



Maths

Fractions

Y5

Skills

- Equivalent fractions
- Improper fractions to mixed numbers
- Mixed numbers to improper fractions
- Number sequences
- Compare and order fractions less than 1
- Compare and order fractions greater than 1
- Add and subtract fractions
- Add fractions within 1
- Add 3 or more fractions
- Add fractions
- Add mixed numbers
- Subtract fractions
- Subtract mixed numbers
- Subtract – breaking the whole
- Subtract 2 mixed numbers
- Multiply unit fractions by an integer
- Multiply non-unit fractions by an integer
- Multiply mixed numbers by integers
- Fraction of an amount
- Using fractions as operators

Vocabulary

Numerator, denominator, unit fraction, non-unit fraction, equivalent, improper fraction, mixed number, add, subtract, simplest form, common denominator, common numerator

Equivalent Fractions

$$\frac{18}{36} = \frac{6}{12} = \frac{1}{2}$$

Diagram showing the simplification of 18/36 to 1/2 by dividing both numerator and denominator by 3, then by 6.

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

Diagram showing the expansion of 1/2 to 8/16 by multiplying both numerator and denominator by 2, 4, and 8.

You have to multiply the numerator and denominator to find an equivalent fraction. When finding the simplest form, you must divide the numerator and denominator by the same number.

Converting Improper Fractions to Mixed Numbers

An improper fraction has a numerator that is larger than the denominator.

$$\frac{9}{4}$$

Divide the numerator by the denominator.

This shows you the whole number and the fraction.

Converting Mixed Numbers to Improper Fractions

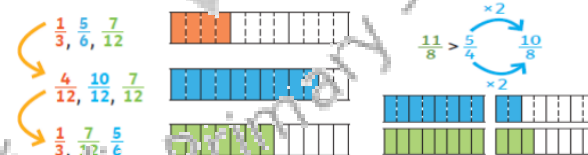
A mixed number is a whole number and a fraction.

Multiply the whole number 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.

Comparing and Ordering Fractions



Add and Subtract Fractions

To add or subtract fractions with different denominators, we must find the equivalent fraction or common denominators.

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



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



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

$$\frac{5}{6} - \frac{2}{3} = \frac{5}{6} - \frac{4}{6} = \frac{1}{6}$$



Adding Mixed Numbers

To add mixed numbers, you must convert them to improper fractions.

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

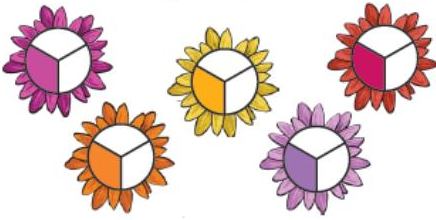
$$1\frac{1}{4} + \frac{3}{8} = \frac{5}{4} + \frac{3}{8} = \frac{10}{8} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$$



Multiply Unit Fractions by an Integer

You need to multiply the numerator by the integer.

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



Subtracting Mixed Numbers

To subtract from a mixed number, you must convert it to an improper fraction.

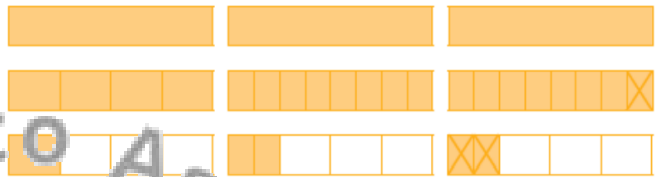
$$1\frac{2}{3} - \frac{2}{9} = 1\frac{6}{9} - \frac{2}{9} = 1\frac{4}{9}$$

starting number	find the equivalent fraction	subtract

Breaking the Whole

To break the whole, you need to change one of the whole numbers into an improper fraction.

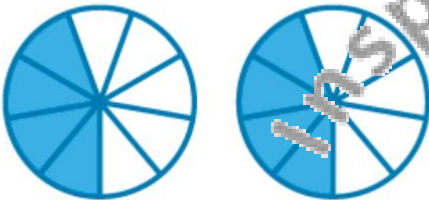
$$2\frac{1}{4} - \frac{3}{8} = 2\frac{2}{8} - \frac{3}{8} = 1\frac{10}{8} - \frac{3}{8} = 1\frac{7}{8}$$



Multiply Non-unit Fractions by an Integer

You need to multiply the numerator by the integer.

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



Multiply Mixed Numbers by an Integer

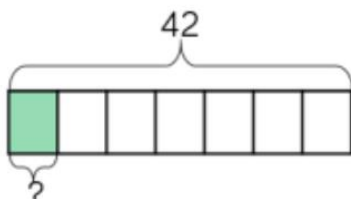
Convert to an improper fraction and multiply the numerator.

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

Use mental addition.

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

Find Fractions of Amounts



$$42 \div 7 = 6$$

$$\frac{1}{7} \text{ of } 42 \text{ is } 6$$

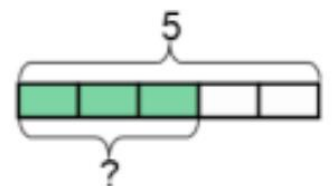
Divide by the denominator, multiply by the numerator.

Fractions as Operators

$$5 \times \frac{3}{5} = \frac{15}{5} = 3$$



$$\frac{3}{5} \text{ of } 5 = 3$$



Use your knowledge of multiplying fractions and finding fractions of amounts to help you understand how to answer questions.