Maths Topic - Fractions

Assessment areas

Year 2

- Understanding halves and quarters in a range of context (cutting squares and triangles)
- Halving and halving again to find quarters
- Finding a quarter of a number in a set of objects that can be moved
- Finding a quarter of a number in a picture (placing 14 dots on a ladybird to show half) (placing 12 tomatoes on four plates to show quarter) (using blocks to show what numbers can be halved and what numbers cannot)
- Finding odd and even numbers
- Find one half, one quarter and three quarters of shapes and sets of numbers.

Questions

How could we give someone half of a 20p coin?
Can you turn a quarter turn clockwise?
How can we work out half of 3 equal strips of paper?
Tell me how to find one quarter of a piece of paper.
Tell me how to find one quarter of cubes.

Year 3 Statutory Requirements

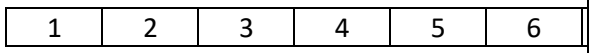
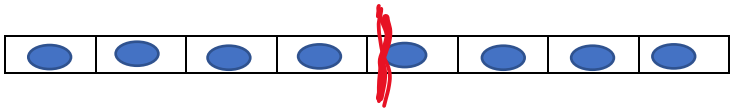
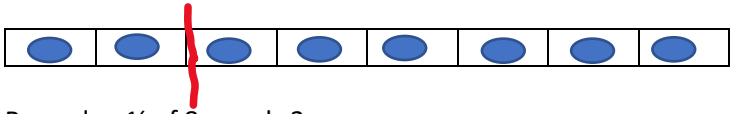
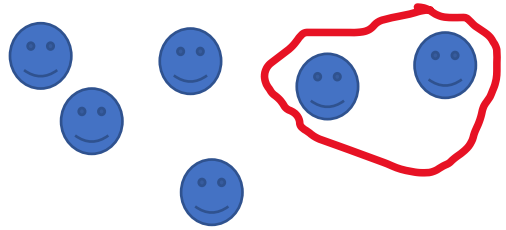
- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit number or quantities by 10
- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- Recognise and show, using diagrams, equivalent fractions with small denominators
- Add and subtract fractions with the same denominator within one whole i.e. 5/7 + 1/7 = 6/7
- Compare and order unit fractions, and fractions with the same denominators
- Solve problems that involve all of the above.

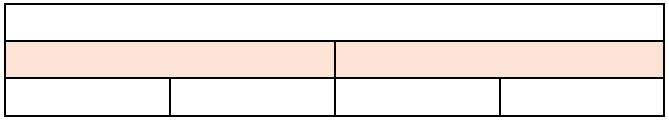
Year 3 Notes and guidance

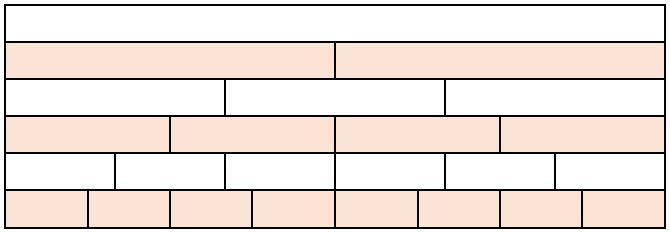
- Pupils connect tenths to place value, decimals measures and to division by 10
- They begin to understand unit ad non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence. The should go beyond the [0,1] interval, including relating this to measure.
- Pupils understand the relation between unit fractions as operators (fractions of), and division by integers
- They continue to recognise fractions in the context of part of a whole, numbers, measurements, a shape, and unit fractions as a division od a quantity.
- Pupils practise adding and subtracting fractions with the same denominator through a variety of increasingly complex problems to improve fluency.

Ideas and Learning

		Ideas	Resources
1	Understand and begin to read these words. Part, fraction, one whole, one half, one quarter, three quarters Read and write ½ and ¼ Recognise that one whole can be split into two identical halves or four identical quarters.	Read words related to fractions Colour in halves of quarters of shapes Using pictures of fractions (pizza), write down the correct fraction to go with the picture.	Shapes with lines drawn to show halves and quarters
2	**Under**stand and begin to read these words. Three quarters, one third, two thirds, one tenth … Read and write proper fractions such as ½, ¼, 1/3, ¾ etc	Talk about the top number (the NUMERATOR) shows how many parts are shaded, and the bottom number (the DENOIMINATOR) shows how many parts the shape is divided into. Show fractions in pictures. Talk about what fractions they are. Write down the correct fraction.	Pictures of fractions drawn in shapes (i.e pizzas) with different amounts of fractions shaded. Play pizza game
3	Find ½ and ¼ of different shapes	Find ½ and ¼ of a variety of paper shapes by folding them in different ways into 2 and then 4 equal parts Shade ½, ¼, of various shapes divided into 4 equal parts. e.g. Draw a rectangle and section it into ¼ - then colour ½ blue, ¼ red and ¼ green	Paper for folding Rectangle drawn and marked into quarters
4	Find ½, ¼, ¾, 1/3, 2/3 of shapes	Folding paper in different ways. First into ½ and ¼, then 8 or 12 equal parts. Find 1/3, 2/3 of shapes by folding them into 3 then 6 or 12 equal parts. Shade ½, ¼, ¾ of different shapes divided into 4, then 8, then 12 equal parts.	Paper for folding Ruler

5	Find ½, ¼ by folding paper strips of 4 then 8 counters or pictures of objects  Later use numbered strips  	 Record ½ of 8 equals 4  Record as ¼ of 8 equals 2	Strips of paper with counters drawn on. markers
6	**Learn the Terms Numerator and Denominator** Learn some of the other words relating to fractions.	Draw a poster showing the names of the fraction terms. Make it colourful with all the names.	Felt tips Large paper
7	Find 1/8 then several 1/8, then several eighths by folding paper strips of 8 then 16 counters, then numbered strips. Repeat with sixths, using strips with 6 then 12 then 18 counters, then numbered strips.	Ask questions like; What fraction of these buttons is ringed? 	Counters Strips of paper

8	Recognise the equivalence of ½ and 2/4 Recognise them from folded shapes. • Which shapes are divided in halves and which in quarters? • That two quarters are equivalent to one half • That two halves or four quarters make one whole.	Recognise them from folded shapes. • Which shapes are divided in halves and which in quarters? • That two quarters are equivalent to one half • That two halves or four quarters make one whole.	Folded strips of paper in whole twos and fours
9	Recognise the equivalence of ½ and 1/4:	Recognise from folded shapes or strips and diagrams that;  • ½ is equivalent to 2/4 • Two halves make one whole • Four quarters make one whole • ¾ and ¼ make one whole • ¼ is half of ½ • Three quarters make one whole • GO ON TO SHOW THAT 1/3 AND 2/3 MAKE ONE WHOLE	Strips of paper marked in whole, halves and quarters Strips of paper marked into thirds

10	Recognise the equivalences, e.g. between halves, quarters and eighths, or thirds and sixths.	Recognise from folded shapes or strips and diagrams that;  • ½ is equivalent to 2/4 or 3/6 or 4/8 • ¼ is equivalent to 2/8 and ¾ is equivalent to 6/8 • 1/3 is equivalent to 2/6 or 4/12 • 2/3 is equivalent to 4/6 or 8/12 • ¼ is half of ½ and 1/8 is half of 1/4	Find two fraction charts from the internet and lamininate one whole . Cut the other into strips and laminate
11 12 13 14	Use the FRACTION CHARTS	Ask and answer questions using the fraction charts – i.e. ½ = how many quarters? How many sixths in one half? What fractions can you use to make two quarters? Use worksheets.	http://www.bbc.co.uk/bitesize/ks2/maths/number/fractions_basic/play/ https://phet.colorado.edu/sims/html/fraction-matcher/latest/fraction-matcher_en.html https://nrich.maths.org/8957 Look for more games on line to consolidate fractions up to this point.
Recap and assessment			