/4 = 3/8		$\frac{2}{5}$ x $\frac{5}{6}$ = $\frac{10}{30}$ = $\frac{1}{3}$ x
Divide proper fractions by whole numbers	1/2 ÷ 3 =	1/2 ÷ 3 = 1/6