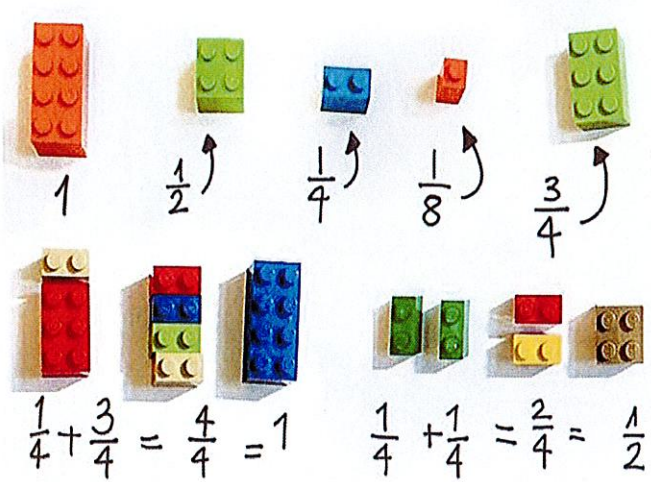
STOW-on-the-WOLD PRIMARY SCHOOL

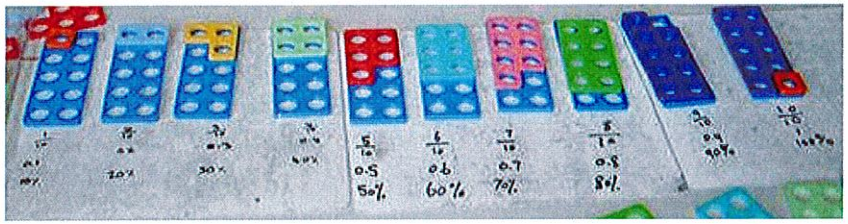
heart hand mind

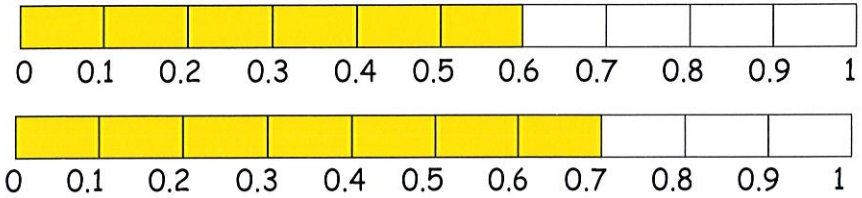
Fractions Policy

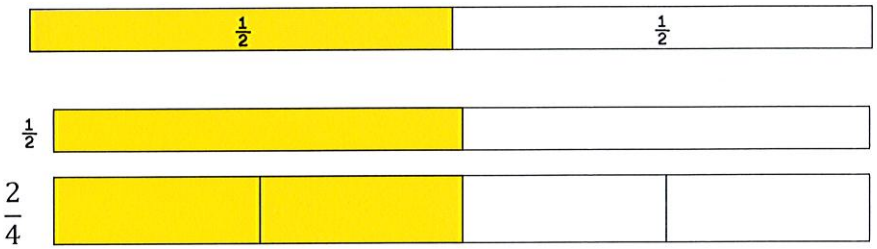
Approved by:	Full Governing Body	**Date:** 5th February 2024	
Last reviewed on:	1st February 2024	**Signature:**	T. A. Bartlett
Next review due by:	1st February 2025		**Chair of Governors**

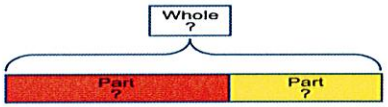
Overview

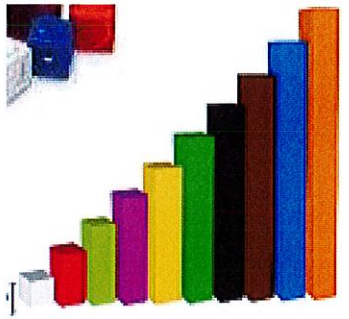








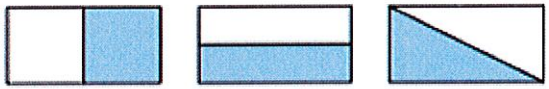




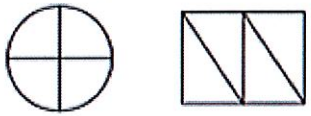
Cuisenaire

Strand	Stage 1	Stage 2
Recognise fractions, decimals and percentages	N/C: recognise, find and name a half as one of two equal parts of an object, shape or quantity N/C: recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	N/C: recognise, find, name and write fractions 1/3, 1/4, 2/4 and3/4 of a length, shape, set of objects or quantity N/C: write simple fractions e.g. 1/2 of 6 = 3 and recognise the equivalence of two quarters and one half.

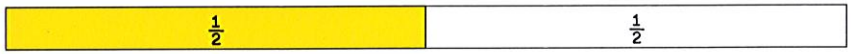
- **Find half of a variety of paper shapes by folding them in different ways into equal parts.**



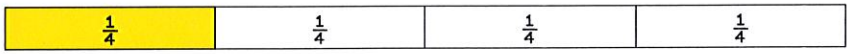
- **Shade half of each shape.**



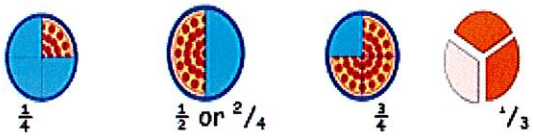
Shade $\frac{1}{2}$ of this shape yellow.



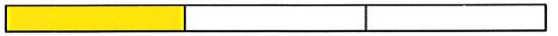
Shade $\frac{1}{4}$ of this shape yellow



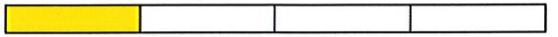
- Ring one half of this set of 10 buttons.



Shade 1/3 of this shape yellow.

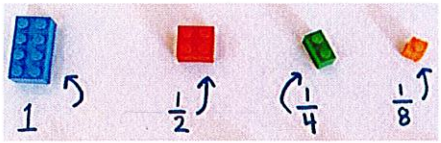


Shade 1/4 of this shape yellow

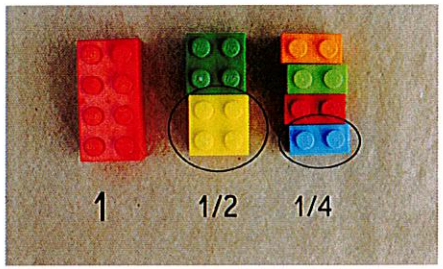


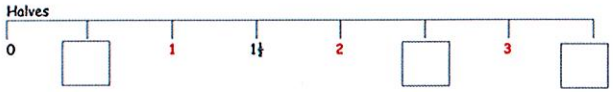
Shade 2/4 of this shape yellow

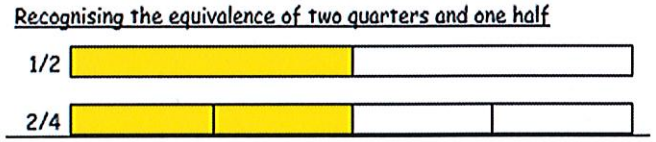
Shade 3/4 of this shape yellow



Strand	Stage 1	Stage 2
Counting fractions, decimals and percentages	N/A	N/C: Counting fractions up to ten starting from any number. N/C: To be able to recognise that 1/2 and 2/4 are equivalent.







Spot the mistake

7, 7 ½ , 8, 9, 10

8 ½, 8, 7, 6 ½,

What comes next?

5 ½, 6 ½ , 7 ½ , …., ….

9 ½, 9, 8 ½, ……, …..

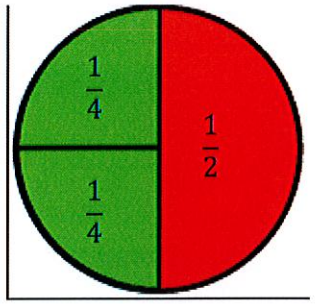
…and correct it.

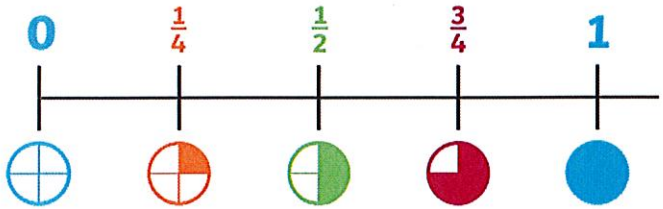
Strand	Stage 1	Stage 2
Comparing, ordering and rounding fractions, decimals and percentages	N/A	N/A

Strand	Stage 1	Stage 2
Adding and subtract fractions, decimals and percentages	N/A	N/A

Strand	Stage 1	Stage 2
Multiplying and dividing fractions, decimals and percentages	N/A	N/A

Strand	Stage 1	Stage 2
Equivalent fractions, decimals and percentages	N/A	N/C: Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.

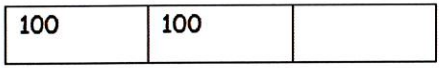




Strand	Stage 1	Stage 2
Convert between fractions, decimals and percentages	N/A	N/A

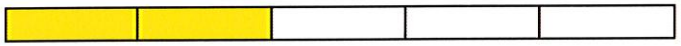
Strand	Stage 3	Stage 4
Recognise fractions, decimals and percentages	N/C: recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	N/C: recognise and show, using diagrams, families of common equivalent fractions

Liz drank $^1/_3$ of her drink. If there is 200ml left, how much drink was there to begin with?

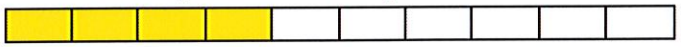


Calculate 3/5 of 20...

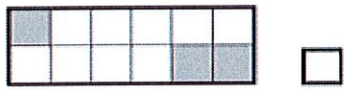
Find equivalent fractions to 2/5



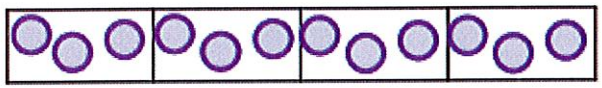
Take each fifth and split them into two pieces



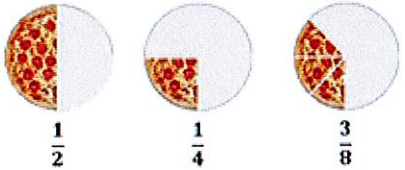
4/10 is therefore equivalent to 2/5

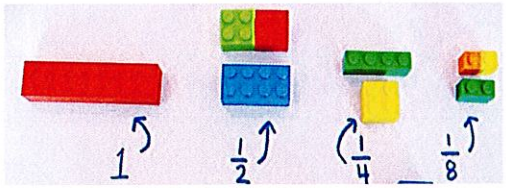


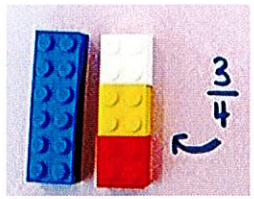
Dexter has used a bar model and counters to find $\frac{1}{4}$ of 12

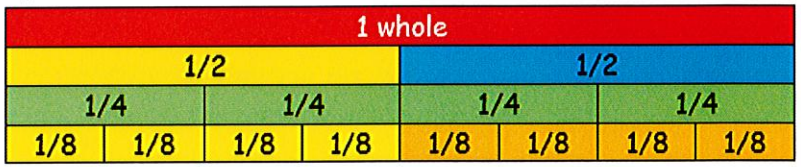


Amir uses a bar model and place value counters to find one quarter of 84

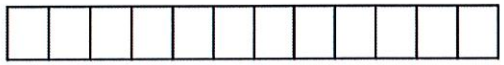








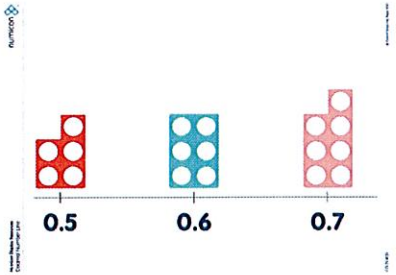
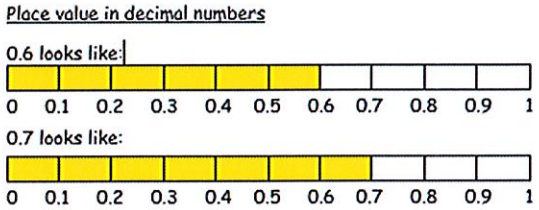
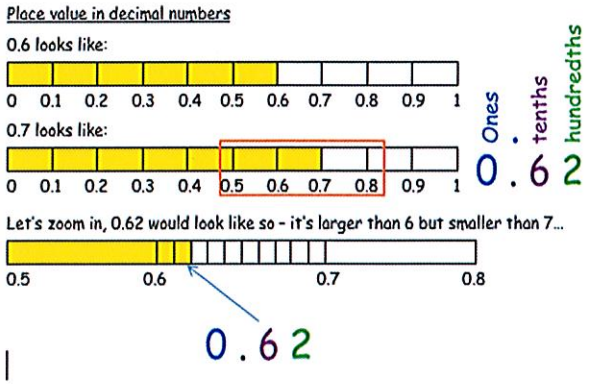
Using the diagram, complete the equivalent fractions.

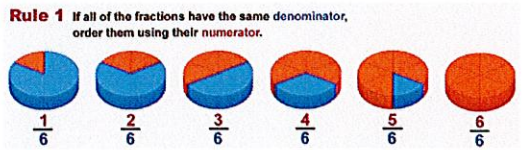
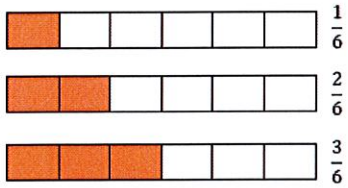
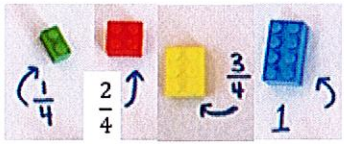
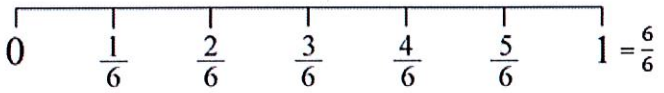
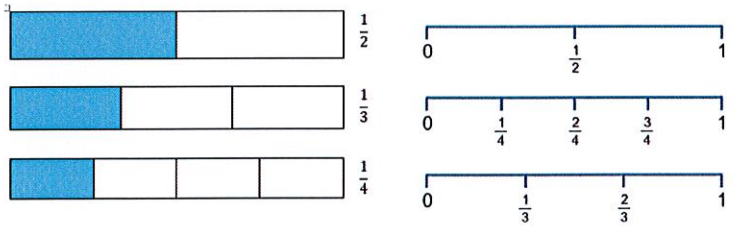
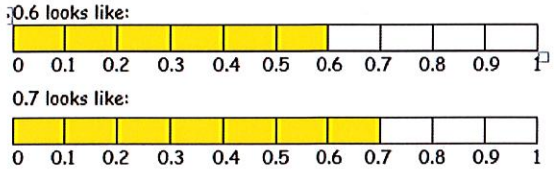
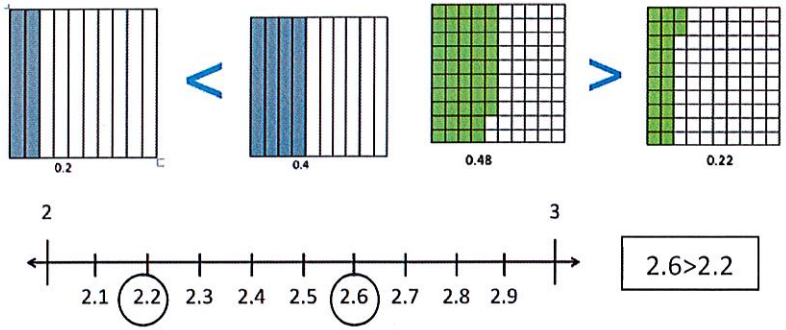
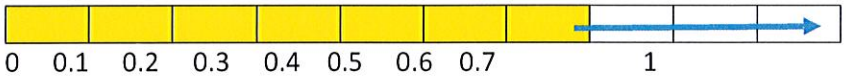
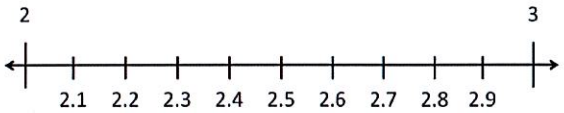


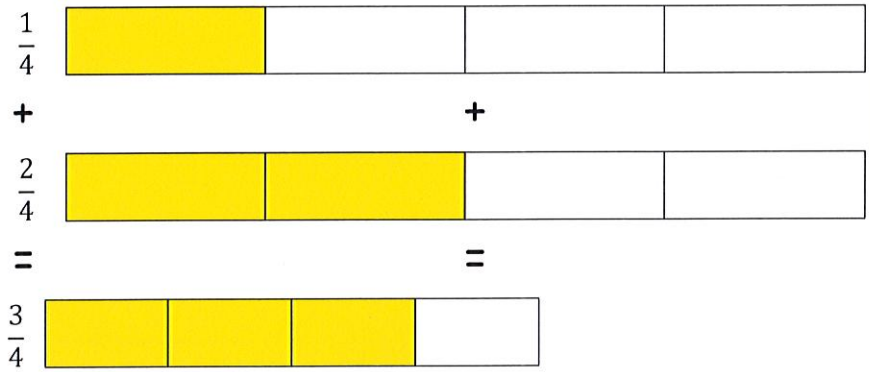
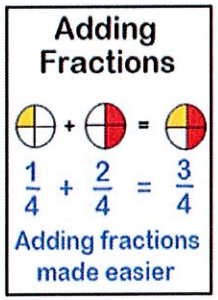
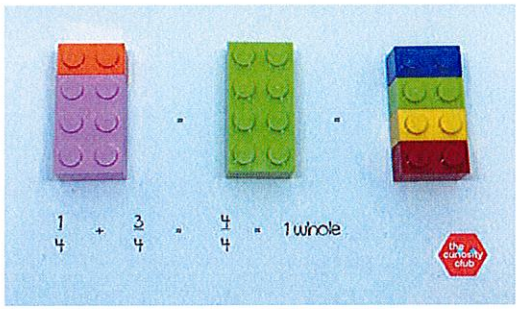
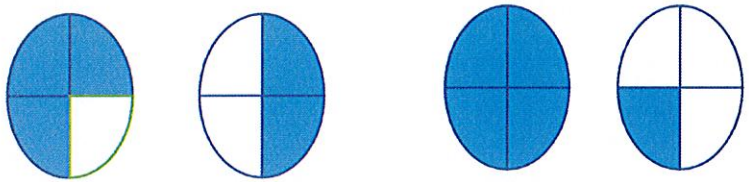
$\frac{1}{4} = \frac{\square}{12}$ $\frac{1}{\square} = \frac{6}{12}$ $\frac{2}{3} = \frac{\square}{12}$ $\frac{5}{12} = \frac{\square}{24}$

Using the diagram, complete the equivalent fractions.

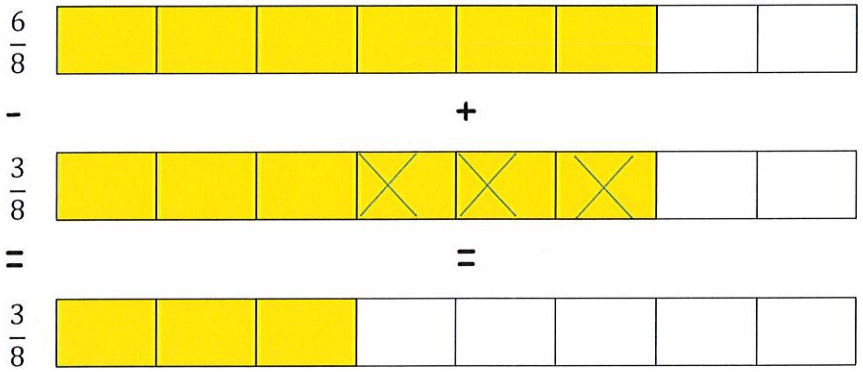
$\frac{1}{3} = \frac{\square}{6} = \frac{\square}{12} = \frac{\square}{24}$

Strand	Stage 3	Stage 4
Counting fractions, decimals and percentages	**N/C:** Count up and down in tenths; **N/C:** Recognise that tenths arise from **N/C:** Dividing an object into 10 equal parts.	**N/C: Counting in Fractional Steps** **N/C:** Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10
	  Fill in the missing number- 1.1 1.2 __ 1.4 __1.6 ___1.8 Circle the mistake - 1/10, 2/10, 3/10, 5/10, 6/10, 7/10	 Spot the mistake- sixty tenths, seventy tenths, eighty tenths, ninety tenths, twenty tenths ... and correct it. What comes next? $^{83}/_{100}$, $^{82}/_{100}$, $^{81}/_{100}$, ____, ____ $^{31}/_{100}$, $^{41}/_{100}$, $^{51}/_{100}$

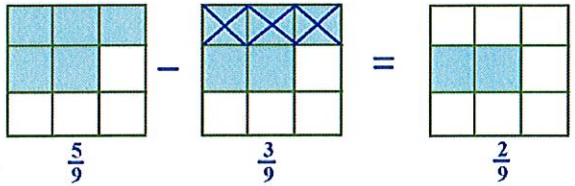
Strand	Stage 3	Stage 4
Comparing, ordering and rounding fractions, decimals and percentages	N/C: Compare and order unit fractions and fractions with the same denominator.	N/C: Compare numbers with the same number of decimal places up to two decimal places.
	    	 
		N/C: Round decimals with one decimal place to the nearest ten
		0.7 rounded to the nearest whole number...  Thought process: we can only go to the nearest whole numbers; here they are 0 and 1. 1 is closest, so you round up. 

Strand	Stage 3	Stage 4
Adding and subtract fractions, decimals and percentages	Add & subtract fractions with the same denominator within 1 whole. (e.g. $\frac{5}{7}+\frac{1}{7}=\frac{6}{7}$)	Add and subtract fractions with the same denominator
	$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$    https://www.lauracandler.com/how-to-teach-addition-of-fractions-using-lego-bricks/	 $\frac{2}{7}+\frac{2}{7}=$  $\frac{3}{5}+\frac{4}{5}=$  $\frac{3}{4} + \frac{2}{4} = \frac{5}{4}$ or $1\frac{1}{4}$ $\frac{6}{7} - \frac{2}{7} = \frac{4}{7}$  $\frac{11}{6} - \frac{4}{6} = \frac{7}{6}$

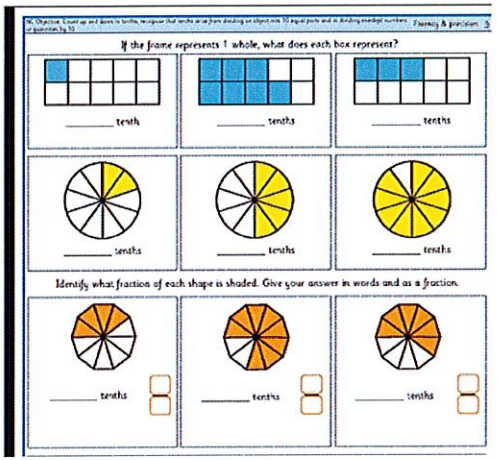
$\frac{6}{8} - \frac{3}{8} = \frac{3}{8}$



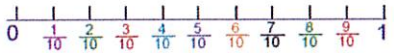
Thought Process:
As long the denominators are the same, you can add the numerators.



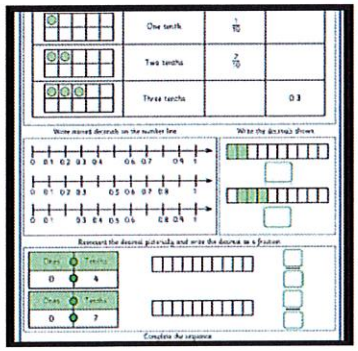
Strand	Stage 3	Stage 4
Multiplying and dividing fractions, decimals and percentages	N/C: **Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts**	N/C: Find the effect of multiplying a one- or two-digit number by 10 and 100, identifying the value of the digits as thousands, hundreds, tens and ones

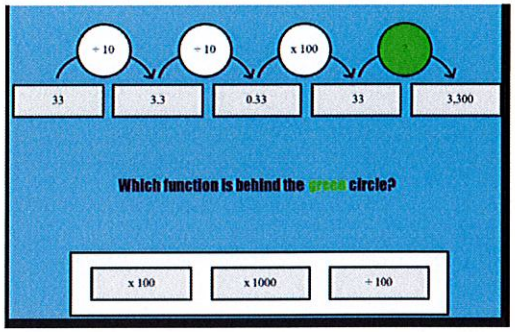


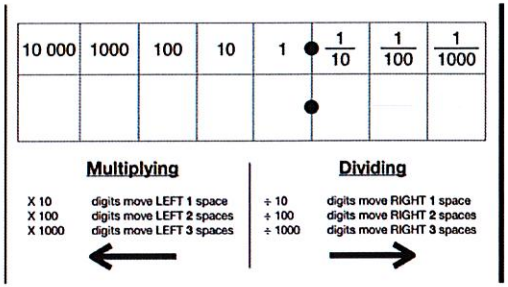
Use the $\frac{1}{10}$th number line.

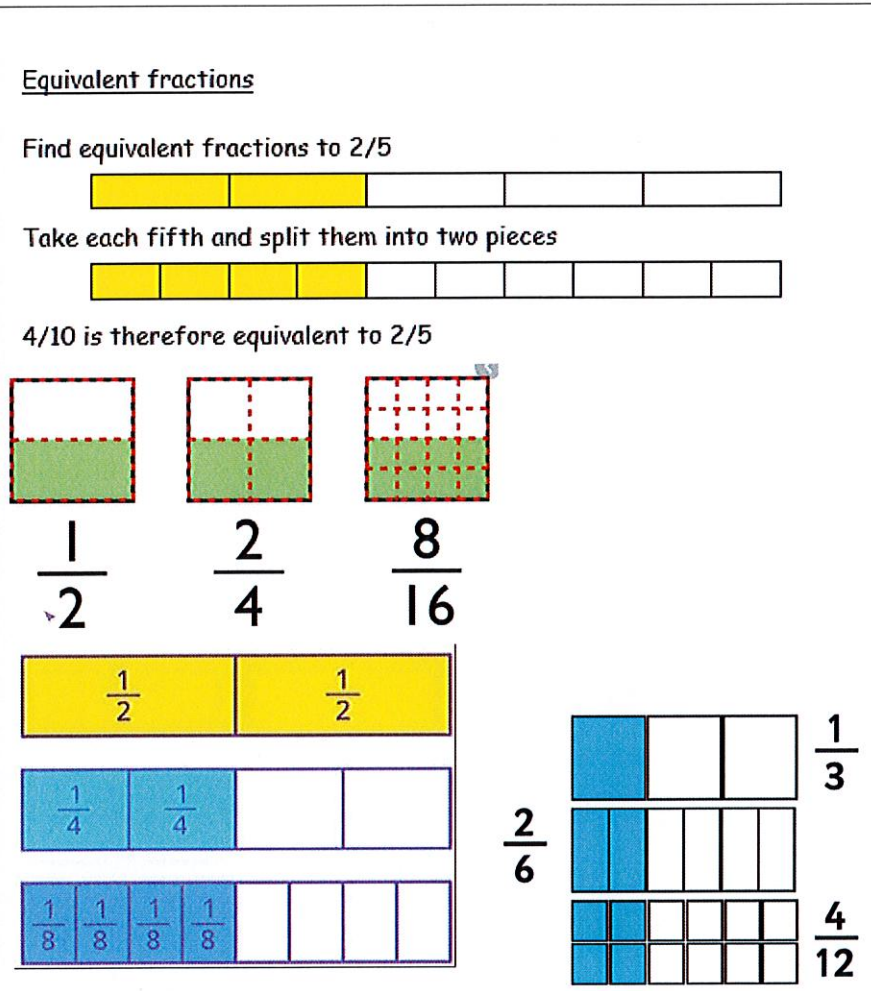
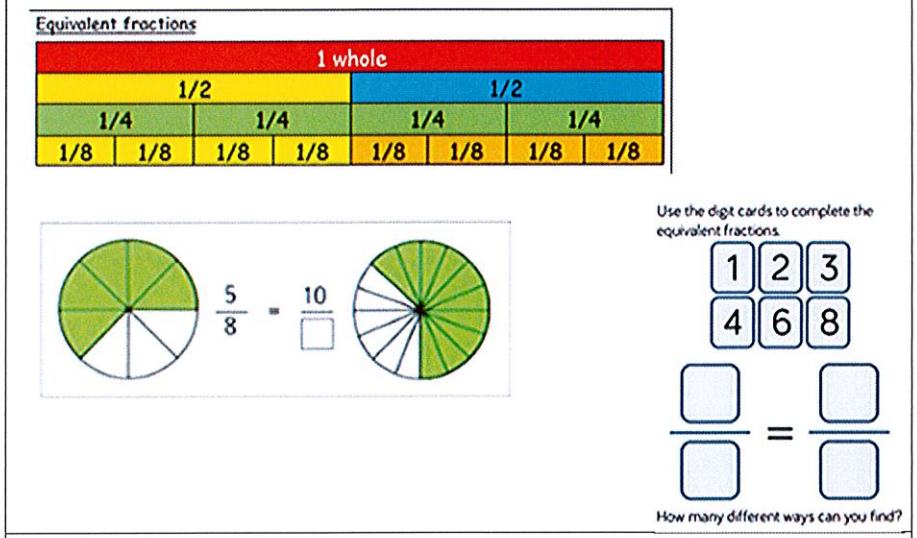
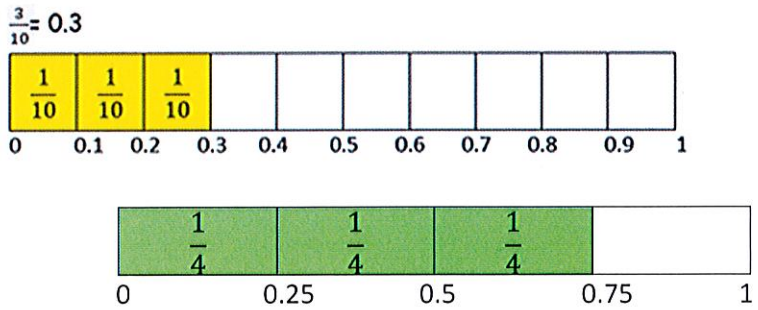


$$\frac{9}{10} - \frac{3}{10} - \frac{4}{10} = \square$$

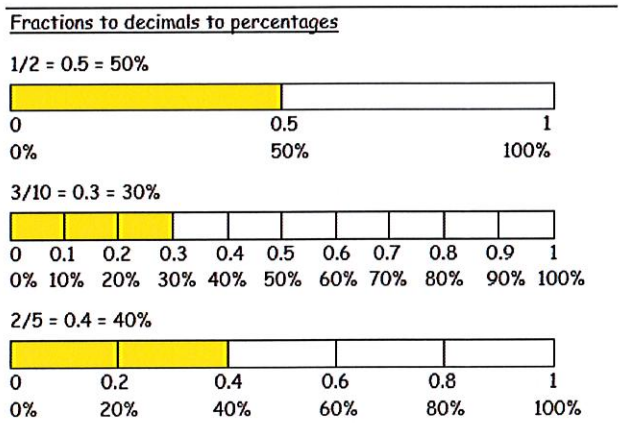




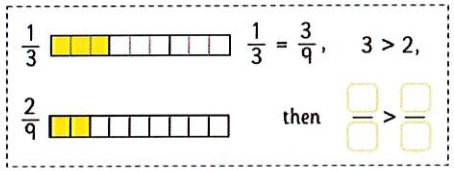
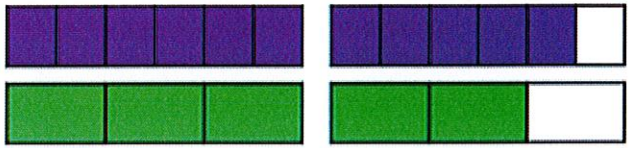
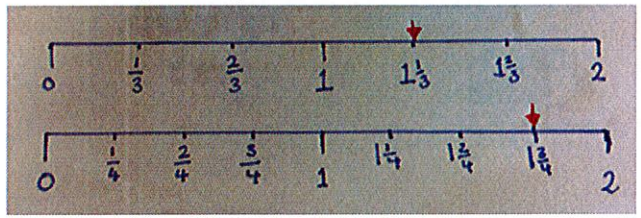
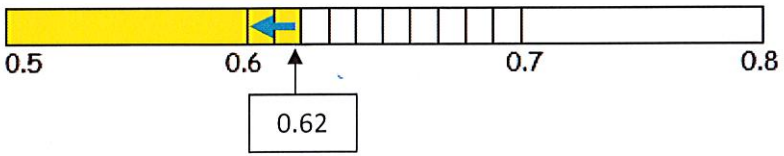


Strand	Stage 3	Stage 4
Equivalent fractions, decimals and percentages	N/C: Recognise and show, using diagrams, equivalent fractions with small denominators.	N/C: Recognise and show, using diagrams, equivalent fractions with small denominators.
		
		Recognise and write decimal equivalents of any number of tenths or hundredths; recognise and write decimal equivalents to $\frac{1}{2}, \frac{1}{4}, \frac{3}{4}$.
		

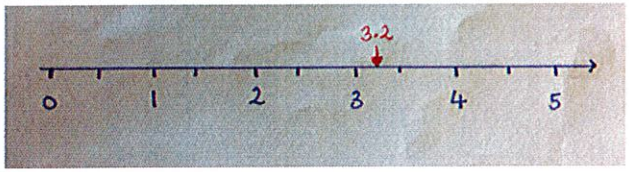
Strand	Stage 3	Stage 4
Convert between fractions, decimals and percentages	N/A	N/A

Strand	Stage 5	Stage 6
Recognise fractions, decimals and percentages	**N/C:** recognise the percent symbol (%) and understand that percent relates to "number of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction **N/C:** recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements	**N/A**
		

Strand	Stage 5	Stage 6
Counting fractions, decimals and percentages	**Consolidate learning from stages 2 - 4**	**Consolidate learning from stages 2 - 4**

Strand	Stage 5	Stage 6
Comparing, ordering and rounding fractions, decimals and percentages	N/C: Compare and order fractions whose denominators are all multiples of the same number.	N/C: Compare and order fractions, including fractions > 1.
	 Give an example of a fraction that is more than three quarters. Now another example that no one else will think of. Explain how you know the fraction is more than three quarters. Imran put these fractions in order starting with the smallest. Are they in the correct order? Two fifths, three tenths, four twentieths How do you know?	Use a bar model to compare $1\frac{2}{3}$ and $1\frac{5}{6}$  Compare $1\frac{3}{4}$ and $1\frac{1}{3}$ using a numberline. 
	Round decimals with 2 decimal places to the nearest whole number or to one decimal place.	
	Round 0.62 to one decimal place. 0.6 is the closest. 	Sam put these fractions in order starting with the smallest. Are they in the correct order? Thirty three fifths Twenty three thirds Forty five sevenths How do you know? Give an example of a **fraction** that is greater than 1.1 and less than 1.5. Now another example that no one will think of. Explain how you know.

Round 3.2 to the nearest whole number. 3 is closest.



Do, then explain

Circle each decimal which when rounded to one decimal place is 6.2.

6.32 6.23 6.27 6.17

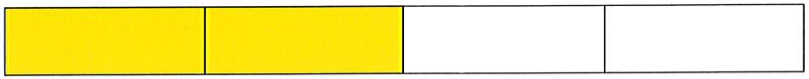
Explain your reasoning.

Strand	Stage 5	Stage 6
Adding and subtracting fractions, decimals and percentages	N/C: Add and subtract fractions with the same denominator and multiples of the same number	N/C: Add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions.

$\frac{1}{3} + \frac{2}{4} =$

$\frac{1}{3}$

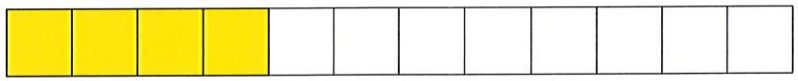
$\frac{2}{4}$



We need find a common denominator that appears in both multiplication tables...12. Split two bars into 12

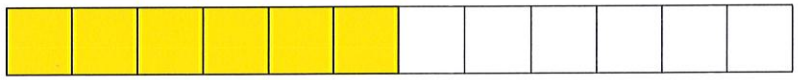
$\frac{1}{3} + \frac{2}{4}$ becomes $\frac{4}{12} + \frac{6}{12}$

$\frac{4}{12}$

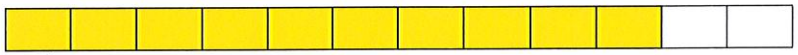


+

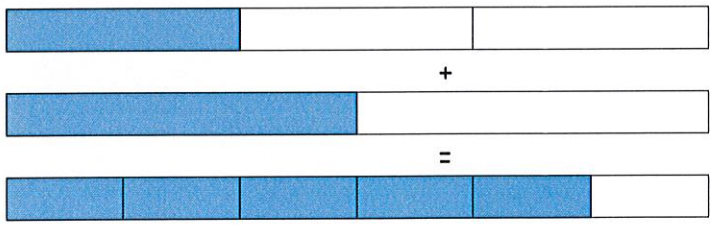
$\frac{6}{12}$



$= \frac{10}{12}$



$\frac{1}{3} + \frac{1}{2} = \frac{5}{6}$



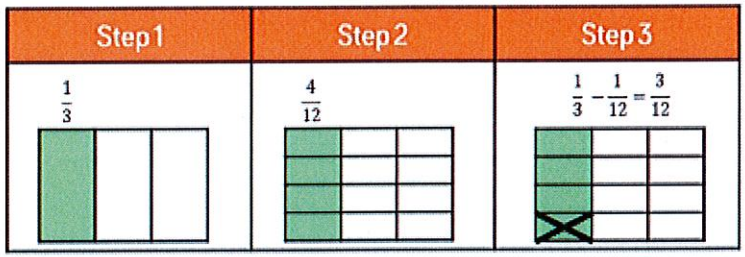
$2 + \frac{1}{3} =$

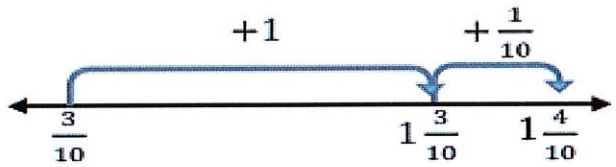
$= 2\frac{1}{3}$

$\frac{2}{3} + \frac{1}{4}$

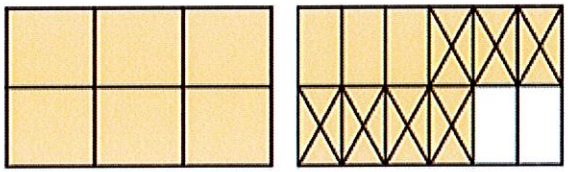
$\frac{2}{3} + \frac{1}{4} =$

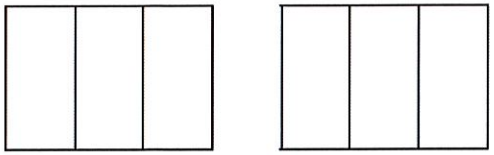
$\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$





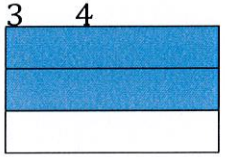
$1\frac{5}{6} - \frac{7}{12}$ becomes $1\frac{10}{12} - \frac{7}{12}$



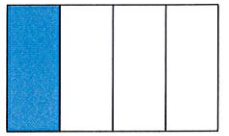
$2 - \frac{1}{3} =$ 

$= \frac{5}{3}$ or $1\frac{2}{3}$

$\frac{2}{3} - \frac{1}{4}$

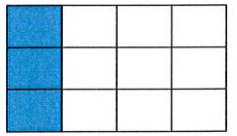


$\frac{2}{3}$ +

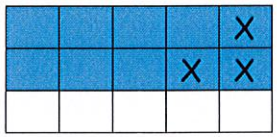


$\frac{1}{4}$ =

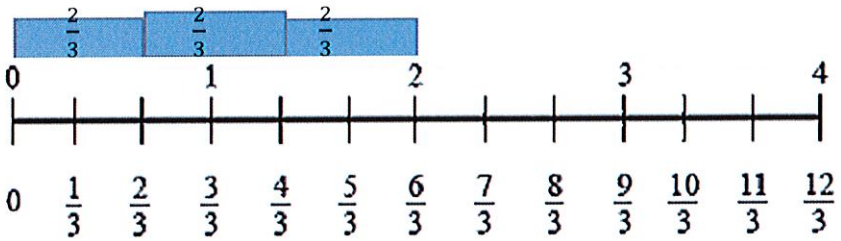
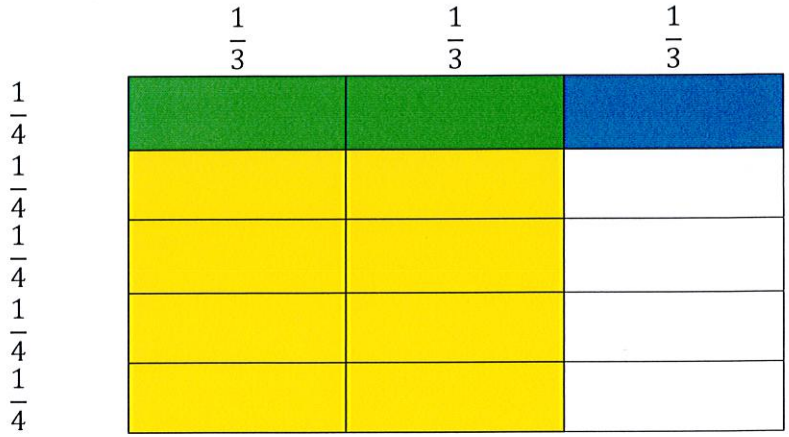
$\frac{8}{12}$ -

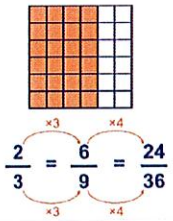
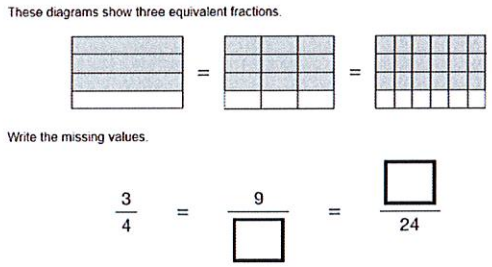
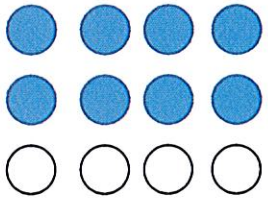
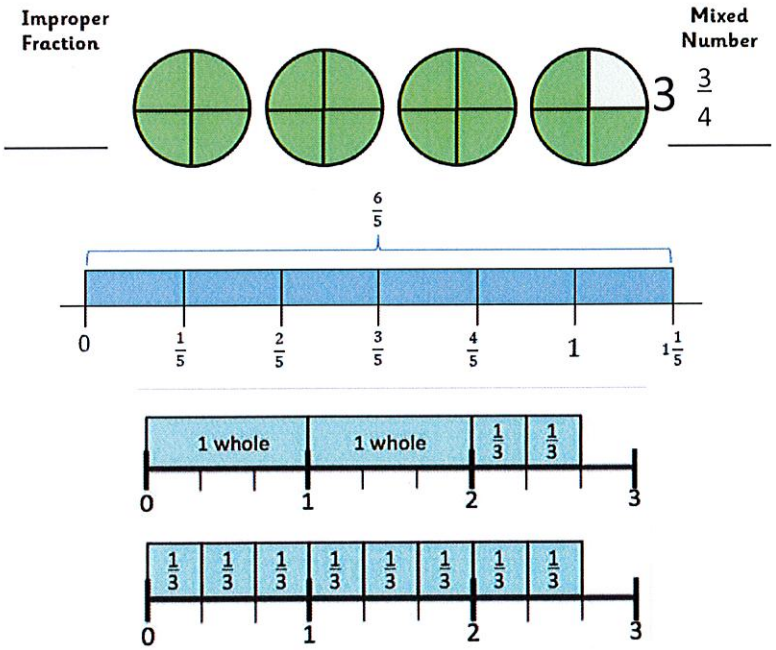
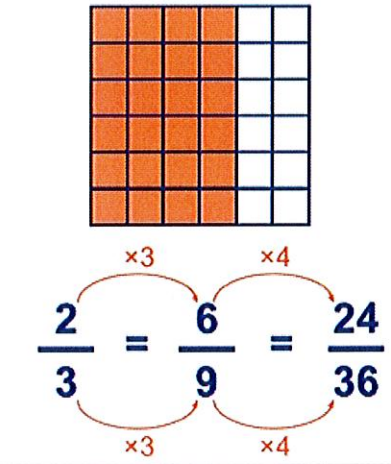


$\frac{3}{12} = \frac{11}{12}$



$= \frac{5}{8}$

Strand	Stage 5	Stage 6
Multiplying and dividing fractions, decimals and percentages	N/C: Multiply proper fractions and mixed number fractions by whole numbers, supported by materials and diagrams	N/C: Divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$)
	$\frac{2}{3} \times 3 = \frac{6}{3} = 2$ wholes 	$\frac{2}{3} \times \frac{1}{4} = \frac{2}{12}$ 

Strand	Stage 5	Stage 6
Equivalent fractions, decimals and percentages	N/C: identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	N/C: use common factors to simplify fractions; use common multiples to express fractions in the same denomination
	 	 $\frac{8}{12}$ of the counters are blue. $\frac{2}{3}$ of the rows are blue. ÷4 $\frac{8}{12} = \frac{2}{3}$ ÷4
	N/C: Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number	
		

Strand	Stage 3	Stage 4
Convert between fractions, decimals and percentages	N/C: Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	• N/C: Associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$)