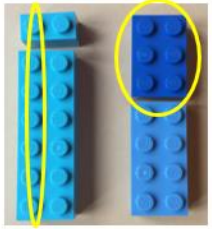
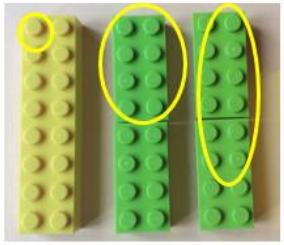
Progression in Fractions UKS2 Click4teaching – K Burton

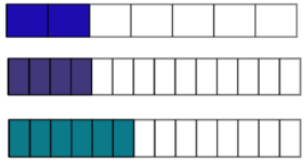
Y5 Concrete	Y5 Pictorial	Y5 Abstract
Objective 1: Compare and order fractions whose denominators are all multiples of the same number.		



$\frac{1}{7}$ $\frac{6}{14} = \frac{3}{7}$



$\frac{1}{16}$ $\frac{1}{2}$ $\frac{3}{4} = \frac{6}{8}$



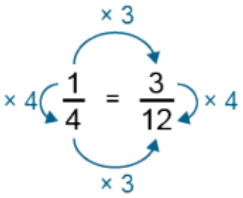
$\frac{2}{7} = \frac{4}{14}$ $\frac{6}{14} = \frac{3}{7}$



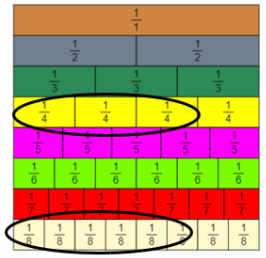
$\frac{3}{8}$

$\frac{7}{16}$

$\frac{12}{16} = \frac{3}{4}$



×	1	2	3	4
1	1	2	3	4
2	2	4	6	8
3	3	6	9	12
4	4	8	12	16
5	5	10	15	20
6	6	12	18	24
7	7	14	21	28



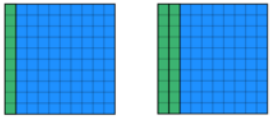
$\frac{3}{4} = \frac{6}{8}$

Complete the table to show three more fractions that are equivalent to the first:

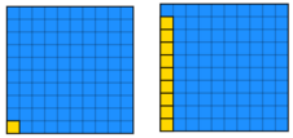
Fraction	Equivalent fractions			
$\frac{1}{2}$	$\frac{2}{4}$			
$\frac{1}{4}$	$\frac{2}{8}$			
$\frac{1}{3}$				

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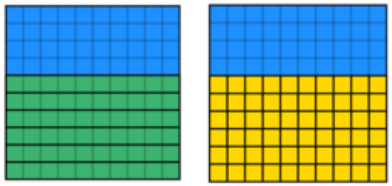
Objective 2: Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.



$\frac{1}{10}$ $\frac{2}{10} = \frac{1}{5}$



$\frac{1}{100}$ $\frac{9}{100}$



$\frac{6}{10} = \frac{60}{100}$

x10

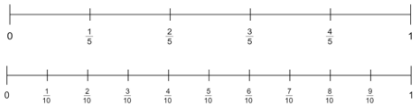
$\frac{6}{10} = \frac{60}{100}$

x10

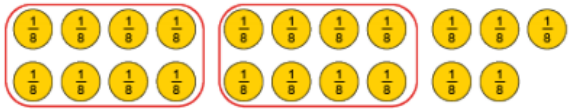
÷2

$\frac{4}{10} = \frac{2}{5}$

x2

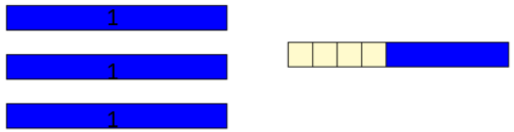


Objective 3: Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number.



1 1 $\frac{5}{8}$

$\frac{21}{8} = 2\frac{5}{8}$



3 $\frac{4}{9}$

$3\frac{4}{9} = \frac{31}{9}$

Express the following improper fractions as mixed numbers.

$\frac{17}{2}$ $\frac{13}{6}$ $\frac{28}{10}$ $\frac{41}{7}$

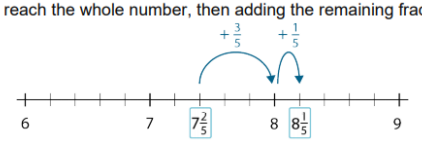
Express the following mixed numbers as improper fractions.

$4\frac{1}{8}$ $6\frac{4}{9}$ $3\frac{11}{12}$ $8\frac{2}{3}$

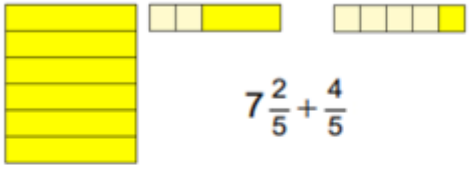
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Objective 4: Add and subtract fractions with the same denominator and denominators that are multiples of the same number.

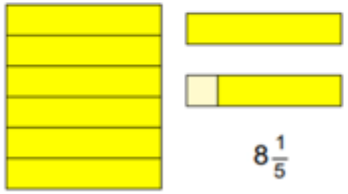
adding to reach the whole number, then adding the remaining fraction



$7\frac{2}{5}+\frac{4}{5}=8\frac{1}{5}$ $8\frac{1}{5}-\frac{4}{5}=7\frac{2}{5}$



$7\frac{2}{5}+\frac{4}{5}$



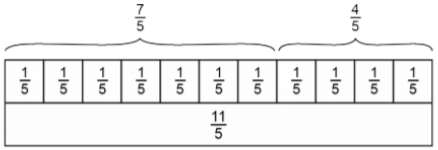
$8\frac{1}{5}$



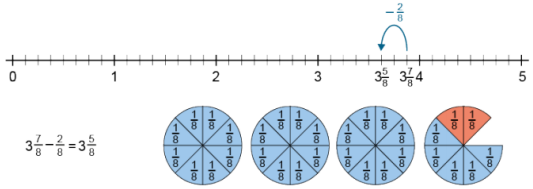
$\frac{3}{5}+\frac{4}{5}=\frac{7}{5}=1\frac{2}{5}$

Language focus

"7 one-fifths plus 4 one-fifths is equal to 11 one-fifths."



$\frac{7}{5}+\frac{4}{5}=\frac{11}{5}$



$3\frac{7}{8}-\frac{2}{8}=3\frac{5}{8}$

1. It is a $2\frac{3}{4}$km cycle ride to my friend's house, and a further $\frac{3}{4}$km ride to the park. How far do I have to cycle altogether?
2. I have 5m of rope. I cut off $\frac{4}{10}$m. How much rope is left?
3. Fill in the missing numbers.

$2\frac{1}{7}$	$2\frac{4}{7}$			$3\frac{6}{7}$	

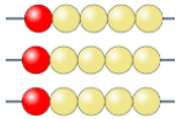
4. The table below shows the number of hours Josie read each day during a school week. For how long did Josie read altogether?

Mon	Tues	Wed	Thurs	Fri
$1\frac{3}{4}$ hours	1 hour	$1\frac{1}{4}$ hours	$1\frac{1}{4}$ hours	$2\frac{3}{4}$ hours

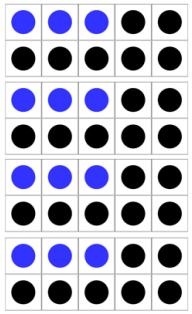
5. A tailor has $3\frac{7}{10}$m of ribbon. She uses $1\frac{9}{10}$m to complete a dress. How much ribbon is left?

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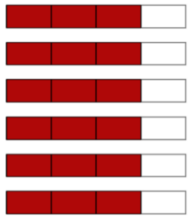
Objective 5: Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

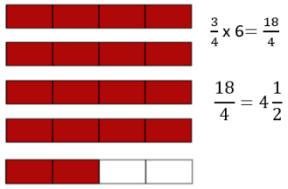


$$\frac{1}{5} \times 3 = \frac{3}{5}$$



$$\frac{3}{10} X\ 4 = \frac{12}{10} = 1\frac{1}{5}$$

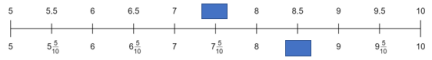


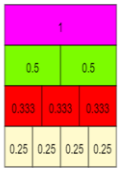


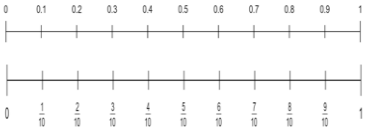
$$\frac{1}{2} X\ 5 = \frac{1}{2} X \frac{5}{1}$$

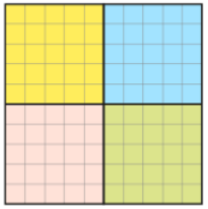
$$\frac{3}{5} X\ 4 = \frac{3}{5} X \frac{4}{1} = \frac{12}{5} = 2\frac{2}{5}$$

Objective 6: Read and write decimal numbers as fractions [for example, 0.71 = 71/100]









$$\frac{1}{4} = \frac{25}{100} = 0.25$$

Fill in the missing symbols (<, > or =).

$\frac{1}{10} \square\ 0.75$

$0.4 \square\ \frac{1}{4}$

$0.5 \square\ \frac{1}{5}$

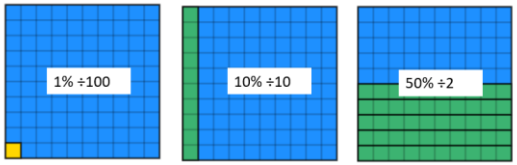
$\frac{3}{4} \square\ 0.75$

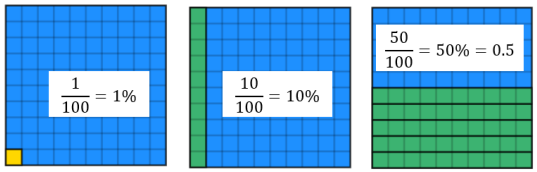
$0.8 \square\ \frac{4}{5}$

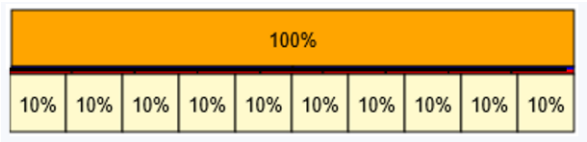
$\frac{1}{2} \square\ 0.2$

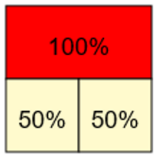
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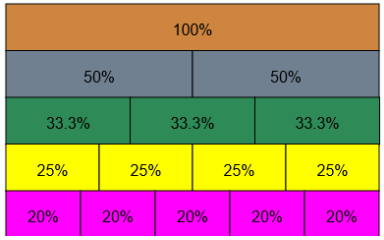
Objective 7: Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.



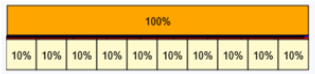








100% = 500
What is 10%?
What is 50%
Is 70% = 350



100% = £400
What is 30%?
Is 20% = £90?

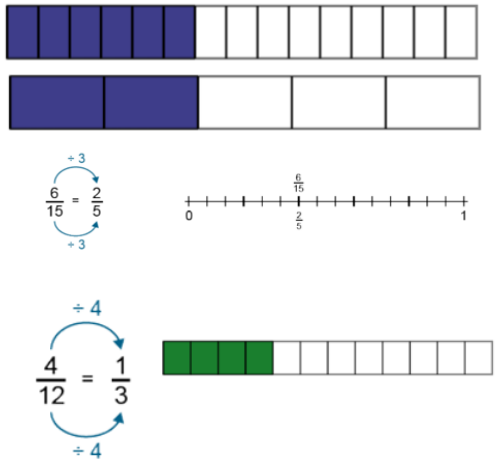


100%	50%	25%	75%	10%
1000 m	500 m	250 m	750 m	100 m
160 kg	80 kg	40 kg	120 kg	16 kg
1080 mm	540 mm	270 mm	810 mm	108 mm

Progression in Fractions UKS2 Click4teaching – K Burton

Objective 1: Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.

Y6 Concrete



Y6 Pictorial

×	1	2	3	4
1	1	2	3	4
2	2	4	6	8
3	3	6	9	12
4	4	8	12	16

÷ 4

$\frac{4}{12} = \frac{1}{3}$

÷ 4

Y6 Abstract

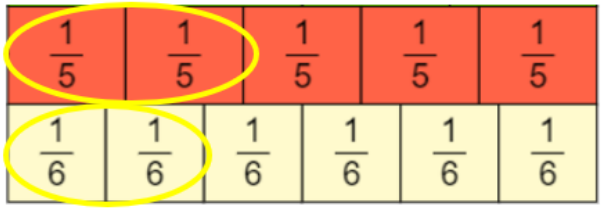
Sort these fractions according to whether they are expressed in their simplest form or not.

$\frac{3}{15}$ $\frac{2}{5}$ $\frac{4}{20}$ $\frac{25}{36}$ $\frac{1}{6}$ $\frac{7}{21}$ $\frac{18}{30}$ $\frac{9}{17}$ $\frac{5}{15}$ $\frac{11}{20}$ $\frac{23}{30}$

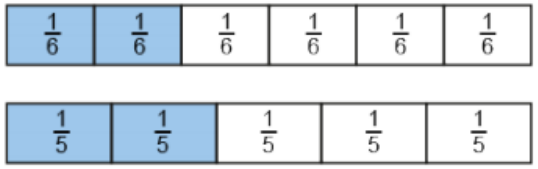
Fraction in its simplest form	Fraction <u>not</u> in its simplest form

Objective 2: Compare and order fractions, including fractions > 1.

Y6 Concrete



Y6 Pictorial



$\frac{2}{5} > \frac{2}{6}$

Y6 Abstract

$\frac{2}{5} = \frac{12}{30}$

$\frac{2}{6} = \frac{10}{30}$

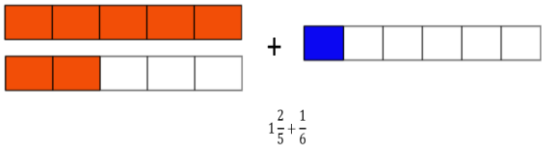
LCM of 5 and 6 = 30

Without using a common denominator, put each set of fractions in order from smallest to largest.

a. $\frac{10}{8}$ $\frac{7}{8}$ $\frac{5}{8}$ $\frac{3}{8}$ $\frac{8}{8}$ $\frac{4}{8}$ $\frac{2}{8}$

Progression in Fractions UKS2 Click4teaching – K Burton

Objective 3: Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

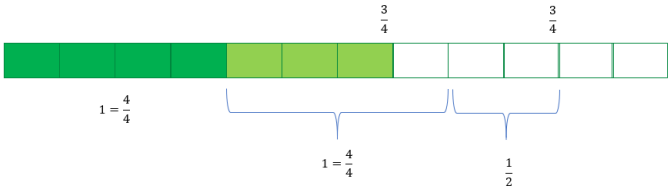


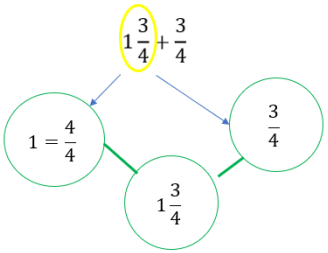
$1\frac{2}{5}+\frac{1}{6}$

$$\frac{7}{5}+\frac{1}{6}$$

$$\frac{42}{30}+\frac{5}{30}=\frac{47}{30}$$

$$\frac{47}{30}=1\frac{17}{30}$$





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

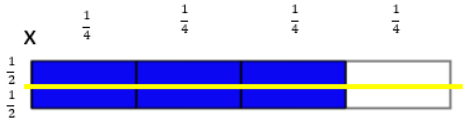
$\frac{7}{10}+\frac{5}{10}+\frac{3}{10}$ $\quad$ $\frac{8}{9}+\frac{8}{9}-\frac{1}{9}$ $\quad$ $3\frac{7}{10}+2\frac{9}{10}$

$\frac{13}{8}+\frac{11}{8}$ $\quad$ $7\frac{1}{6}-1\frac{2}{6}$ $\quad$ $\frac{17}{3}-\frac{5}{3}$

$$\frac{6}{7}+\frac{2}{3}=\frac{18}{21}+\frac{14}{21}$$

Objective 4: Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/2 × 3/4 = 3/8].





$$\frac{1}{2}X\frac{3}{4}=\frac{3}{8}$$

$$\frac{1}{2}X\frac{3}{4}=\frac{3}{8}$$

$$\frac{3}{5}X\frac{1}{4}=\frac{3}{20}$$

Progression in Fractions UKS2 Click4teaching – K Burton

Objective 5: Divide proper fractions by whole numbers [for example, 6/8 ÷ 3 = 1/4]

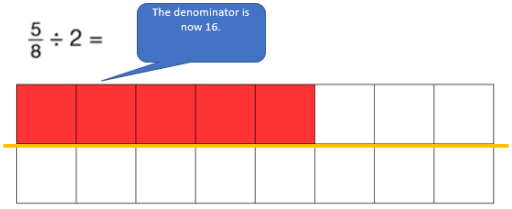
Dividing by 2 is the same as multiplying by $\frac{1}{2}$

$\frac{1}{8} \div 2$



$\frac{5}{8} \div 2 =$

The denominator is now 16.



The reciprocal:

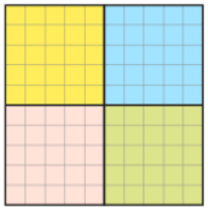
$$\frac{1}{8} \div 2 = \frac{1}{8} \div \frac{2}{1}$$

$$\frac{1}{8} x \frac{1}{2} = \frac{1}{16}$$

Objective 6: Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] .



1.25

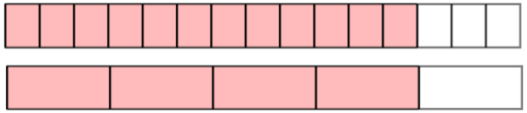


$\frac{1}{4} = \frac{25}{100} = 0.25$

$$\begin{array}{r} 28 \\ 15 \overline{)\,432} \\ 30 \quad (15 \times 2) \\ \hline 132 \\ 120 \quad (15 \times 8) \\ \hline 12 \end{array}$$

$$28\frac{12}{15} = \frac{4}{5}$$

$$28\frac{4}{5} = 28.8$$



$1730 \div 8$

216 r 2

$216\frac{2}{8}$

$216\frac{1}{4}$

		2	1	6	.	2	5	
8	)1	7	$^{1}3$	$^{5}0$	$^{2}0$		$^{4}0$	