Mathematics	Algebraic thinking	Year 8	Term 2

1. 8 times table

8 x 1 = 8	8 x 7 = 56
8 x 2 = 16	8 x 8 = 64
8 x 3 = 24	8 x 9 = 72
8 x 4 = 32	8 x 10 = 80
8 x 5 = 40	8 x 11 = 88
8 x 6 = 48	8 x 12 = 96

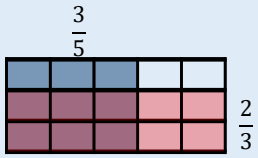
2. Fractions

Repeated addition – repeatedly adding the same number or amount, e.g.

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

Multiplying fractions

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



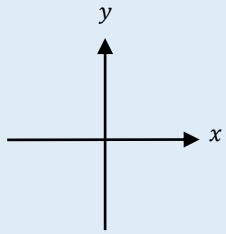
Reciprocal – the multiplicative inverse of a number, e.g. the reciprocal of 5 is $\frac{1}{5}$

Dividing by an amount is the same as **multiplying by the reciprocal**.

3. Axes and Coordinates

x-axis – the axis that runs horizontally

y-axis – the axis that runs vertically



Quadrant – one of four regions separated by the x and y axes

Cartesian co-ordinates – the ordered pair of (x,y) to define a point in a quadrant

Origin – (0,0)

4. Linear Graphs 1

Horizontal line – parallel to the horizon and in the form $y = a$

Vertical line – at a right angle to the horizontal plane

Gradient – the measure of the steepness of a line

Parallel – two lines which are the same distance apart and so have the same gradient

Constant – a fixed value

Linear graph – produces a straight line

5. Linear Graphs 2

Proportion – the mathematical comparison between two numbers (when two ratios or fractions are equivalent, they are proportional)

y-intercept – where a line crosses the y-axis

Table of values – created to help plot a graph

Substitute – where we replace a letter with a number

$y = mx + c$ – this is often the form of a linear graph where m is the gradient and c is the y-intercept

eg. $y = 3x + 7$ *has a gradient of 3 and a y-intercept of 7*

6. Representing Data

Correlation – a measure of the strength of the relationship between two variables

Line of best fit – a line that shows the best estimate of the relationship between two variables

Outlier – a result which lies beyond where most of the data is clustered

Discrete – data which can only take certain values (i.e. data that can be counted e.g. number of people)

Continuous – data which can take any value (i.e. data that can be measured e.g. the height of a person)

Frequency – the number of times an event occurs