
Friday
Fun

Draw the straight line represented by the equation $y = 2x$

Method

To draw this graph you first of all have to work out **at least 3 co-ordinates**
Using only 2 isn't a good idea as you could have made a mistake, more than 3 and you are spending a lot of extra time calculating.

You can pick any 3 values for **x.** e.g. x = 2, 4 and 6.

Then substitute these values to find the corresponding **y** value.

- when $x = 2$ then $y = 2 \times 2 = 4$
- when $x = 4$ then $y = 2 \times 4 = 8$
- when $x = 6$ then $y = 2 \times 6 = 12$

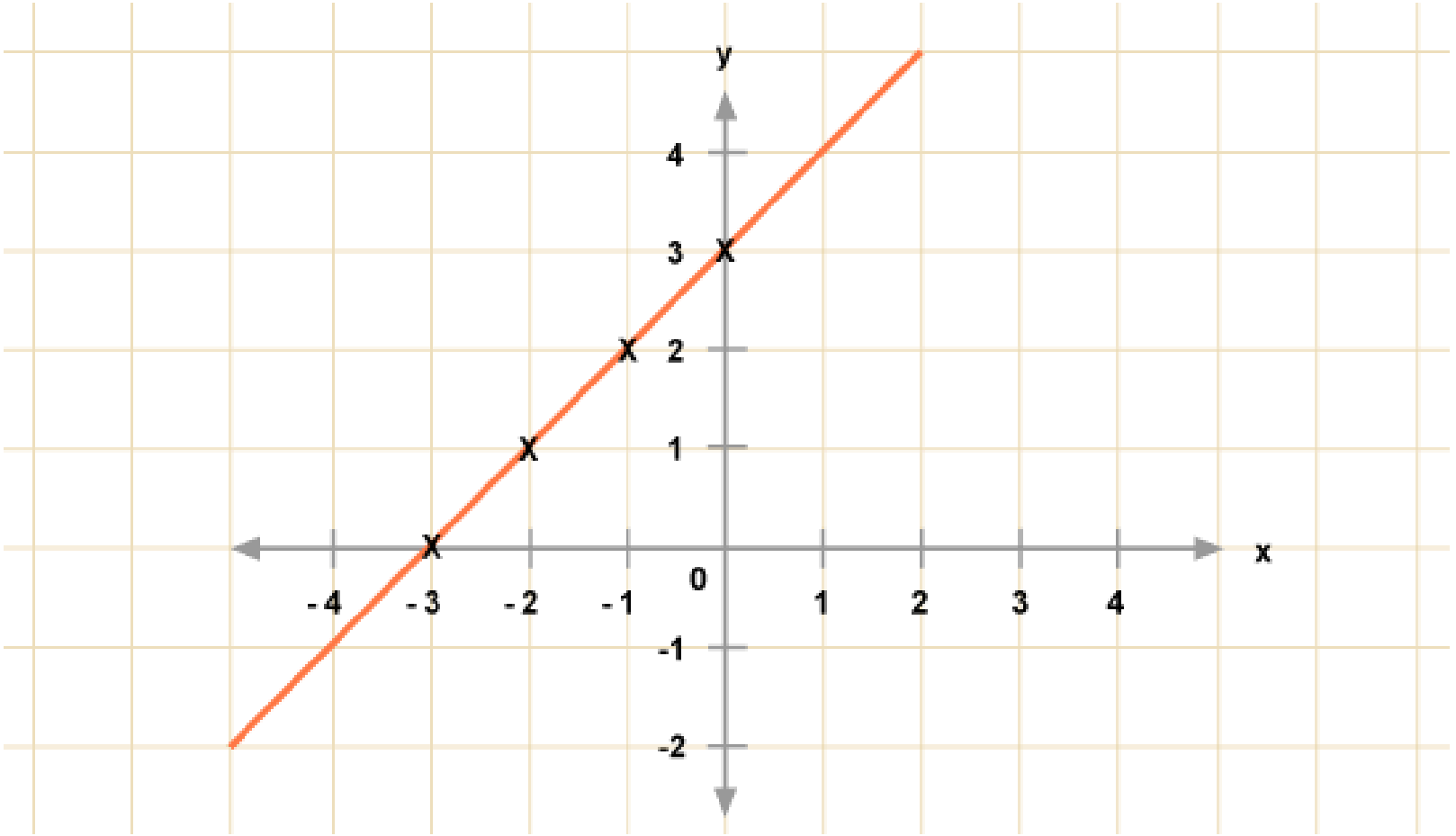
We now have the co-ordinates as **(2 , 4) (4, 8)** and **(6, 12)**.

You can now pick the scale, plot the points and connect them in a straight line.

Obviously x scale could be from 0 to 10 and y from 0 to 15 or 20.

x	-3	-2	-1	0	1	2	3
y= x +3	0	1	2	3	4	5	6

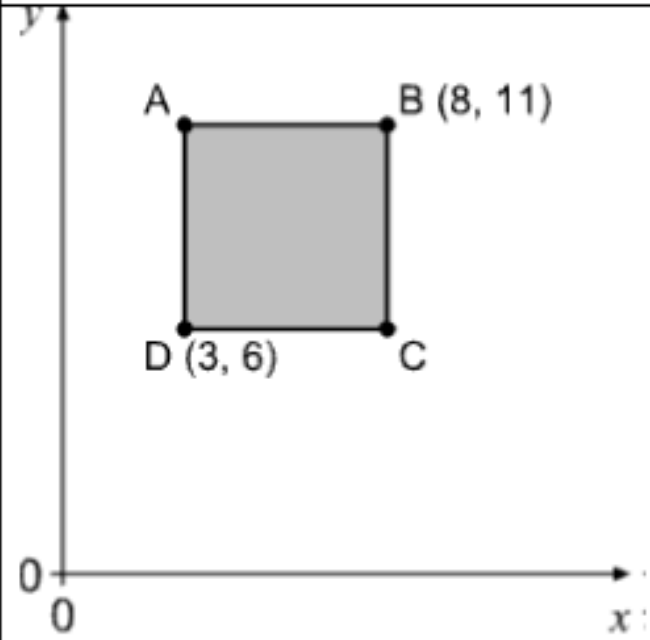
Take a look at the graph y = x + 3 and see how the values are plotted.



If the question does not ask you to complete a table of values first, you can still create one by making up your own values for **x**. You should work out a minimum of 3 points for a straight-line graph, in case one of them is wrong.

2D shape, co-ordinates, translation and reflection. Spring 1.

If (-2, -2) and (2, 2) are coordinates of two pairs of vertices for a square, can you find all the other possible coordinates of the missing vertices.	
Why is the point (4, 1) not the same as (1, 4)? Draw a diagram to prove it.	

Here is a shaded square. Write the coordinates for point A and point C. Explain how you worked them out by annotating the diagram.	
Here is a pentagon drawn on a coordinate grid. The pentagon is symmetrical. Explain how you would work out the coordinates of point C? What if the shape was reflected in the y axis. What would the coordinates of point A be?	

Draw and label axes on squared paper, choosing a suitable scale. Plot these points. A (–1, 1) B (2, –1) C (–3, –1) D (5, –1) E (2, 2) F (1, –2) G (5, 2) H (2, 1) a. Name the four points that are the vertices of: i. a square; b. ii. a non-square parallelogram; c. iii. a non-square trapezium.	
A, B, C and D are the vertices of a rectangle. A and B are shown on the grid. If D is the point (3, 4) write the coordinates of point C.	

Three of the four vertices of a square are (3, 10), (5, 12) and (7, 10). Work out the coordinates of the fourth vertex.	
The points (-5, -3), (-1, 2) and (3, -1) are the vertices of a triangle. Identify where the vertices lie after i) a translation of 3 units up ii) a reflection in the x-axis.	

https://nrich.maths.org/6288

Treasure Hunt

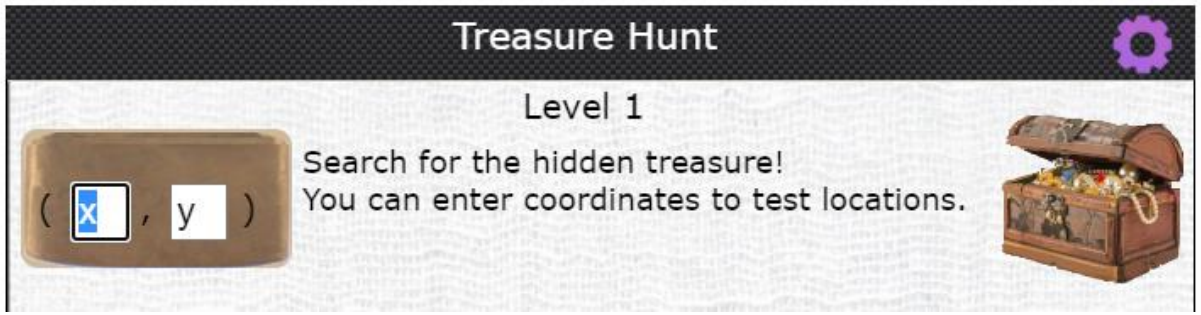
Age 7 to 14 ★

Can you find the hidden treasure?

The treasure has been hidden somewhere on this beach, where the grid lines intersect (cross).

Input coordinates to help find the treasure with the fewest guesses. The interactivity gives you the shortest distance you'd have to travel (along the grid lines) to reach the treasure.

Can you find a reliable strategy for choosing coordinates that will locate the treasure in the minimum number of guesses?

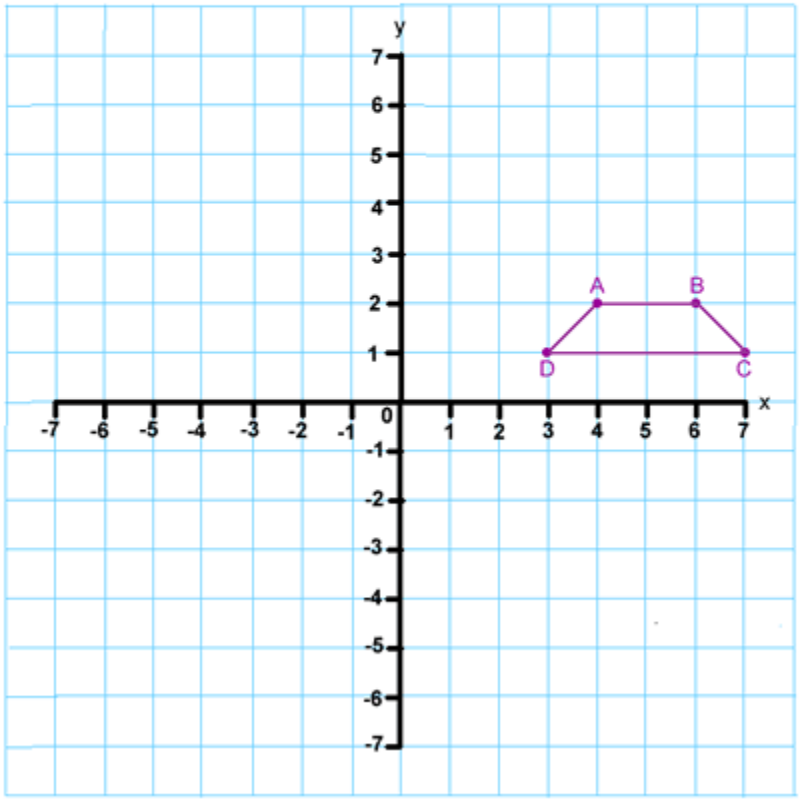


https://nrich.maths.org/1111

Transformation Tease

Age 7 to 11 ★★★

Here is a set of axes with one shape drawn in the first quadrant:



We’ll complete the answers in class and send them as a screenshot to SeeSaw.