

Year 6 – Geometry: Position and Direction

National Curriculum Aims

- describe positions on the full coordinate grid (all 4 quadrants)
- draw and translate simple shapes on the coordinate plane, and reflect them in the axes

Key Vocabulary

Axes	The horizontal and vertical number line
X axis	The line on a graph that runs horizontally (left-right) through zero.
Y axis	The line on a graph that runs vertically (up-down) through zero.
Coordinate	A set of values that show an exact position.
Origin	The starting point. On a number line it is 0. On a two-dimensional graph it is where the X axis and Y axis cross
Quadrant	Any of the 4 areas made when we divide up a plane by an x and y axis,
Reflection	An image or shape as it would be seen in a mirror.
Rotation	Rotation has a central point that stays fixed and everything else moves around that point.
Translate	Moving a shape without rotating or flipping it.



Home Learning

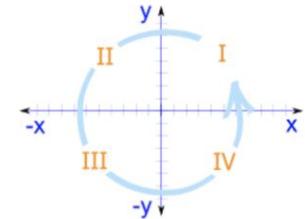
- Can you play a game of battleships with a family member to practice placing coordinates.
- Or use the following link:

<https://www.mathsisfun.com/games/advanced-battleship-game.html>

Core Knowledge and Representations

Four Quadrants

When we include **negative values**, the x and y axes divide the space up into 4 pieces:



Quadrants I, II, III and IV

(They are numbered in a counter-clockwise direction)

- In **Quadrant I** both x and y are positive,
- in **Quadrant II** x is **negative** (y is still positive),
- in **Quadrant III** both x and y are **negative**, and
- in **Quadrant IV** x is positive again, and y is **negative**.

Like this:



Quadrant	X (horizontal)	Y (vertical)	Example
I	Positive	Positive	(3,2)
II	Negative	Positive	
III	Negative	Negative	(-2,-1)
IV	Positive	Negative	

Reflections

Every point is the **same distance from the central line** !

... and ...

The reflection has **the same size** as the original image

The central line is called the **Mirror Line** ...

