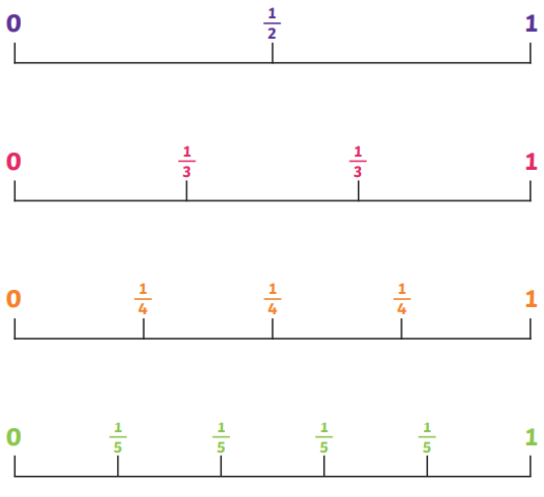
Fractions

Locating a fraction on the number line



Mixed Numbers

Mixed numbers contain a whole number and a fraction.

whole → $2\frac{1}{4}$ ← fraction

Improper Fractions

An improper fraction has a numerator which is greater than or equal to the denominator.

$\frac{5}{3}$

Convert an Improper Fraction to a Mixed Number

$\frac{9}{4}$

$9 \div 4 = 2r1$ → $2\frac{1}{4}$

Divide the numerator by the denominator.

This shows you the whole number and the fraction.

Convert a Mixed Number to an Improper Fraction

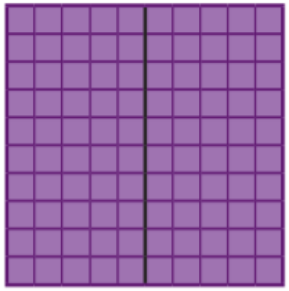
Multiply the whole by the denominator to make an improper fraction.

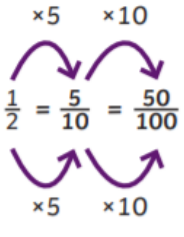
$2\frac{5}{6} = \frac{12}{6} + \frac{5}{6} = \frac{17}{6}$

Add the fractions together.

Equivalent Fractions

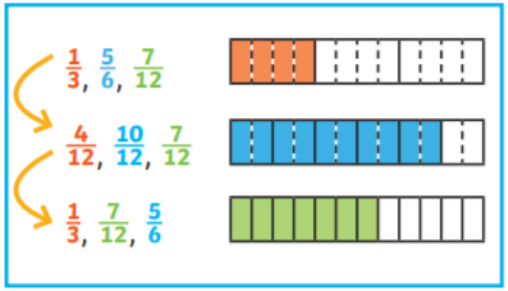
To find equivalent fractions, we multiply or divide the numerator and denominator by the same number.

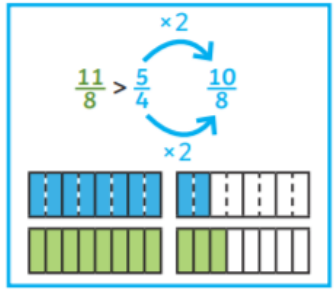




Compare and Order Fractions

We can compare and order fractions by using common denominators.





Add Fractions Where the Total is Greater Than 1

$\frac{1}{2} + \frac{3}{4} + \frac{5}{8} = \frac{4}{8} + \frac{6}{8} + \frac{5}{8} = \frac{15}{8} = 1\frac{7}{8}$

Add Mixed Numbers

$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1 + \frac{5}{8} = 1\frac{5}{8}$

$1\frac{1}{4} + \frac{3}{8} = \frac{5}{4} + \frac{3}{8} = \frac{10}{8} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$

Subtract from a Mixed Number

$1\frac{2}{3} - \frac{2}{9} = 1\frac{6}{9} - \frac{2}{9} = 1\frac{4}{9}$

starting number	find the equivalent fraction	subtract

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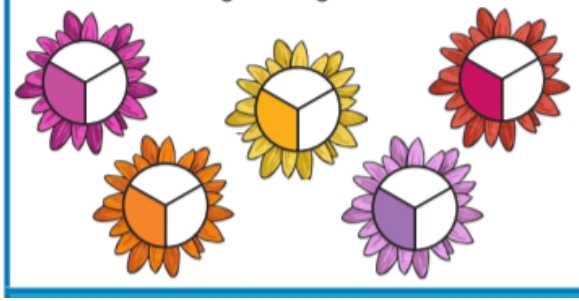
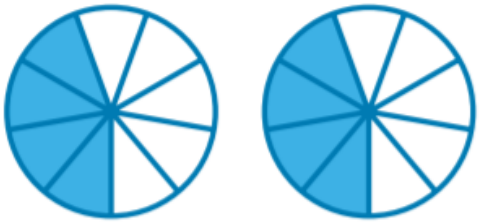
Multiply Unit Fractions by an Integer

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



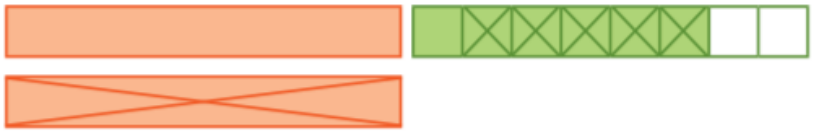
Multiply Non-Unit Fractions by an Integer

$2 \times \frac{4}{9} = \frac{8}{9}$



Subtract Two Mixed Numbers

$2\frac{3}{4} - 1\frac{5}{8} = 1\frac{1}{8}$



$2 - 1 = 1$

$\frac{3}{4} - \frac{5}{8} = \frac{1}{8}$

Multiply Mixed Numbers by Integers

Convert to an improper fraction and multiply the numerator by the integer.

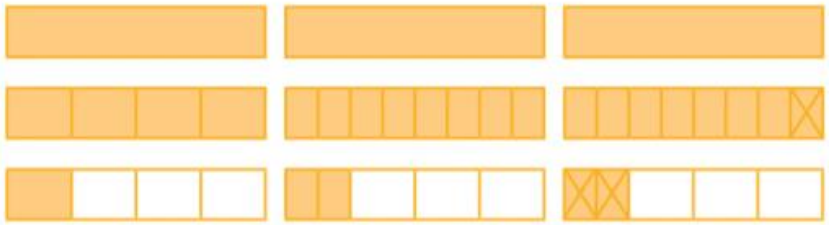
$2\frac{1}{4} \times 2 = \frac{9}{4} \times 2 = \frac{18}{4} = 4\frac{2}{4} = 4\frac{1}{2}$

Use repeated addition.

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

Subtract from a Mixed Number - Breaking the Whole

$2\frac{1}{4} - \frac{3}{8} = 2\frac{2}{8} - \frac{3}{8} = 1\frac{10}{8} - \frac{3}{8} = 1\frac{7}{8}$



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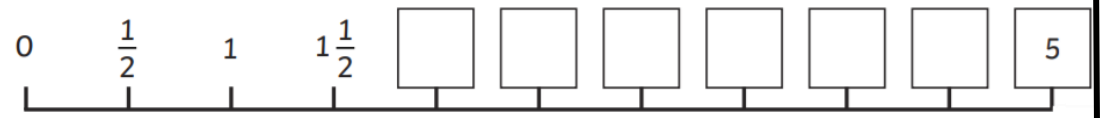
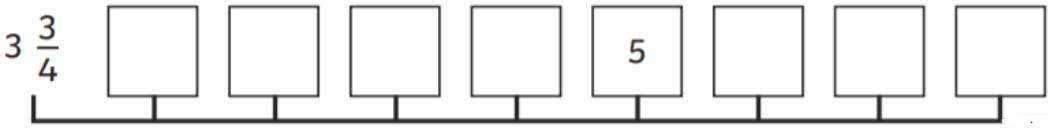
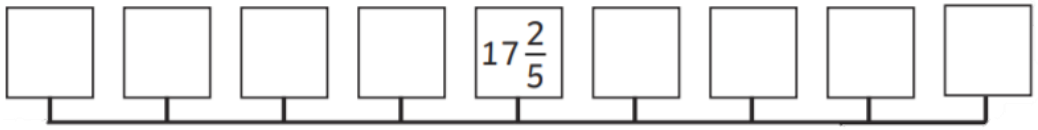
Quiz 1

Count up the number line and fill in the missing fractions or whole numbers.







Quiz 2

Fill in the numerator to make the fractions equivalent.

1. $\frac{1}{2} = \frac{\square}{4}$

2. $\frac{1}{12} = \frac{\square}{24}$

3. $\frac{1}{10} = \frac{\square}{20}$

4. $\frac{1}{8} = \frac{\square}{16}$

5. $\frac{3}{20} = \frac{\square}{40}$

6. $\frac{1}{6} = \frac{\square}{12}$

7. $\frac{1}{5} = \frac{\square}{10}$

8. $\frac{1}{4} = \frac{\square}{16}$

9. $\frac{3}{10} = \frac{\square}{20}$

10. $\frac{1}{3} = \frac{\square}{12}$

11. $\frac{7}{20} = \frac{\square}{40}$

12. $\frac{3}{8} = \frac{\square}{16}$

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Quiz 3

Compare these fractions using the < and > symbols. Show your working out using common denominators.

$\frac{5}{8} \square \frac{4}{7}$

$\frac{7}{12} \square \frac{3}{7}$

$1\frac{3}{4} \square 1\frac{8}{9}$

$1\frac{3}{5} \square 1\frac{2}{3}$

Quiz 4

Work out the following operations. Show your working clearly.

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

$3\frac{1}{9} - 2\frac{1}{5} =$

Explain why $2\frac{1}{4} + 1\frac{1}{2}$ is not $3\frac{2}{6}$.

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Quiz 5

Compare these fractions using the < and > symbols.
Show your working out using common denominators.

1. $\frac{1}{2} \square \frac{3}{8}$

2. $\frac{1}{3} \square \frac{3}{6}$

3. $\frac{1}{4} \square \frac{3}{8}$

4. $\frac{4}{5} \square \frac{6}{10}$

5. $\frac{2}{6} \square \frac{5}{12}$

6. $\frac{5}{7} \square \frac{4}{14}$

7. $\frac{7}{12} \square \frac{1}{2}$

8. $\frac{2}{9} \square \frac{1}{3}$

9. $\frac{4}{12} \square \frac{1}{4}$

Quiz 6

Work out the following additions:

$\frac{2}{3} + \frac{1}{6} =$ ☐

$\frac{1}{2} + \frac{1}{4} =$ ☐

1: $\frac{1}{4}$

$\frac{1}{4} + \frac{3}{8} =$ ☐

$\frac{1}{10} + \frac{4}{5} =$ ☐

$\frac{1}{5} + \frac{7}{10} =$ ☐

Quiz 4

Quiz 7

Work out the following additions:

$5\frac{1}{2} + \frac{7}{2}$

$2\frac{2}{5} + \frac{11}{5}$

$\frac{5}{3} + 3\frac{2}{3}$

$\frac{8}{6} + 3\frac{2}{6}$

Quiz 8

Fill in the missing amounts in the table below:

10%	1.6		3.6	6		
25%		8				21
50%	8		18		50	
Amount	16	32		60	100	