



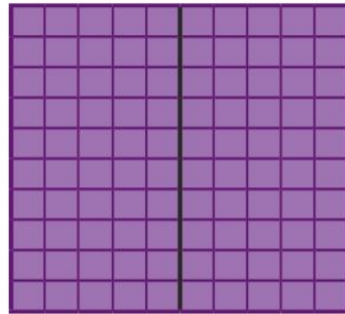
**Key Vocabulary**

**Equivalent Fractions**

**Compare and Order**

Fraction  
Numerator  
Denominator  
Equivalent  
  
Tenths  
Hundredths  
  
Mixed number  
Improper fraction  
Convert

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



$$\frac{1}{2} = \frac{5}{10} = \frac{50}{100}$$

×5   ×10  
×5   ×10

We can compare and order fractions by using common denominators.

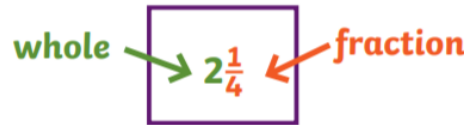


**Mixed Numbers**

**Improper Fractions**

Multiple  
Diagram

Mixed numbers contain a whole number and a fraction.



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**

**Convert a Mixed Number to an Improper Fraction**

Decimal number  
  
Round

$\frac{9}{4}$

$9 \div 4 = 2r1$    ←  $2\frac{1}{4}$

Divide the numerator by the denominator.

This shows you the whole number and the fraction.

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.

One decimal place  
Two decimal places  
Three decimal places

**Adding and Subtracting Fractions**

To add or subtract fractions with denominators that are multiples of the same number, we must change one fraction to have the same denominator.

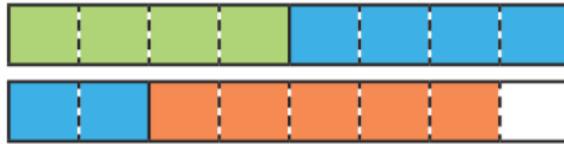


Percent (%)  
Ratio  
Proportion



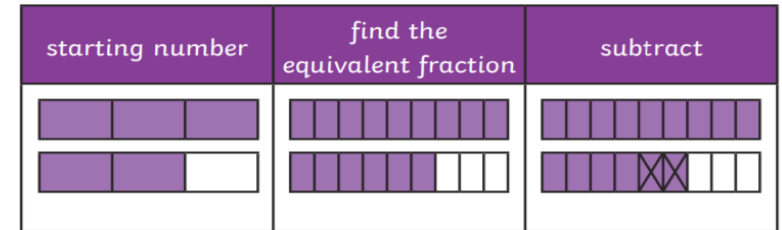
### Add Fractions Where the Total is Greater than 1

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



### Subtract from a Mixed Number

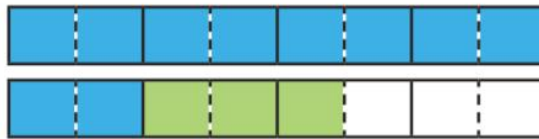
$$1\frac{2}{3} - \frac{2}{9} = 1\frac{6}{9} - \frac{2}{9} = 1\frac{4}{9}$$



### Add Mixed Numbers

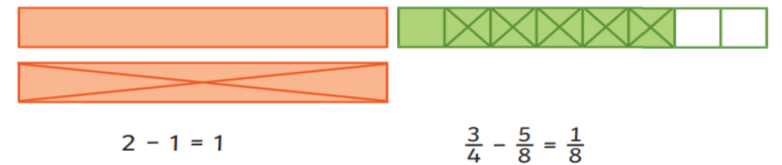
$$1\frac{1}{4} + \frac{3}{8} = 1\frac{2}{8} + \frac{3}{8} = 1 + \frac{5}{8} = 1\frac{5}{8}$$

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



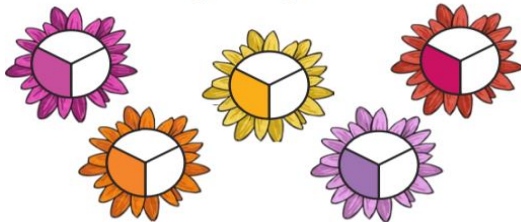
### Subtract Two Mixed Numbers

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



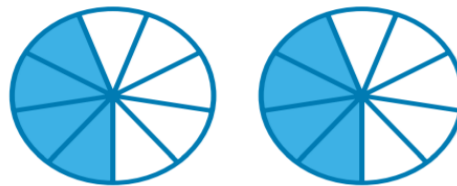
### Multiply Unit Fractions by an Integer

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



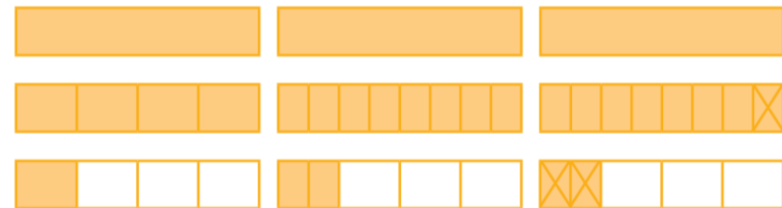
### Multiply Non-Unit Fractions by an Integer

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



### Subtract from a Mixed Number – Breaking the Whole

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



### 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.

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