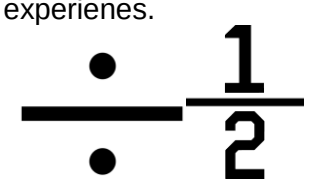
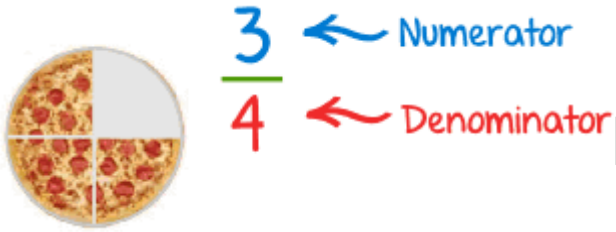
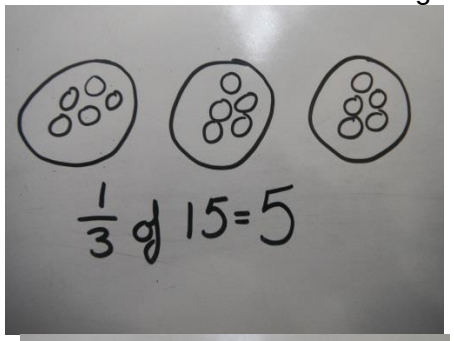
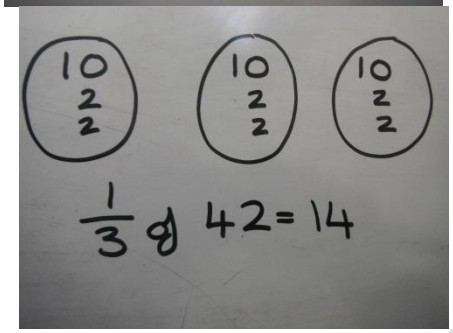
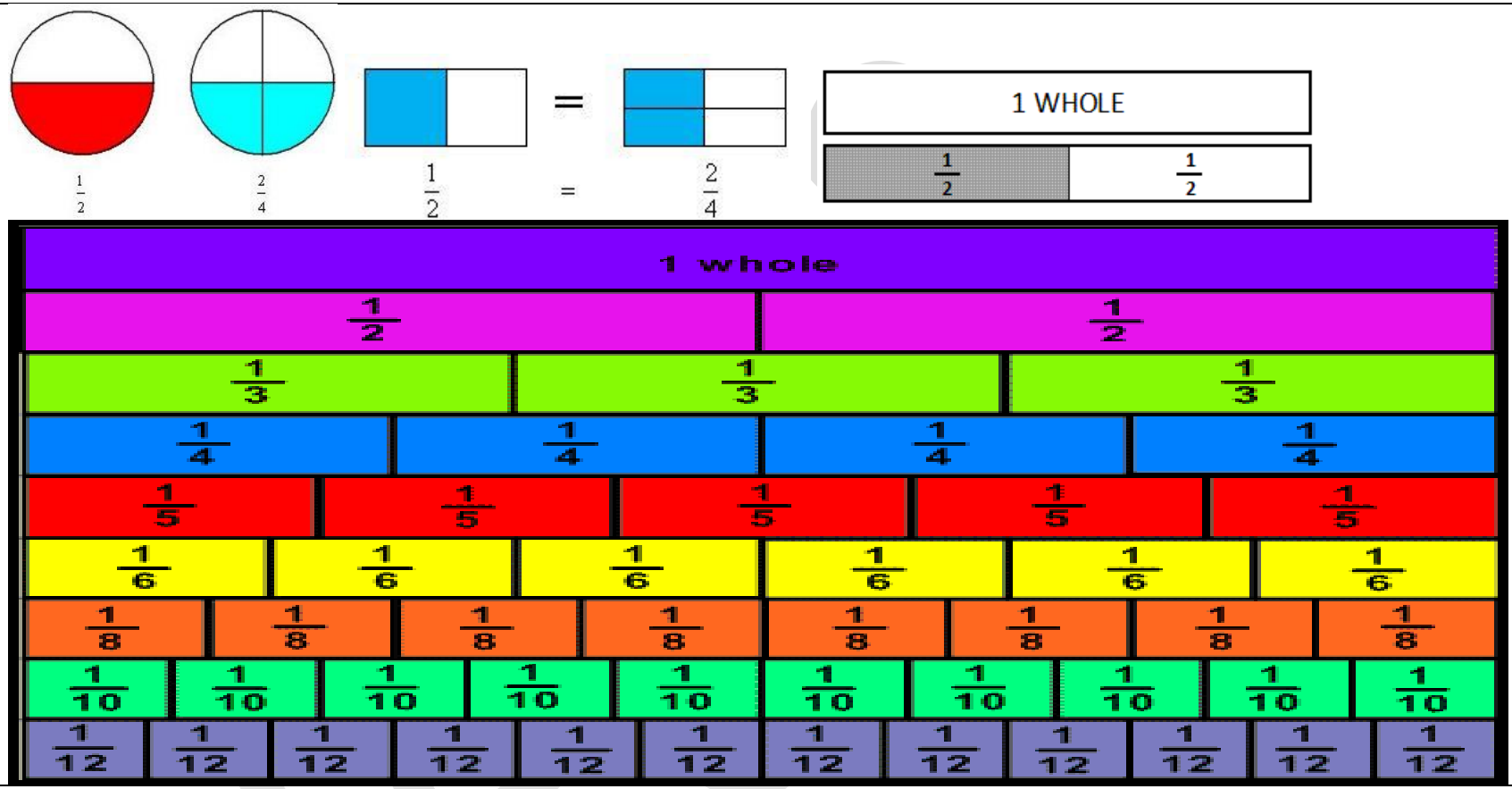
All Saints C of E Primary School

Year 3 Fractions

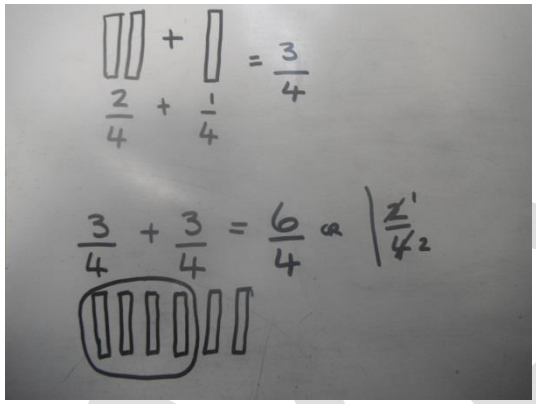
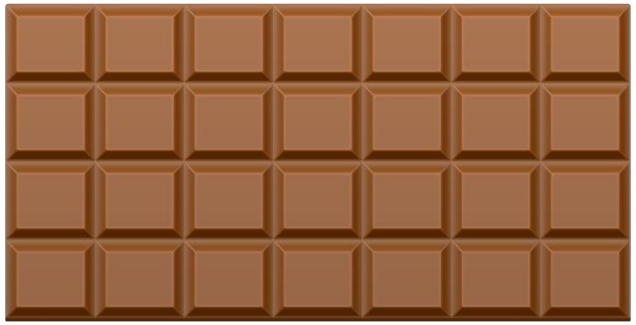
By the end of Year Three, children have been taught to:

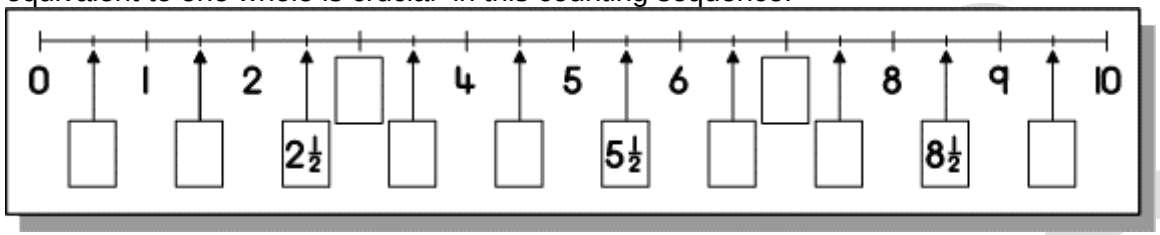
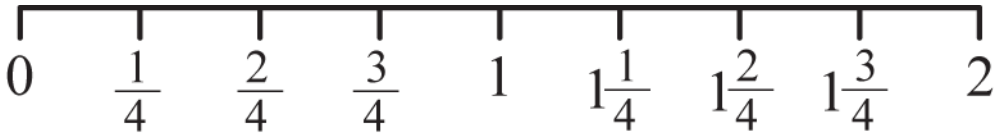
Objective	Why is it important? Things to watch out for! Taught strategies
recognise, find and write fractions of a discrete set of objects	Children's ability to recognise, find and write fractions draws on their prior experience in Year 2 and is then extended. The link between division and fractions is developing further by relating and comparing the division sign and a written fraction, as well as through practical experienes.  When comparing the division sign and a written fraction, children often say 'there is a line with something above it and something below it', and 'the line is dividing two things'. By doing this, it makes the link between division and fractions explicit. Likewise, to be able to achieve and progress with fractions, the related fraction vocabulary needs to be embedded. Maths has its own specialised language, the *numerator* and *denominator* being some that either you know or you don't. The words do not give children any clue as to what they mean or their orientation to each other in the fraction. The denominator is the amount of parts the whole has been cut into and the numerator is the amount of parts you have. Through practical activities and other ways of making the words memorable, is the only way to reinforce the meaning of the words. Using silly voices or creating images to make it memorable is a way that can work for some children. Darthvader (with the voice) splitting the whole in half with his light saber is one thing to try if we are feeling theatrical.  Finding halves, quarters and thirds of shapes and amounts of objects requires different levels of thinking. For example, finding a third of a shape involves comparing the relative size of the shape and trying out where children would need to either cut or draw a line to divide the shape. Some children fold the shape (if it is paper) to test out their ideas, whereas some measure the shape with a ruler and divide the total

	amount of centimetres. Whereas finding a third of fifteen objects does not involve cutting items or drawing lines, fractions of amounts involves sharing out the amount into three equal parts – many children do this by doing the *one for me, one for you* approach. In Year 3, children are introduced to finding a wider range of unit fractions, as well as using larger amounts of objects.   When finding fractions of larger amounts we can share out larger chunks based on what we know. For example finding one third of forty two would take a long time sharing out one for me, one for you so we encourage children to think bigger. During these types of tasks, children are always encouraged to use equipment and draw pictorial representations to help develop their understanding, make it memorable and enable them to make links between other mathematical concepts. Moving on from finding unit fractions, children are asked to find several parts of the whole for example ¾. To be able to do this children need to be secure finding a ¼ first and then think about if ¼ is 6 sweets, ¾ would be 18 sweets. Due to the fact that this task involves two steps in finding the answer, children often find a quarter of the sweets and then think they have finished. Revisiting the initial question is always key to ensuring children complete the whole task.
recognise and show, using diagrams, equivalent fractions with small denominators	Equivalent fractions build heavily on visual images, as well as children's ability to spot patterns and relationships. For example ½ is equivalent to 2/4 – When asking children what they notice, they often say that 'the numerator in a half is double the numerator in the quarters', this can also be said for the denominator. Alternatively this can be said that the numertor in the quarters fraction is half the numerator in the half written fraction. The link between doubles and halves in these fractions is clear, given the right learning opportunites. Using this doubling and halving approach can be used for equivalence – the main thing is whatever we do to the numerator the same is done to the denominator – ½= 2/4 4/8 8/16 …. Likewise 1/4 2/8 4/16…….



Compare and order fractions	$\frac{1}{5}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{6}$ NOTE: These fractions are **not** in the right order! Comparing and ordering fractions draws heavily on children's understanding and knowledge of the denominator and what that means in relation to the whole shape/object or amount of objects. The key thing when ordering unit fractions is knowing that we only have one part of the whole, therefore the size of the whole matters. The larger the denominator, the more the whole is divided into. In real terms, if we have one quarter of a cake or one sixth of a cake, we would have more cake if we had a quarter. A common misconception children have is that they believe the larger the denominator the larger the fraction or amount of something they will receive. Asking questions such as; 'Would you rather have a fifth or a sixth of a bar of chocolate?' is always a good assessment tool to use to ascertain children's understanding of fractions.

	When we venture away from unit fractions and order fractions with several parts, the above does not necessarily apply. $\frac{2}{5}$ $\frac{2}{3}$ $\frac{3}{4}$ When ordering and comparing fractions with several parts, children will need to draw on previous experiences, use equipment and create pictorial images to help prove their reasoning to justify their decisions. The *more than* and *less than* sign can be used when comparing two fractions.
add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7)	Calculating with fractions is introduced in Year 3, even though children have been subtly exposed to it in previous years. For example, 'If I have two halves how many do I have altogether?' When introducing anything new, children are always given practical experiences to help develop their understanding, as well as building a visual mental image. To begin with use familiar things, such as Kit kats (two or four finger), chocolate bars, cookies and pizzas and other items that children can relate to. These are used because their understanding of the whole is secure due to their prior everyday experiences.    When the added numerators exceed the denominator, children's understanding of equivalence is drawn upon. For example, if the answer of a calculation is six quarters, there is one lot of four in nine and two left over therefore six quarters is equivalent to $1\frac{2}{4}$ OR $1\frac{1}{2}$. Here are some common errors children sometimes make when adding and subtracting fractions with the same denominator: • children add/subtract the denominators, as well as the numerators • children put the denominator where the numerator should be when showing the pictorial representation as a number sentence In Year 3, the denominator is kept the same for adding and subtracting to reinforce the concept of the whole and prepare children for learning in later years.
Count in fractions ¼, 2/4 (or ½),3/4,	To be able to count confidently with fractions, children need to be able to internalise what the fraction being counted looks like, add on the next fraction being counted and recognise equivalence. For example, when	**Spot the mistake** 7, 7 ½ , 8, 9, 10

1, 1 ¼, …….	counting in halves a child might count ½, 2/2, 3/2, 4/2 as opposed to ½, 1, 1 ½, 2. Knowing that two halves is equivalent to one whole is crucial in this counting sequence.   Counting backwards in fractions is always another added level of challenge which really makes children think.	8 ½, 8, 7, 6 ½, … and correct it **What comes next?** 5 ½, 6 ½ , 7 ½ , …., …. 9 ½, 9, 8 ½, ……, …..

year 5