

# Calculation Policy:

## Fractions



# Adding & Subtracting

## Year 3

- \* Add and subtract fractions with the same denominator within one whole [for example,  $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$ ] (*Year 3 - Fractions*)

Add/subtract the numerators

Leave the denominator the same

The diagram illustrates the process of adding and subtracting fractions with the same denominator. It features two examples on a grey background. The first example shows the addition of  $\frac{2}{9} + \frac{3}{9} = \frac{5}{9}$ . An arrow points from the text 'Add/subtract the numerators' to the numerators 2 and 3, and another arrow points from the text 'Leave the denominator the same' to the denominator 9 in the result. The second example shows the subtraction of  $\frac{7}{9} - \frac{2}{9} = \frac{5}{9}$ . An arrow points from the text 'Add/subtract the numerators' to the numerators 7 and 2, and another arrow points from the text 'Leave the denominator the same' to the denominator 9 in the result.

## Year 4

- \* Add and subtract fractions with the same denominator (*Year 4 - Fractions*)

Add/subtract the numerators

Leave the denominator the same

The diagram illustrates the process of adding and subtracting fractions with the same denominator. It features two examples on a grey background. The first example shows the addition of  $\frac{5}{9} + \frac{6}{9} = \frac{11}{9}$ . An arrow points from the text 'Add/subtract the numerators' to the numerators 5 and 6, and another arrow points from the text 'Leave the denominator the same' to the denominator 9 in the result. The second example shows the subtraction of  $\frac{7}{9} - \frac{2}{9} = \frac{5}{9}$ . An arrow points from the text 'Add/subtract the numerators' to the numerators 7 and 2, and another arrow points from the text 'Leave the denominator the same' to the denominator 9 in the result.

## Year 5

- \* Add and subtract fractions with the same denominator and denominators that are multiples of the same number (*Year 5 - Fractions*)

Find a common multiple and convert the fractions (remember you must do the same to the numerator and denominator)

①  $\frac{2}{3} + \frac{5}{6} =$   
②  $\frac{4}{6} + \frac{5}{6} = \frac{9}{6} \rightarrow \frac{3}{2} \rightarrow \frac{1}{2}$

Arrows from the text above point to the first equation and the simplification step in the second equation.

①  $\frac{5}{10} - \frac{1}{5} =$   
②  $\frac{5}{10} - \frac{2}{10} = \frac{3}{10}$

An arrow from the text above points to the first equation.

Fractions should not be improper - convert and simplify where necessary

## Year 6

- \* Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions (*Year 6 - Fractions*)

### Proper and Improper Fractions

Convert the fractions to ensure they have the same denominator (identify common multiples or cross multiply)

①  $\frac{2}{5} + \frac{1}{3} =$   
②  $\frac{2 \times 3}{5 \times 3} + \frac{1 \times 5}{3 \times 5} =$   
③  $\frac{6}{15} + \frac{5}{15} = \frac{11}{15}$

Arrows from the text above point to the first equation and the final result in the third equation.

①  $\frac{5}{9} - \frac{2}{5} =$   
②  $\frac{5 \times 5}{9 \times 5} - \frac{2 \times 9}{5 \times 9} =$   
③  $\frac{25}{45} - \frac{18}{45} = \frac{7}{45}$

An arrow from the text above points to the first equation, and an arrow from the text below points to the final result in the third equation.

Add/subtract the numerator and leave the denominator the same

## Mixed Numbers

Convert the mixed number to improper fractions

①  $1\frac{1}{5} + \frac{2}{3} =$   
②  $\frac{6}{5} + \frac{2}{3} =$   
③  $\frac{6 \times 3}{5 \times 3} + \frac{2 \times 5}{3 \times 5} =$   
④  $\frac{18}{15} + \frac{10}{15} = \frac{28}{15} \rightarrow 1\frac{13}{15}$

Convert the fractions to ensure they have the same denominator (identify common multiples or cross multiply)

①  $1\frac{3}{4} - \frac{1}{3} =$   
②  $\frac{7}{4} - \frac{1}{3} =$   
③  $\frac{7 \times 3}{4 \times 3} - \frac{1 \times 4}{3 \times 4} =$   
④  $\frac{21}{12} - \frac{4}{12} = \frac{17}{12} \rightarrow 1\frac{5}{12}$

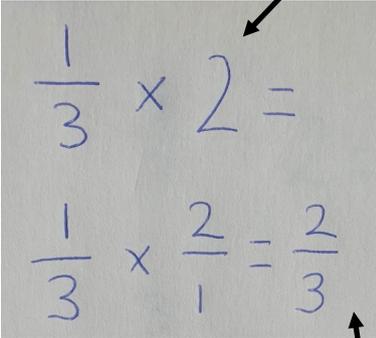
Add/subtract the numerator and leave the denominator the same - answers must not be improper

# Multiplying

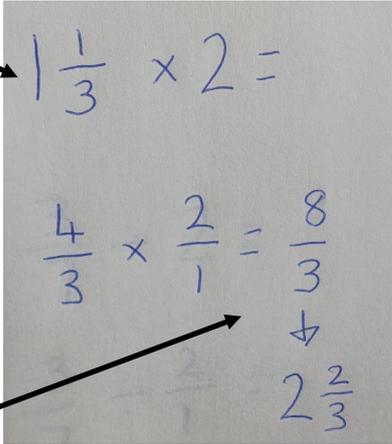
## Year 5

- \* Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams (*Year 5 - Fractions*)

Convert whole/mixed numbers to improper fractions



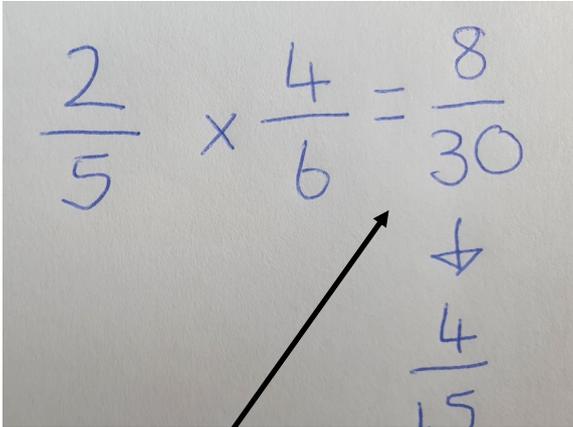
Multiply the numerators and then the denominators



The image shows two examples of multiplication. The first example shows  $\frac{1}{3} \times 2 =$  and  $\frac{1}{3} \times \frac{2}{1} = \frac{2}{3}$ . The second example shows  $1\frac{1}{3} \times 2 =$  and  $\frac{4}{3} \times \frac{2}{1} = \frac{8}{3}$ , which is then converted to the mixed number  $2\frac{2}{3}$ . Arrows point from the text 'Convert whole/mixed numbers to improper fractions' to the mixed number and the improper fraction in the second example. Another arrow points from the text 'Multiply the numerators and then the denominators' to the multiplication steps in both examples.

## Year 6

- \* Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example,  $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ ] (*Year 6 - Fractions*)



The image shows a handwritten example of multiplying two proper fractions:  $\frac{2}{5} \times \frac{4}{6} = \frac{8}{30}$ . Below this, the fraction is simplified to  $\frac{4}{15}$ . An arrow points from the text below to the simplification step.

Multiply the numerators and then the denominators. Simplify where necessary

# Dividing

## Year 6

- \* Divide proper fractions by whole numbers [for example,  $\frac{3}{7} \div 2 = \frac{3}{14}$ ] (*Year 6 - Fractions*)

The image shows three steps of a handwritten calculation on a grey background:

- Step 1:  $\frac{3}{7} \div 2 =$
- Step 2:  $\frac{3}{7} \div \frac{2}{1} =$
- Step 3:  $\frac{3}{7} \times \frac{1}{2} = \frac{3}{14}$

Annotations with arrows point to specific parts of the steps:

- An arrow from the text "Convert whole numbers to fractions" points to the number 2 in the second step.
- An arrow from the text "Keep the first fraction" points to the fraction  $\frac{3}{7}$  in the third step.
- An arrow from the text "Change the divide to a multiply" points to the division symbol in the second step.
- An arrow from the text "Flip the second fraction" points to the fraction  $\frac{1}{2}$  in the third step.