Simplify fractions

Divide the numerator and denominator by the highest common factor.

$$\frac{20}{45} = \frac{4}{9}$$

Equivalent fractions are fractions which represent the same value.

Add and subtract fractions

Find the LCM of the denominators to find a common denominator.

Use equivalent fractions to change each fraction to the common denominator.

Then just add or subtract the numerators and keep the denominator the same.

$$\frac{2}{3} + \frac{4}{5}$$

Multiples of 3: 3, 6, 9, 12, **15**..
Multiples of 5: 5, 10, **15**...
LCM of 3 and 5 = 15

$$\frac{2}{3} = \frac{10}{15}$$
$$\frac{4}{5} = \frac{12}{15}$$

$$\frac{10}{15} + \frac{12}{15} = \frac{22}{15} = 1\frac{7}{15}$$

Year 8 foundation topic 8

Calculating with fractions

What careers would use these skills?

Musician, lawyer, judge, scientist, builder, architect, hairdresser, beautician, vet, professional athlete, personal trainer, author, chef, baker, accountant

Improper fractions to mixed numbers

Divide the numerator by the denominator. The answer gives the whole number part. The remainder goes on top of the fraction, with the same denominator.

$$\frac{43}{6} = 7\frac{1}{6}$$

Mixed numbers to improper fractions

Multiply the denominator by the whole number part and add the numerator. Put the answer over the numerator.

$$7\frac{1}{6} = \frac{6 \times 7 + 1}{6} = \frac{43}{6}$$

Multiply fractions

Multiply the numerators together and multiply the denominators together then simplify.

$$\frac{3}{8} \times \frac{2}{9} = \frac{6}{72} = \frac{1}{12}$$

Mixed number addition and subtraction

$$1\frac{2}{3} + 2\frac{1}{2} = \frac{1\times3+2}{3} + \frac{2\times2+1}{2}$$

$$= \frac{5}{3} + \frac{5}{2} = \frac{5\times2}{3\times2} + \frac{5\times3}{2\times3} = \frac{10+15}{6}$$

$$= \frac{25}{6} = 4\frac{1}{6}$$

Divide fractions

'Keep it, Flip it, Change it – KFC'
Keep the first fraction the same,
Flip the second fraction upside down,
Change the divide to a multiply

(Multiply by the reciprocal of the second fraction)

$$\frac{3}{4} \div \frac{5}{6} = \frac{3}{4} \times \frac{6}{5} = \frac{18}{20} = \frac{9}{10}$$

Mixed number multiplication