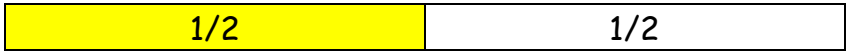
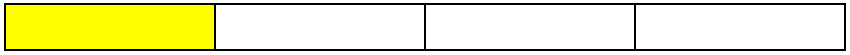
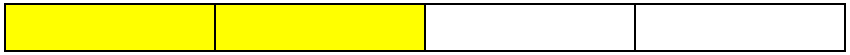
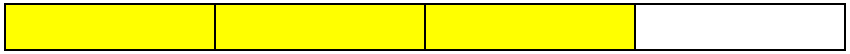
St Michael in the Hamlet Community Primary School

Fractions Policy

Date written: March 2020
Date to review: March 2022

Year Group	National Curriculum + Aspire Targets	Vocabulary + Strategies Image
Reception		
Stage 1	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 Aspire: F7 - I can name and find $\frac{1}{4}$ and $\frac{1}{2}$ of a shape, an object or a quantity of objects	Shading fractions of shape Shade 1/2 of this shape yellow.  Shade 1/4 of this shape yellow 
Stage 2	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 F9* - I can find and name $^1/_3$, $^1/_4$, $^2/_4$, and $^3/_4$ of a length, shape, set of objects or quantity	Shading fractions of shape 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 
Stage 2	N/C: write simple fractions e.g. 1/2 of 6 = 3 and recognise the equivalence of two quarters and one half.	Recognising simple fractions What's a half of 6?

<table>
<tr>
<td></td>
<td>Aspire: F10 - I can write simple fractions e.g. $^1/_2$ of 6 = 3 and recognise the equivalence of two quarters and one half.</td>
<td>


Thought Process:
For a half, divide the whole number by 2.

<u>Recognising the equivalence of two quarters and one half</u>


</td>
</tr>
<tr>
<td rowspan="2">Stage 3</td>
<td>N/C: count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10

Aspire: F9 - I can count up and down in tenths

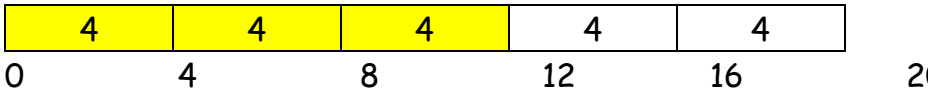
Aspire C5: I can show that tenths that arise from dividing a single digit number or a quantity by 10 are represented by a decimal number</td>
<td><u>Place value in decimal numbers</u>

0.6 looks like:

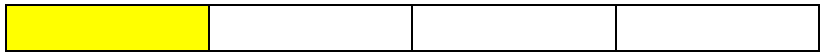
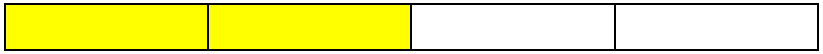
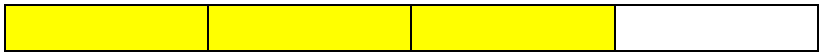

0.7 looks like:


</td>
</tr>
<tr>
<td>N/C: recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators

Aspire: F10 - I can recognise, find and write fractions of a discrete set of objects or numbers using fractions with a small denominator or a denominator of 1 and put these in order</td>
<td><u>Fractions of an amount</u>

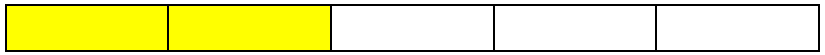
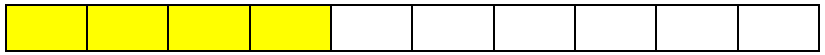
Calculate 3/5 of 20…


Thought process: there are 2 steps…
1. Divide the given amount by the denominator, (20 ÷ 5 = 4)
2. Multiply the answer by the numerator (4 x 3 = 12)</td>
</tr>
<tr>
<td>Stage 3</td>
<td>N/C: add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7)</td>
<td><u>Adding fractions with the same denominator</u></td>
</tr>
</table>

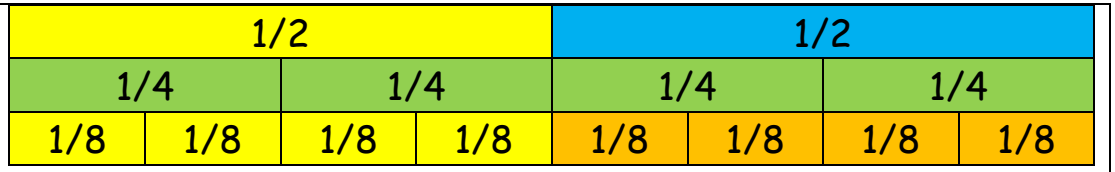
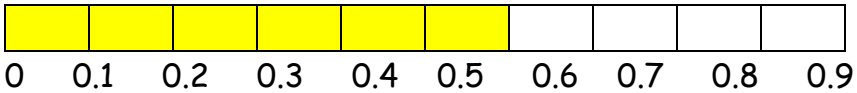
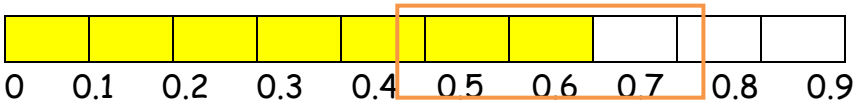
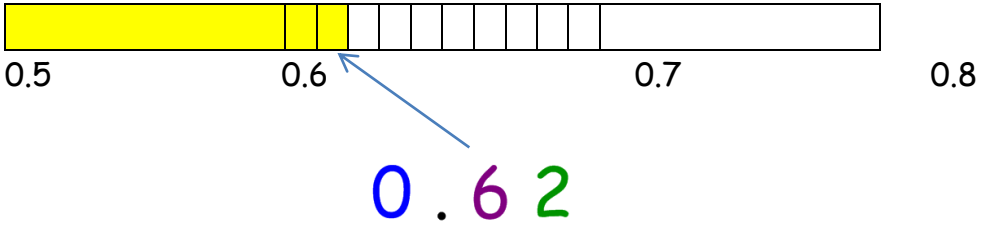
<table>
<tr><td rowspan="2"></td><td>Aspire: F11 - I can add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7)</td><td>1/4 + 2/4
1/4 
+ +
2/4 
= =
3/4 

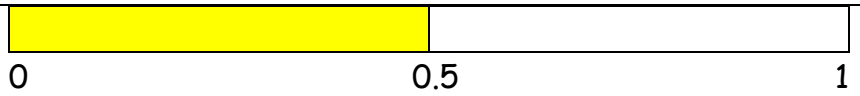
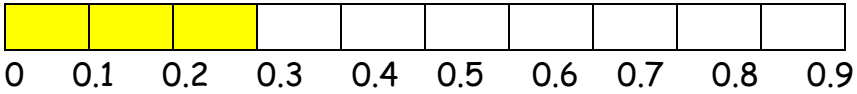
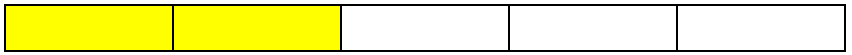
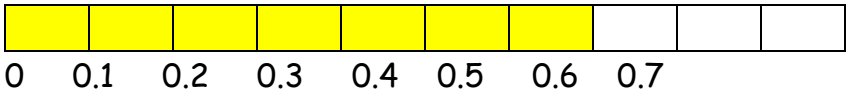
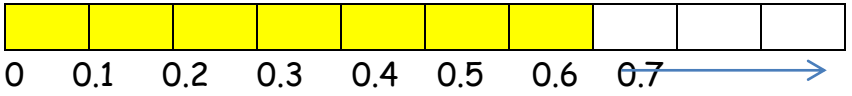
Thought Process:
As long the denominators are the same, you can add or subtract the numerators.</td></tr>
<tr><td>N/C: recognise and show, using diagrams, equivalent fractions with small denominators

Aspire: C7 - I can recognise and show, using diagrams, equivalent fractions with small denominators</td><td><u>Equivalent fractions</u>

Find equivalent fractions to 2/5
 
Take each fifth and split them into two pieces
 
4/10 is therefore equivalent to 2/5

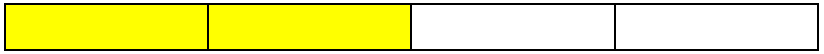
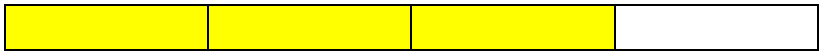
Thought Process:
Find equivalent fractions: identify the common denominator, using knowledge of multiples and multiply the numerator by the factor used to find the common denominator, which will be different for both fraction.</td></tr>
<tr><td>Stage 4</td><td>N/C: recognise and show, using diagrams, families of common equivalent fractions</td><td><u>Equivalent fractions</u>
1 whole</td></tr>
</table>

	Aspire: F9 - I can recognise show and name, using diagrams, families of common equivalent fractions including tenths and hundredths	
	N/C: recognise and write decimal equivalents of any number of tenths or hundredths Aspire: F10* - I can count up and down in hundredths Aspire: C6* - I can recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.	<u>Place value in decimal numbers</u> 0.6 looks like:  0.7 looks like:   Let's zoom in, 0.62 would look like so – it's larger than 6 but smaller than 7… 
Stage 4	N/C: recognise and write decimal equivalents to 1/4, 1/2, and 3/4	<u>Fractions to decimals and vice versa</u> 1/2 = 0.5

	Aspire: F11* - I can recognise and write decimal equivalents of $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$, $^{n}/_{10}$ and $^{n}/_{100}$	 3/10 = 0.3  2/5 = 0.4  Thought process: Divide the denominator by the numerator. 1/2 as a decimal = 2 ÷ 1 = 0.5
	N/C: round decimals with one decimal place to the nearest whole number Aspire: F12* - I can round decimals with one decimal place to the nearest whole number	<u>Place value in decimal numbers – Rounding</u> 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. We need to remember the rule for rounding. An easy rhyme to remember; 1, 2, 3, 4 - down to the floor. 5, 6, 7, 8, 9, - up we climb. *(rounding down)* *(rounding up)* 0.7 rounded to the nearest whole number… "5, 6, <u>7</u>, 8, 9 – up we climb," we therefore will round up to 1; our nearest whole number. 

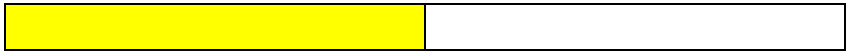
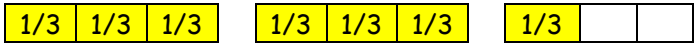
<table>
<tr>
<td>Stage 4</td>
<td>N/C: add and subtract fractions with the same denominator

C8 - I can add and subtract fractions with the same denominator</td>
<td><u>Adding fractions with the same denominator</u>

1/4 + 2/4
1/4
 
+ +
2/4
 
= =
3/4
 
Reverse for subtraction</td>
</tr>
<tr>
<td>Stage 5</td>
<td>N/C: add and subtract fractions with the same denominator and multiples of the same number.

Aspire: C8* - I can add and subtract fractions with the same denominator and related fractions including writing mathematical statements that exceed 1 as a mixed number: (e.g. 2/5 + 4/5 = 6/5 = $1^1/_5$)</td>
<td><u>Adding fractions with different denominators</u>
1/3 + 2/4
1/3
 
+ +
2/4
 
We need find a common denominator that appears in both multiplication tables…12. Split two bars into 12

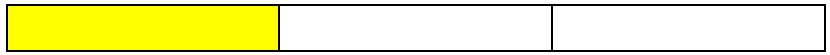
1/3 + 2/4 becomes 4/12 + 6/12
4/12
 
+ +
6/12
 
= 10/12
  </td>
</tr>
</table>

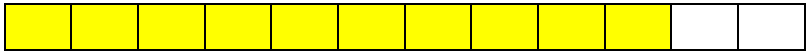
Stage 5	N/C: recognise the percent symbol (%) and understand that percent relates to "number of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction Aspire: F16* - I can write simple fractions as percentages and decimalized percentages (e.g. ½ = 50% = 0.5)	<u>Fractions to decimals to percentages</u> 1/2 = 0.5 = 50%  0 0.5 1 0% 50% 100% 3/10 = 0.3 = 30%  0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% 2/5 = 0.4 = 40%  0 0.2 0.4 0.6 0.8 1 0% 20% 40% 60% 80% 100% Thought process: Divide the denominator by the numerator and multiply by 100 1/2 as a decimal = 2 ÷ 1 = 0.5 x 100 = 50%
	N/C: recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements Aspire: F13 - I can recognise mixed numbers and improper fractions and convert from one form to the other	<u>Mixed numbers to improper fractions and vice versa</u> Convert 2 1/3 into an improper fraction.  Convert these now into thirds, how many thirds are there?  = 7/3

		Thought process: Multiply the whole number by the denominator, to find the improper fraction for the whole number and then add the extra numerators. e.g. $2\frac{}{}$ = 6/3 + 1/3 = 7/3

Stage 6	F8: I can use common factors to simplify fractions and use common multiples to express fractions in the same denomination	Thought Process: Use knowledge of multiplication tables to identify common factors to simplify fractions.
	F9*: I can compare and order any fraction, including fractions >1	Thought Process: To order fractions, first find equivalent fractions with a common denominator: • Use knowledge of multiplication tables to identify common denominators (multiples). • Identify the factor with which to calculate the common denominator and then multiple the numerator by the same factor. • Order on a number line • Return to original fractions.

	F12: I can use percentages for comparison and calculate percentages of whole numbers or measures such as 15% of 360 :all steps in fraction policy please	Thought Process: To find a percentage of given amount: • Convert the percentage into a fraction • Divide amount given by denominator • Multiply answer by numerator
	F13* - I can recall and use equivalences between simple fractions, decimals and percentages including in different contexts	Thought Process: • To convert fractions to decimals: numerator divided by the denominator • To convert decimals to a percentage: multiply the decimal by 100 • Convert decimals to fractions: Identify the place value of tenths, hundredths or thousandths.

+	C2 - I can calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$) and explain how I've done it	Thought Process: • Convert decimals to fractions e.g. 0.375: • Identify the place value of tenths, hundredths or thousandths. E.g. 1000 • Record digits of the decimal as the numerator: 375/1000 • Convert to its simplest form e.g. 3/8
	C3 - I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	<u>Adding fractions with different denominators</u> 1/3 + 2/4 1/3  + +

		2/4  We need find a common denominator that appears in both multiplication tables…12. Split two bars into 12 1/3 + 2/4 becomes 4/12 + 6/12 4/12  + + 6/12  = 10/12 
	C4: I can multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = 1/8$)	Thought Process: • Multiply the numerator of each fraction • Multiply the denominator of each fraction • Simplify fractions using common factors
	C5: I can divide proper fractions by whole numbers (e.g $^1/_3 \div 2 = 6$)	Thought Process: • When dividing fraction by whole number e.g. $\frac{1}{4} \div 4$ • Convert whole number into a fractions= $\frac{1}{4} \div \frac{4}{1} =$ • Upturn the second fraction (this is now a reciprocal) and then

		multiply $\frac{1}{4} \times \frac{1}{4} = \frac{2}{16}$ • Finally simplify to its lowest from = $\frac{1}{8}$

To be reviewed: March 2022