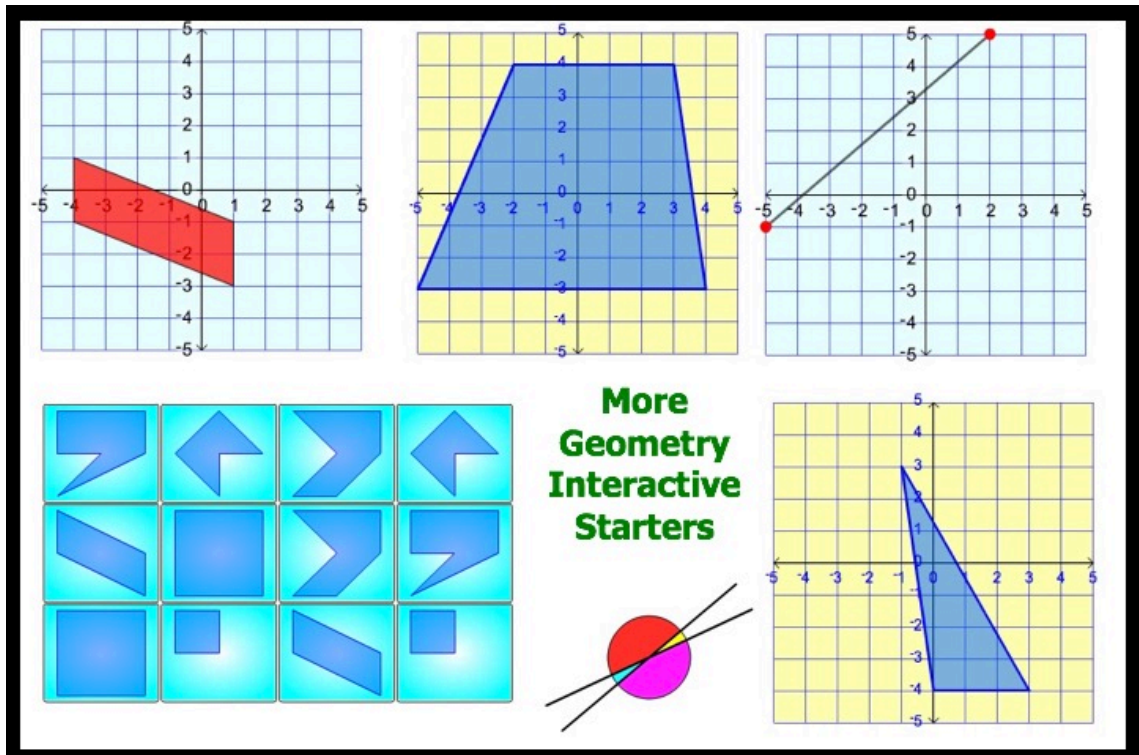


# Y8 & Y9 Geometry Starters



The image contains several geometry-related components:

- Three coordinate grids showing different shapes:
  - A red trapezium with vertices at (-4, 0), (-1, 0), (-1, -3), and (-4, -3).
  - A blue trapezium with vertices at (-5, -3), (4, -3), (4, 4), and (-2, 4).
  - A line segment with endpoints at (-5, -5) and (2, 5).
- A 3x4 grid of blue icons representing various geometric transformations: reflections, rotations, and enlargements.
- The text "More Geometry Interactive Starters" in green.
- A diagram of a circle with two intersecting lines, one red and one pink.
- A coordinate grid showing a blue triangle with vertices at (-1, 3), (-1, -4), and (3, -4).

**A Spire Maths Activity**

<https://spiremaths.co.uk/ia/>

There are 12 Geometry Interactives: each with three levels. The titles of the interactives are given below. Brief teacher notes are given for each interactive.

**Unfortunately flash files will not work on iPads or iPhones.**

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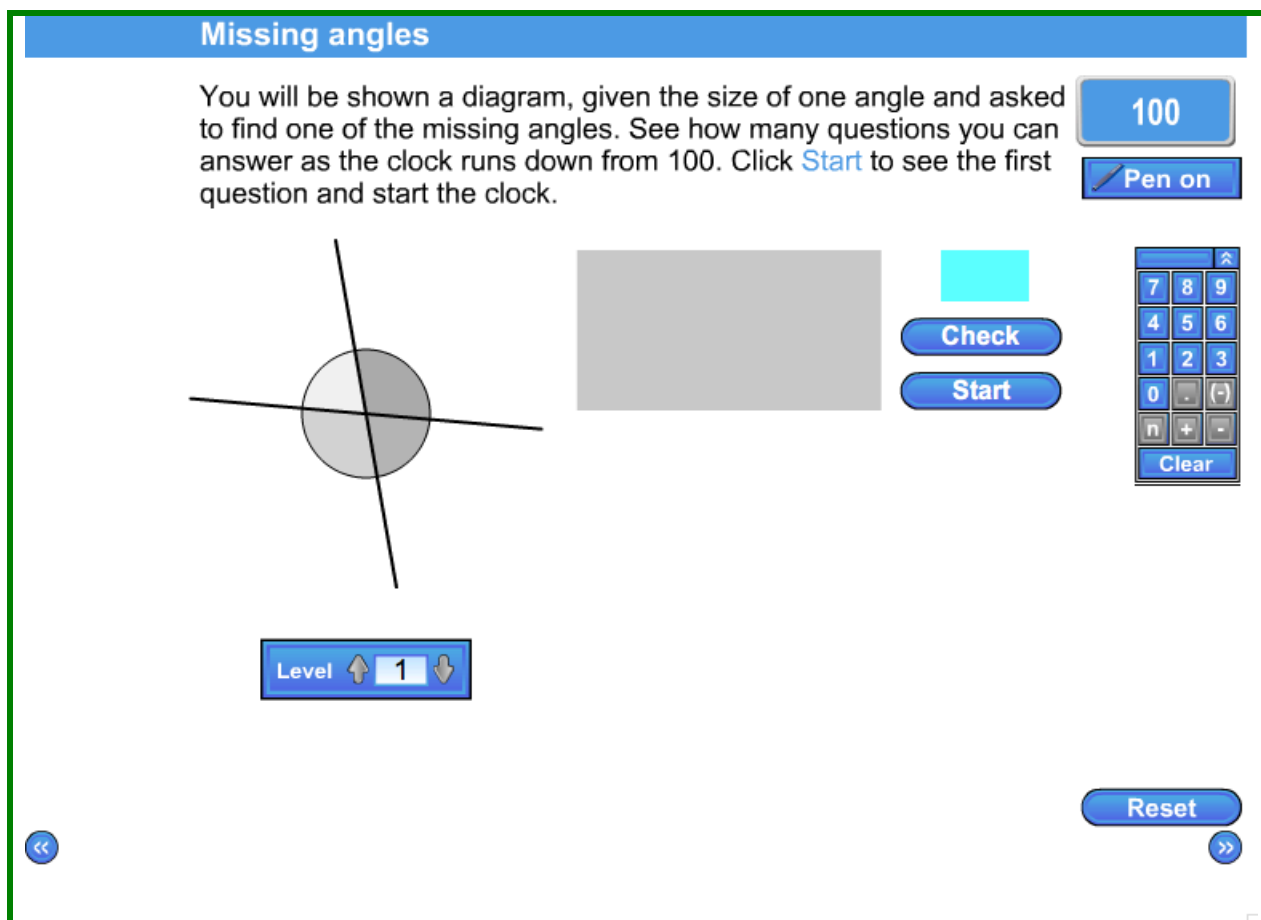
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## Missing angles

**OBJECTIVE(S):** Recognise and use angles at a point add up to 180 degrees.  
**DESCRIPTION:** Pupils are given angles and have to find the missing named angle when 2 or 3 lines cross at a point.

**Missing angles**

You will be shown a diagram, given the size of one angle and asked to find one of the missing angles. See how many questions you can answer as the clock runs down from 100. Click **Start** to see the first question and start the clock.



Level  1

Reset

Two or three lines (depending on the level) are shown crossing at a point. You are given one (two lines) or two (three lines) angles and asked to key into a blue cell a missing angle. A timer counts down from 100. When it reaches 0 you are told your score (the number of correct answers). At any point you can click New to move to another question. There are 3 levels differentiated by the number of lines crossing: level 1 has two lines crossing; level 2 has two or three and level 3 has three lines.

Spire Maths interactive files available in a flash format at: <https://spiremaths.co.uk/ia/>

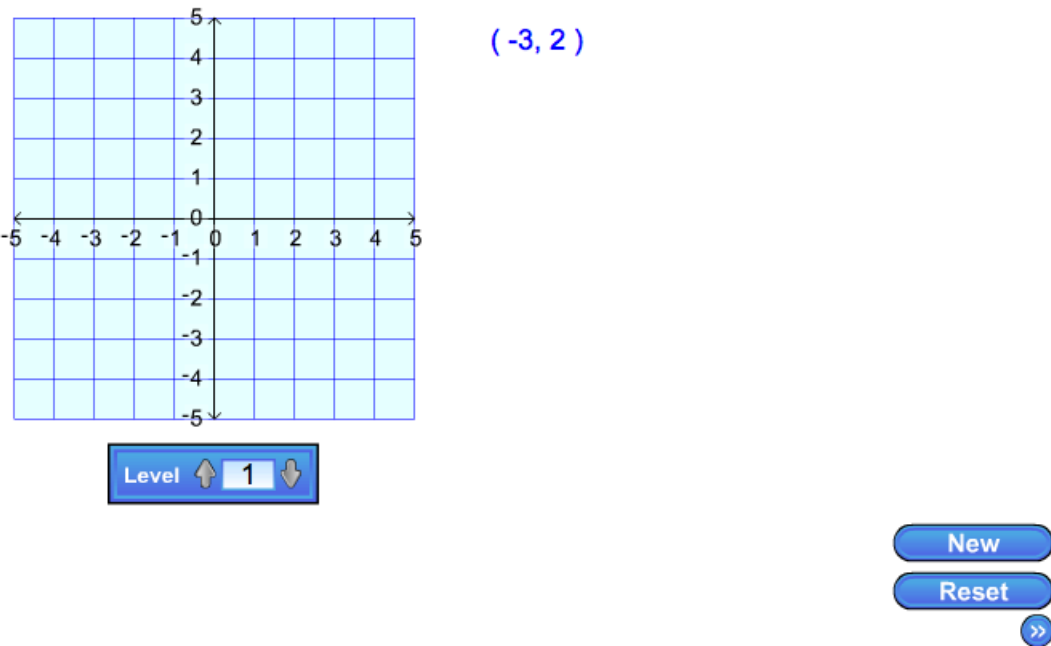
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## Co-ordinate practice

**OBJECTIVE(S):** Know co-ordinates on a co-ordinate grid in all four quadrants.  
**DESCRIPTION:** Co-ordinate grid where co-ordinates are given and you have to click on appropriate grid points.

**Co-ordinate practice**

You are going to make a shape on the grid. A co-ordinate is shown in blue text to the right of the grid, click at this point on the grid.



Pen on

$(-3, 2)$

Level  1

New

Reset

◀ ▶

A co-ordinate grid is shown. You are given co-ordinates one at a time and asked to click at the appropriate point on the grid. When 3 or 4 points have been clicked a triangle or quadrilateral is completed and filled in.  
There are 3 levels differentiated by the numbers involved - negatives and halves for the co-ordinates.

Spire Maths interactive files available in a flash format at: <https://spiremaths.co.uk/ia/>

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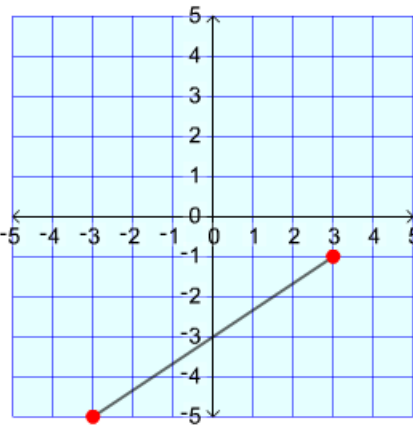
## Co-ordinates and straight lines

**OBJECTIVE(S):** Find mid-points of line on a co-ordinate grid.

**DESCRIPTION:** Given two a line find its mid-point.

### Co-ordinates and midpoints

Use the keypad to enter the co-ordinates of the mid-point of the line shown on the grid.



Mid-point is (  ,  )

Pen on

7	8	9	^
4	5	6	
1	2	3	
0	.	(-)	
n	+	-	
<input type="button" value="Clear"/>			

Level  2

A co-ordinate grid is shown. You are given a line and asked to find its midpoint. At level 1 you click on the point and at levels 2 and 3 you have to give the co-ordinates. Level 3 may involve halves.

Spire Maths interactive files available in a flash format at: <https://spiremaths.co.uk/ia/>

**Unfortunately they will not work on iPads or iPhones.**

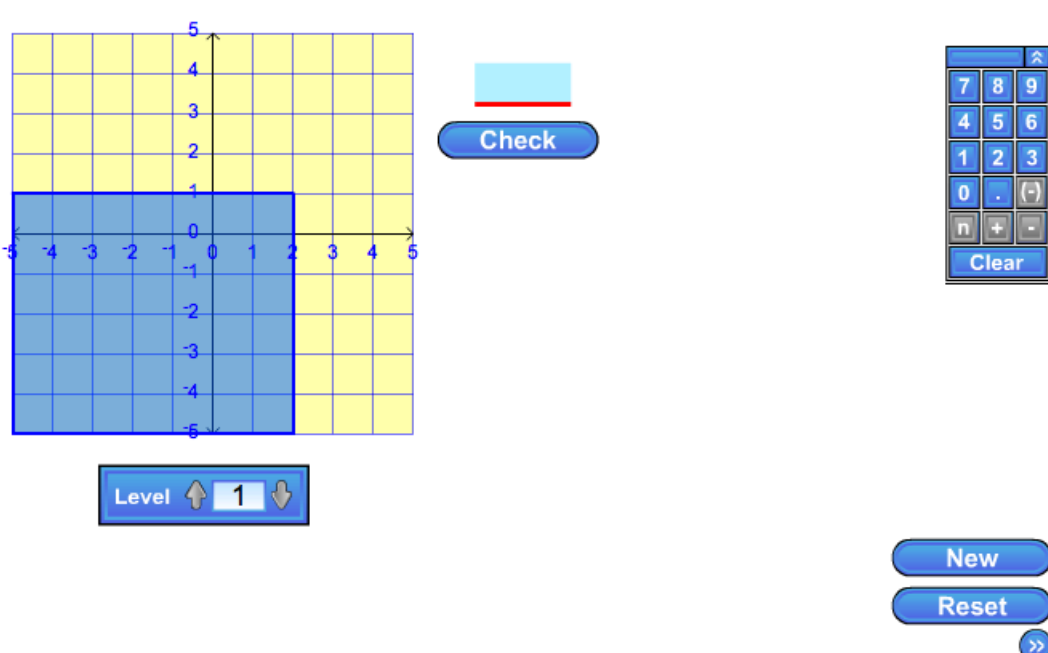
## Areas of quadrilaterals

**OBJECTIVE(S):** Use the formulae for the area of a rectangle, parallelogram and trapezium.

**DESCRIPTION:** A rectangle, parallelogram or trapezium is shown on a co-ordinate grid and pupils have to find its area.

**Areas of quadrilaterals**

A rectangle is shown on the grid. Use the keypad to enter in the empty blue cell the area of the rectangle in square units. Then click **Check**.



A grid (axes from -5 to +5) is presented on which is shown a quadrilateral. You are asked to find the area of the quadrilateral and expected to use a formula. There are 3 levels differentiated by the quadrilateral offered. Level one only shows rectangles, level two includes parallelograms as well and level 3 includes trapeziums also.

Spire Maths interactive files available in a flash format at: <https://spiremaths.co.uk/ia/>

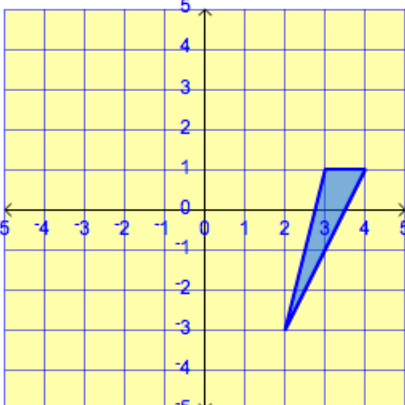
**Unfortunately they will not work on iPads or iPhones.**

## Area of triangles

**OBJECTIVE(S):** Use the formula for the area of a triangle.  
**DESCRIPTION:** A triangle is shown on a co-ordinate grid and pupils have to find its area.

### Area of triangles

A triangle is shown on the grid. Use the keypad to enter in the empty blue cell the area of the triangle in square units. Then click **Check**.



**Pen on**

**Check**

7	8	9
4	5	6
1	2	3
0	.	(-)
n	+	-
<b>Clear</b>		

**Level** **3**

**New**

**Reset**

« »

A grid (axes from -5 to +5) is presented on which is shown a triangle. You are asked to find the area of the triangle.

There are 3 levels differentiated by the triangle offered. Level one only shows right-angled triangles, level two includes acute, non-right angled triangles as well and level 3 includes obtuse angled triangles also.

Spire Maths interactive files available in a flash format at: <https://spiremaths.co.uk/ia/>

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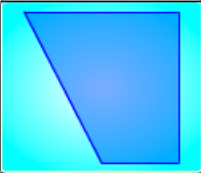
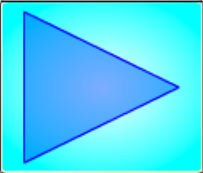









**OBJECTIVE(S):** Recognise congruent shapes.

**DESCRIPTION:** A twelve card matching challenge to pair congruent shapes.

### Congruent shapes

Here are six pairs of congruent shapes. You have 20 seconds to look at the cards before they are turned over. Click a shape and its congruent shape to find all the matching pairs.

Pen on

Level ↑ 1 ↓

New  
Show timer  
Reset

« »

Six pairs of congruent shapes are presented on cards in a 3 by 4 array. The cards are shown face up for 20 seconds (level 1) and then turned over. Pupils are invited to click on cards in order to try and find matching pairs. If the questions and solutions correspond then the 'It's a match' message is shown and the cards disappear from the screen. If the selected cards do not correspond then a 'No match' message is shown. The same cards can be used again, but in different positions, by clicking Repeat.

The 3 levels are differentiated by the orientation of the shapes (level 1 uses identical positioning, level 2 allows for rotations as well and level 3 includes reflections) and the time the cards are shown face up.

The timer can be used (it runs whether shown or hidden) to show the total time taken to find all nine matching pairs. It starts when the first card is clicked attempting to make a match.

Spire Maths interactive files available in a flash format at: <https://spiremaths.co.uk/ia/>

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