8L Unit 4: Linear Graphs Knowledge Organiser

## Plot and read coordinates

Coordinates are plotted on an ...x... and ...y... axis graphs
Left and right is the ...x... axis and up and down is the ...y.. axis

A coordinate is made up of (..x.., ...y..)


| Read the coordinates |
| :--- |
| of the plots from the |
| graph |

$\left.\begin{array}{l}B=(2,1) \\
C=(-4,3) \\
D=(5,-4)\end{array}\right]$

| Plot the coordinates |
| :--- |
| below on the graph |

$\mathbf{F}=(3,2)$
$\mathbf{G}=(0,4)$
$\mathbf{H}=(-5,5)$
$\mathbf{I}=(3,-2)$
$\mathrm{J}=(-4,-3)$

## Plot vertical and horizontal lines from their equations

Write the equation of vertical and horizonal lines


Vertical lines are $\mathrm{x}=\ldots$
$\mathbf{x}=3$ and $\mathbf{x}=-4$ (shown on the graph)

Horizontal lines are $\mathrm{y}=\ldots$.
Such as $\mathbf{y}=\mathbf{3}$ and $\mathbf{y}=-\mathbf{2}$ (shown on the graph)

Where the lines cross over are called points of intersection. Write in the coordinates where they cross over.

## Use a linear equation to generate and plot coordinates

By using substitution, fill in the balnks in the table for the equation below.

$$
y=3 x-2
$$

| $x$ | -1 | 0 | 1 | 2 | 3 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $y$ |  |  |  |  |  |

Now use the values in the table and plot them as coordinates onto the graph


Key Words
Coordinates
Vertical
Horizontal
Intercept
Plot
Equation
Gradient


## Calculate gradient and intercept from a graph


width
height
The Gradient is the change in y (the height) divided by the change in x (the width)

Gradient, $\mathrm{m}=\frac{\text { height }}{\text { width }}$
The $y$-intercept is where the line crosses the $y$-axis

Using the graph, find the gradient and the y-intercept
Gradient, $\mathrm{m}=6 / 3=2$
$y$-intercept is $=1$ or $(0,1)$ as a coordinate

