


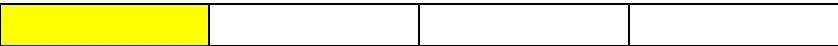



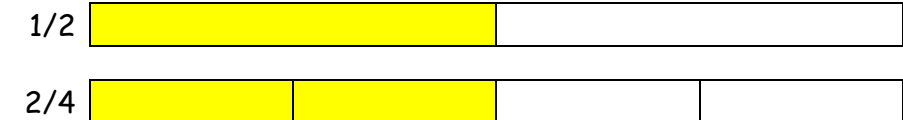
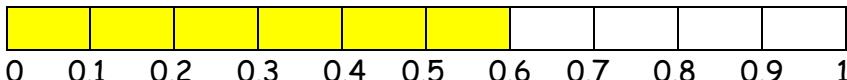
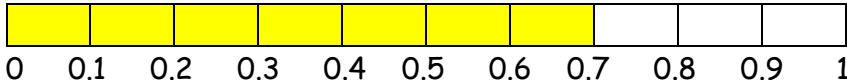
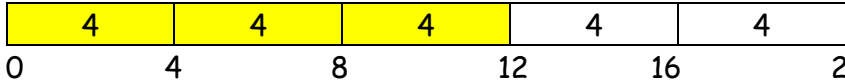
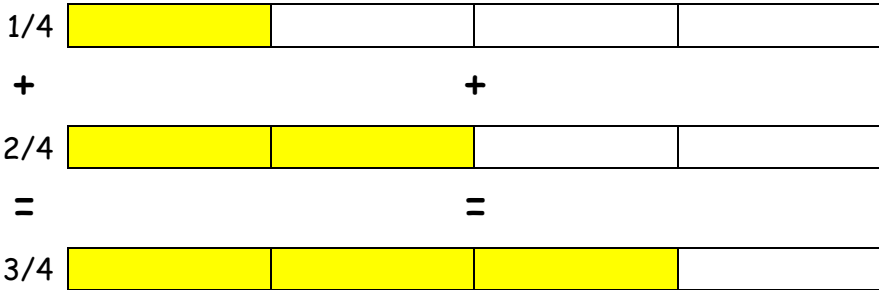





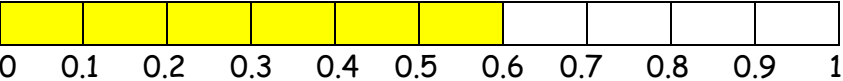
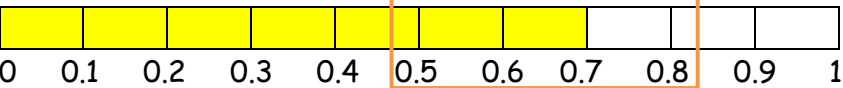
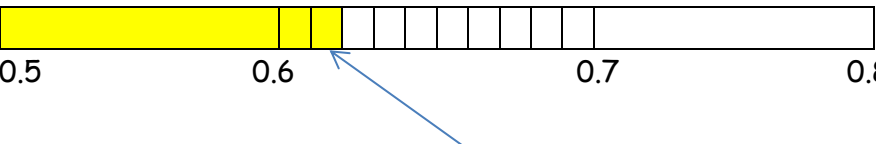


Whole School Fraction Policy
Pencil and Paper Procedures
Stages 1-6

<u>Year Group</u>	<u>National Curriculum + Aspire Targets</u>	<u>Vocabulary + Strategies</u> <u>Image</u>
Reception		
Stage 1	<p>N/C: recognise, find and name a half as one of two equal parts of an object, shape or quantity</p> <p>N/C: recognise, find and name a quarter as one of four equal parts of an object, shape or quantity</p> <p>Aspire: F7 - I can name and find $\frac{1}{4}$ and $\frac{1}{2}$ of a shape, an object or a quantity of objects</p>	<p><u>Shading fractions of shape</u></p> <p>Shade $\frac{1}{2}$ of this shape yellow.</p>  <p>Shade $\frac{1}{4}$ of this shape yellow</p> 
Stage 2	<p>N/C: recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity</p> <p>F9* - I can find and name $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of a length, shape, set of objects or quantity</p>	<p><u>Shading fractions of shape</u></p> <p>Shade $\frac{1}{3}$ of this shape yellow.</p>  <p>Shade $\frac{1}{4}$ of this shape yellow</p>  <p>Shade $\frac{2}{4}$ of this shape yellow</p>  <p>Shade $\frac{3}{4}$ of this shape yellow</p> 

<p>Stage 2</p>	<p>N/C: write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of two quarters and one half.</p> <p>Aspire: F10 - I can write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of two quarters and one half.</p>	<p><u>Recognising simple fractions</u></p> <p>What's a half of 6?</p>  <p>Thought Process: For a half, divide the whole number by 2.</p> <p><u>Recognising the equivalence of two quarters and one half</u></p> 
<p>Stage 3</p>	<p>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</p> <p>Aspire: F9 - I can count up and down in tenths</p> <p>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</p>	<p><u>Place value in decimal numbers</u></p> <p>0.6 looks like:</p>  <p>0.7 looks like:</p> 

	<p>N/C: recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</p> <p>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</p>	<p><u>Fractions of an amount</u></p> <p>Calculate $\frac{3}{5}$ of 20...</p>  <p>Thought process: there are 2 steps...</p> <ol style="list-style-type: none"> 1. Divide the given amount by the denominator, $(20 \div 5 = 4)$ 2. Multiply the answer by the numerator $(4 \times 3 = 12)$
<p>Stage 3</p>	<p>N/C: add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)</p> <p>Aspire: F11 - I can add and subtract fractions with the same denominator within one whole (e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)</p>	<p><u>Adding fractions with the same denominator</u></p> <p>$\frac{1}{4} + \frac{2}{4}$</p>  <p>Thought Process: As long as the denominators are the same, you can add or subtract the numerators.</p>
	<p>N/C: recognise and show, using diagrams, equivalent fractions with small denominators</p> <p>Aspire: C7 - I can recognise and show, using</p>	<p><u>Equivalent fractions</u></p> <p>Find equivalent fractions to $\frac{2}{5}$</p>

	<p>diagrams, equivalent fractions with small denominators</p>	 <p>Take each fifth and split them into two pieces</p>  <p>4/10 is therefore equivalent to 2/5</p> <p>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.</p>
<p>Stage 4</p>	<p>N/C: recognise and show, using diagrams, families of common equivalent fractions</p> <p>Aspire: F9 - I can recognise show and name, using diagrams, families of common equivalent fractions including tenths and hundredths</p>	<p><u>Equivalent fractions</u></p> 
	<p>N/C: recognise and write decimal equivalents of any number of tenths or hundredths</p> <p>Aspire: F10* - I can count up and down in hundredths</p> <p>Aspire: C6* - I can recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten.</p>	<p><u>Place value in decimal numbers</u></p> <p>0.6 looks like:</p>  <p>0.7 looks like:</p>  <p>Let's zoom in, 0.62 would look like so - it's larger than 6 but smaller than 7...</p>  <p>0 Ones . 6 tenths 2 hundredths</p>

0.62

Stage 4

N/C: recognise and write decimal equivalents to $1/4$, $1/2$, and $3/4$

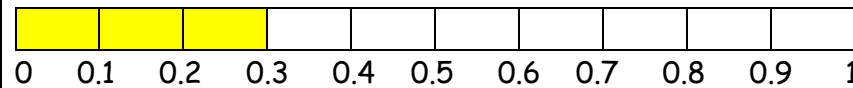
Aspire: F11* - I can recognise and write decimal equivalents of $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$, $\frac{n}{10}$ and $\frac{n}{100}$

Fractions to decimals and vice versa

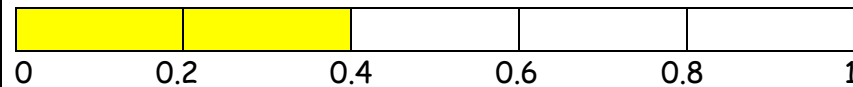
$1/2 = 0.5$



$3/10 = 0.3$



$2/5 = 0.4$



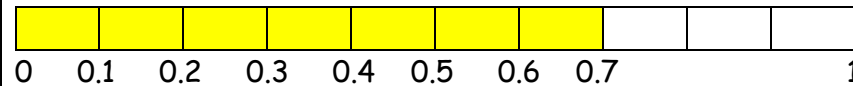
Thought process: Divide the denominator by the numerator.
 $1/2$ as a decimal = $2 \div 1 = 0.5$

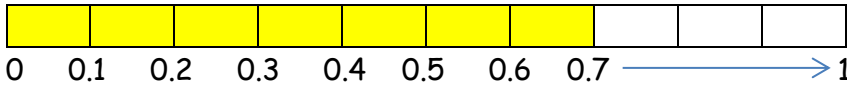
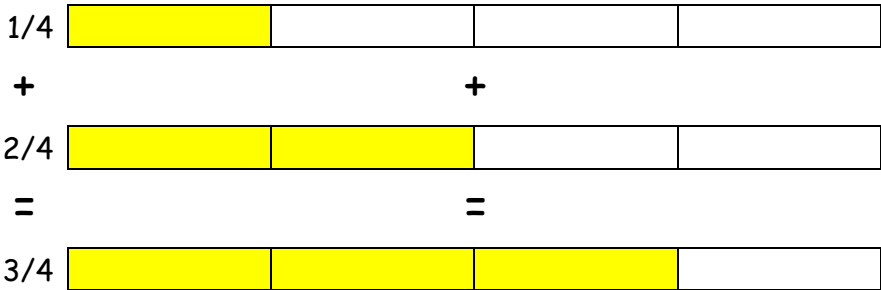
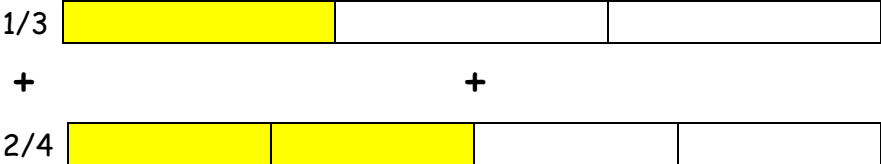
N/C: round decimals with one decimal place to the nearest whole number


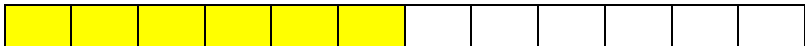



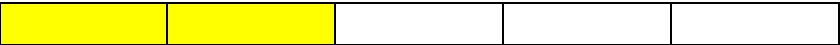
Aspire: F12* - I can round decimals with one decimal place to the nearest whole number

Place value in decimal numbers - Rounding

0.7 rounded to the nearest whole number...



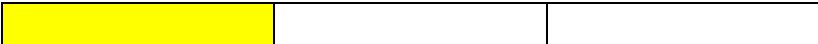

		<p>Thought process: we can only go to the nearest whole numbers; here they are 0 and 1. We need to remember the rule for rounding. An easy rhyme to remember:</p> <p style="text-align: center;">1, 2, 3, 4 - down to the floor. 5, 6, 7, 8, 9, - up we climb. <i>(rounding down)</i> <i>(rounding up)</i></p> <p>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.</p> 
<p style="text-align: center;">Stage 4</p>	<p>N/C: add and subtract fractions with the same denominator</p> <p>C8 - I can add and subtract fractions with the same denominator</p>	<p><u>Adding fractions with the same denominator</u></p> <p>$1/4 + 2/4$</p>  <p>Reverse for subtraction</p>
<p style="text-align: center;">Stage 5</p>	<p>N/C: add and subtract fractions with the same denominator and multiples of the same number.</p> <p>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. $2/5 + 4/5 = 6/5 = 1\frac{1}{5}$)</p>	<p><u>Adding fractions with different denominators</u></p> <p>$1/3 + 2/4$</p>  <p>We need find a common denominator that appears in both multiplication tables...12. Split two bars into 12</p>




		$\frac{1}{3} + \frac{2}{4} \quad \text{becomes} \quad \frac{4}{12} + \frac{6}{12}$ $\frac{4}{12}$  $+$ $\frac{6}{12}$  $= \frac{10}{12}$ 																																								
<p>Stage 5</p>	<p>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</p> <p>Aspire: F16* - I can write simple fractions as percentages and decimalized percentages (e.g. $\frac{1}{2} = 50\% = 0.5$)</p>	<p><u>Fractions to decimals to percentages</u></p> <p>$\frac{1}{2} = 0.5 = 50\%$</p>  <table style="width: 100%; text-align: center;"> <tr> <td>0</td> <td>0.5</td> <td>1</td> </tr> <tr> <td>0%</td> <td>50%</td> <td>100%</td> </tr> </table> <p>$\frac{3}{10} = 0.3 = 30\%$</p>  <table style="width: 100%; text-align: center;"> <tr> <td>0</td> <td>0.1</td> <td>0.2</td> <td>0.3</td> <td>0.4</td> <td>0.5</td> <td>0.6</td> <td>0.7</td> <td>0.8</td> <td>0.9</td> <td>1</td> </tr> <tr> <td>0%</td> <td>10%</td> <td>20%</td> <td>30%</td> <td>40%</td> <td>50%</td> <td>60%</td> <td>70%</td> <td>80%</td> <td>90%</td> <td>100%</td> </tr> </table> <p>$\frac{2}{5} = 0.4 = 40\%$</p>  <table style="width: 100%; text-align: center;"> <tr> <td>0</td> <td>0.2</td> <td>0.4</td> <td>0.6</td> <td>0.8</td> <td>1</td> </tr> <tr> <td>0%</td> <td>20%</td> <td>40%</td> <td>60%</td> <td>80%</td> <td>100%</td> </tr> </table> <p>Thought process: Divide the denominator by the numerator and multiply by 100 $\frac{1}{2}$ as a decimal = $2 \div 1 = 0.5 \times 100 = 50\%$</p>	0	0.5	1	0%	50%	100%	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%	0	0.2	0.4	0.6	0.8	1	0%	20%	40%	60%	80%	100%
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0%	20%	40%	60%	80%	100%																																					
	<p>N/C: recognise mixed numbers and improper fractions and convert from one form to the other</p>	<p><u>Mixed numbers to improper fractions and vice versa</u></p>																																								

	<p>and write mathematical statements</p> <p>Aspire: F13 - I can recognise mixed numbers and improper fractions and convert from one form to the other</p>	<p>Convert $2 \frac{1}{3}$ into an improper fraction.</p> <p><input type="text" value="1"/> <input type="text" value="1"/> <input type="text" value="1/3"/> <input type="text"/> <input type="text"/></p> <p>Convert these now into thirds, how many thirds are there?</p> <p><input type="text" value="1/3"/> <input type="text" value="1/3"/> <input type="text" value="1/3"/> <input type="text" value="1/3"/> <input type="text" value="1/3"/> <input type="text" value="1/3"/> <input type="text" value="1/3"/> <input type="text"/> <input type="text"/></p> <p>= $\frac{7}{3}$</p> <p>Thought process: Multiply the whole number by the denominator, to find the improper fraction for the whole number and then add the extra numerators.</p> <p>e.g. $2 = \frac{6}{3} + \frac{1}{3} = \frac{7}{3}$</p>
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Stage 6	<p>F8: I can use common factors to simplify fractions and use common multiples to express fractions in the same denomination</p>	<p>Thought Process: Use knowledge of multiplication tables to identify common factors to simplify fractions.</p>
	<p>F9*: I can compare and order any fraction, including fractions >1</p>	<p>Thought Process: To order fractions, first find equivalent fractions with a common denominator:</p> <ul style="list-style-type: none"> • 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.

	<p>F12: I can use percentages for comparison and calculate percentages of whole numbers or measures such as 15% of 360</p> <p>:all steps in fraction policy please</p>	<p>Thought Process: To find a percentage of given amount:</p> <ul style="list-style-type: none"> • Convert the percentage into a fraction • Divide amount given by denominator • Multiply answer by numerator
	<p>F13* - I can recall and use equivalences between simple fractions, decimals and percentages including in different contexts</p>	<p>Thought Process:</p> <ul style="list-style-type: none"> • 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.

	<p>C2 - I can calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $\frac{3}{8}$) and explain how I've done it</p>	<p>Thought Process:</p> <ul style="list-style-type: none"> • 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. $\frac{3}{8}$
	<p>C3 - I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p>	<p><u>Adding fractions with different denominators</u></p> <p>$\frac{1}{3} + \frac{2}{4}$</p> <p>$\frac{1}{3}$ </p> <p>+</p> <p>$\frac{2}{4}$ </p>

		<p>We need find a common denominator that appears in both multiplication tables...12. Split two bars into 12</p> <p>$1/3 + 2/4$ becomes $4/12 + 6/12$</p> <p>4/12 </p> <p>+</p> <p>6/12 </p> <p style="text-align: center;">= 10/12</p> <p></p>
	<p>C4: I can multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $\frac{1}{4} \times \frac{1}{2} = 1/8$)</p>	<p>Thought Process:</p> <ul style="list-style-type: none"> • Multiply the numerator of each fraction • Multiply the denominator of each fraction • Simplify fractions using common factors
	<p>C5: I can divide proper fractions by whole numbers (e.g. $1/3 \div 2 = 6$)</p>	<p>Thought Process:</p> <ul style="list-style-type: none"> • 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 form = $\frac{1}{8}$