









**Stow-on-the-Wold
Primary School**


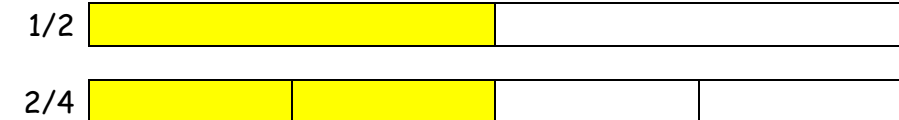
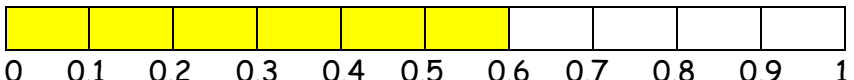
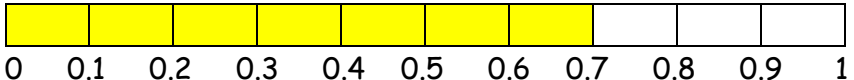
Heart Hand Mind

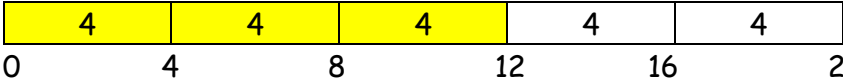
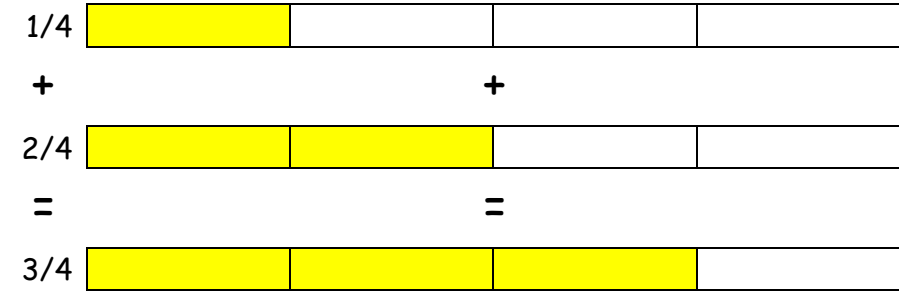
Whole School Fraction Policy

Policy Date: December 2017

Review Date: December 2018

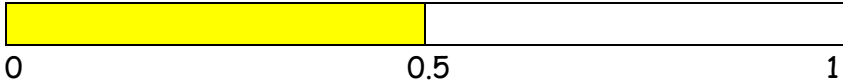
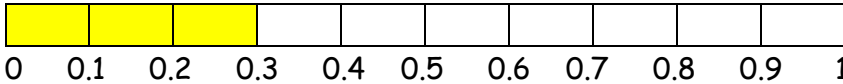
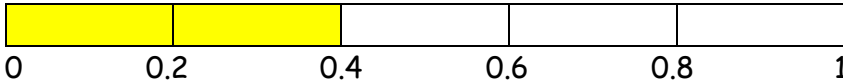

<u>Year Group</u>	<u>National Curriculum + Aspire Targets</u>	<u>Vocabulary + Strategies</u> <u>Image</u>
Reception		
Stage 1	<p>N/C: recognise, find and name a half as one of two equal parts of an object, shape or quantity</p> <p>N/C: recognise, find and name a quarter as one of four equal parts of 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> 

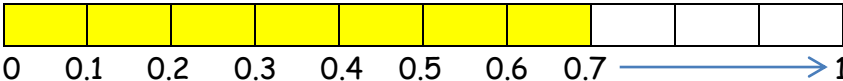
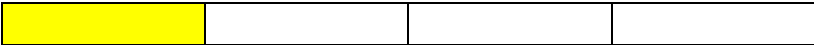


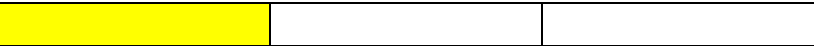

<p>Stage 2</p>	<p>N/C: write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of two quarters and one half.</p> <p>Aspire: F10 - I can write simple fractions e.g. $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of two quarters and one half.</p>	<p><u>Recognising simple 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 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><u>Equivalent fractions</u></p> <p>Find equivalent fractions to $\frac{2}{5}$</p>

Stage 6	F8: I can use common factors to simplify fractions and use common multiples to express fractions in the same denomination	<p>Thought Process: </p> <p>Use knowledge of multiplication tables to identify common factors to simplify fractions. Take each fifth and split them into two pieces</p>									
	F9*: I can compare and order any fraction, including fractions >1	<p>Thought Process: To order fractions, first find equivalent fractions with a common denominator:</p> <p>Thought Process: Use knowledge of multiplication tables to identify common denominators (multiples) Find equivalent fractions: multiply 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 each fraction. Identify the factor with which to calculate the common denominator and then multiply the numerator by the same factor.</p> <ul style="list-style-type: none"> Order on a number line <p>Equivalent fractions 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 :all steps in fraction policy please	<p>Thought Process: To find a percentage of given amount: 1 whole</p> <table border="1"> <tr> <td>• Convert the percentage into a fraction</td> <td>$\frac{1}{2}$</td> <td>$\frac{1}{2}$</td> </tr> <tr> <td>• Divide amount given by denominator</td> <td>$\frac{1}{4}$</td> <td>$\frac{1}{4}$</td> </tr> <tr> <td>• Multiply answer by numerator</td> <td>$\frac{1}{8}$</td> <td>$\frac{1}{8}$</td> </tr> </table> <p>Place value in decimal numbers 0.6 looks like:</p>	• Convert the percentage into a fraction	$\frac{1}{2}$	$\frac{1}{2}$	• Divide amount given by denominator	$\frac{1}{4}$	$\frac{1}{4}$	• Multiply answer by numerator	$\frac{1}{8}$	$\frac{1}{8}$
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• Divide amount given by denominator	$\frac{1}{4}$	$\frac{1}{4}$									
• Multiply answer by numerator	$\frac{1}{8}$	$\frac{1}{8}$									
	F13* - I can recall and use equivalences between simple fractions, decimals and percentages including in different contexts	<p>Thought Process: </p> <p>0.7 looks like: To convert fractions to decimals: numerator divided by denominator To convert decimals to a percentage: multiply the decimal by 100 To convert decimals to fractions: Identify the place value (hundredths or thousandths).</p> <p>Let's zoom in, 0.62 would look like so - it's larger than 6 but smaller than 7...</p>									

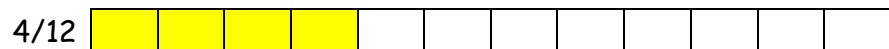
0.62

Stage 4	<p>N/C: recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$</p> <p>Aspire: F11* - I can recognise and write decimal equivalents of $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$, $\frac{n}{10}$ and $\frac{n}{100}$</p>	<p><u>Fractions to decimals and vice versa</u></p> <p>$\frac{1}{2} = 0.5$</p>  <p>0 0.5 1</p> <p>$\frac{3}{10} = 0.3$</p>  <p>0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1</p> <p>$\frac{2}{5} = 0.4$</p>  <p>0 0.2 0.4 0.6 0.8 1</p> <p>Thought process: Divide the denominator by the numerator. $\frac{1}{2}$ as a decimal = $2 \div 1 = 0.5$</p>
	<p>N/C: round decimals with one decimal place to the nearest whole number</p> <p>Aspire: F12* - I can round decimals with one decimal place to the nearest whole number</p>	<p><u>Place value in decimal numbers - Rounding</u></p> <p>0.7 rounded to the nearest whole number...</p> 

		<p>0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 1</p> <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. (rounding down) (rounding up)</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>$1/4$ </p> <p style="text-align: center;">+ +</p> <p>$2/4$ </p> <p style="text-align: center;">= =</p> <p>$3/4$ </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>$1/3$ </p> <p style="text-align: center;">+ +</p> <p>$2/4$ </p>

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

$1/3 + 2/4$ becomes $4/12 + 6/12$



+

+



= 10/12



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. $\frac{1}{2} = 50\% = 0.5$)

Stage 5

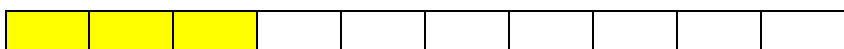
Fractions to decimals to percentages

$1/2 = 0.5 = 50\%$



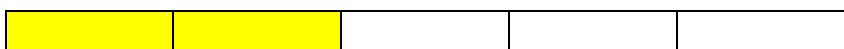
0 0.5 1
0% 50% 100%

$3/10 = 0.3 = 30\%$



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 = $2 \div 1 = 0.5 \times 100 = 50\%$

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

Thought Process:
Mixed numbers to improper fractions and vice versa

- Convert decimals to fractions e.g. 0.375:

Convert $2\frac{1}{3}$ into an improper fraction

- Identify the place value of tenths, hundredths or thousandths. E.g.

1000	1	1	$\frac{1}{3}$		
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- Record digits of the decimal as the numerator: 375/1000
- Convert these now into thirds, how many thirds are there?
- Convert to its simplest form e.g. $\frac{3}{8}$

$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$		
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C3 - I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

Adding
fractions with different denominators

Thought process: Multiply the whole number by the denominator, to find the improper whole number and then add the extra numerators.

e.g. $2 = 6/3 + 1/3 = 7/3$ +

$2/4$

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

$1/3 + 2/4$ becomes $4/12 + 6/12$

$4/12$	<table border="1" style="display: inline-table;"><tr><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td></tr></table>												
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	<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. $\frac{1}{3} \div 2 = 6$)</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 fraction = $\frac{1}{4} \div \frac{4}{1} =$ • Upturn the second fraction (this is now a reciprocal) and then multiply $\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$ • Finally simplify to its lowest form = $\frac{1}{8}$