

Linear Graphs - PDF Copy

The presentation contains 31 slides with the objective of enabling students to: **Draw the graphs of equations that have the general form: $y = mx + c$.** The presentation recaps the idea of drawing a graph from a given set of coordinates and then develops the technique of using a table to methodically obtain coordinates from an equation.

Drawing Linear Graphs

Objectives:
Draw the graphs of equations that have the general form:
 $y = mx + c$

Grade D-C Topic

Here are a set of coordinates for a graph.

x	0	1	2	3	4	5
y	-1	1	3	5	7	9

We can plot these coordinates and then draw the graph.

Usually, we have to get the coordinates from equations.

Here is an example of an equation

$y = 2x + 1$

We can obtain its coordinates like this...

Start a table with simple x values like this...

$y = 2x + 1$

x	-1	0	1	2	3	4

In exams, you will be told which x values to use. For this presentation, we've used the values in our tables.

Start a table with simple x values like this...

$y = 2x + 1$

Find the value of 2x. This means 2 x x

x	-1	0	1	2	3	4
2x	-2	0	2	4	6	8
+1	-1	1	3	5	7	9
y						

Start a table with simple x values like this...

$y = 2x + 1$

Find the value of 2x. This means 2 x x

x	-1	0	1	2	3	4
2x	-2	0	2	4	6	8
+1	-1	1	3	5	7	9
y						

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Start a table with simple x values like this...

$y = 2x + 1$

Find the value of 2x. This means 2 x x

x	-1	0	1	2	3	4
2x	-2	0	2	4	6	8
+1	-1	1	3	5	7	9
y						

Finally, we need to do the +1 part of the equation.

Start a table with simple x values like this...

$y = 2x + 1$

Find the value of 2x. This means 2 x x

x	-1	0	1	2	3	4
2x	-2	0	2	4	6	8
+1	-1	1	3	5	7	9
y	-1	1	3	5	7	9

Now, we have the coordinates of the equation and we can plot and draw the graph.

$y = 2x + 1$

x	-1	0	1	2	3	4
2x	-2	0	2	4	6	8
+1	-1	1	3	5	7	9
y	-1	1	3	5	7	9

Now, we have the coordinates of the equation and we can plot and draw the graph.

$y = 2x + 1$

The equation has a straight line.

Equations like these that produce a straight line graph are called **linear equations**.

All linear equations have the general form $y = mx + c$

For our example:

- The value of m was 2
- The value of c was 1

But m and c can be any number.

The next exercise can be copied from the screen, but it is best done on the blank work sheet shown on the right.

This can be obtained from brain-cells.co.uk

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Draw the graphs of:

- $y = x + 5$
- $y = x - 3$
- $y = 2x + 3$
- $y = 3x + 1$
- $y = 3x - 2$
- $y = 4x - 3$

Draw the graph of: $y = x + 5$

x	-1	0	1	2	3	4
+5	4	5	6	7	8	9
y	4	5	6	7	8	9

Draw the graph of: $y = x - 3$

x	-1	0	1	2	3	4
-3	-4	-3	-2	-1	0	1
y	-4	-3	-2	-1	0	1

Draw the graph of: $y = 2x + 3$

x	-1	0	1	2	3	4
2x	-2	0	2	4	6	8
+3	1	3	5	7	9	11
y	1	3	5	7	9	11

Draw the graph of: $y = 3x + 1$

x	-1	0	1	2	3	4
3x	-3	0	3	6	9	12
+1	-2	1	4	7	10	13
y	-2	1	4	7	10	13

Draw the graph of: $y = 3x - 2$

x	-1	0	1	2	3	4
3x	-3	0	3	6	9	12
-2	-5	-2	1	4	7	10
y	-5	-2	1	4	7	10

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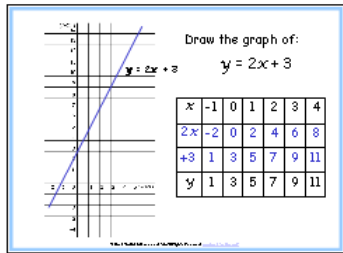
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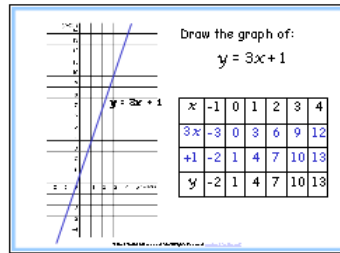
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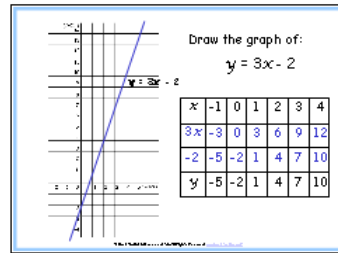
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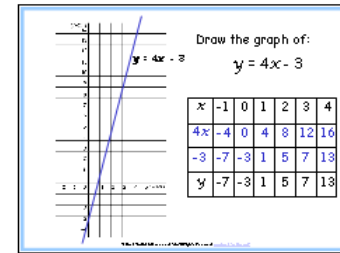
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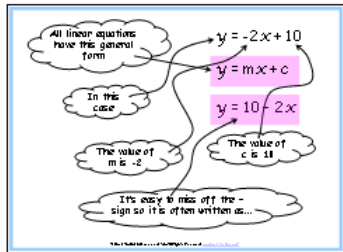
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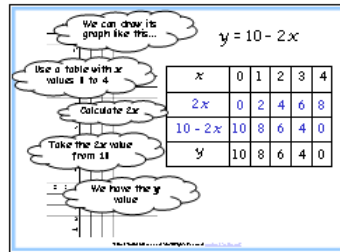
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Dealing with equations like
 $y = 8 - x$
 and
 $y = 10 - 2x$

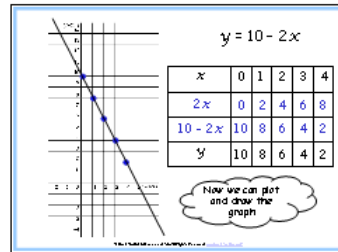
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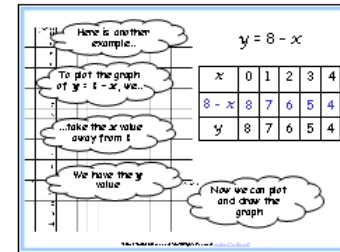
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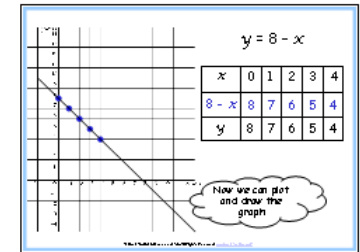
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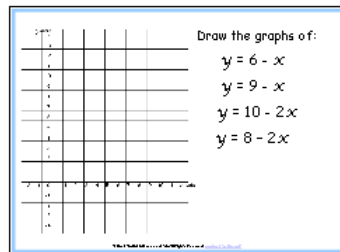


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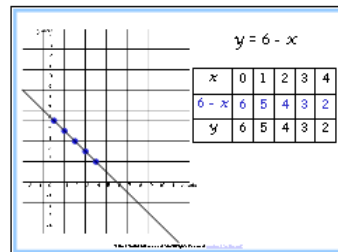
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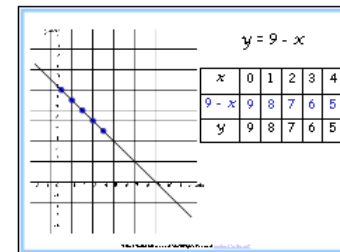
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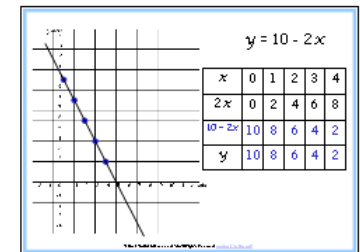
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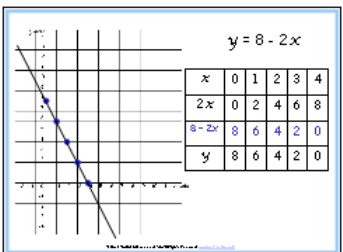
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