Y4 Maths — What they need to know...

This document will focus on developing children's understanding of **geometry**. Below are the objectives that will be covered in Year 4:

Shape: The children should be able to classify and compare shapes, including triangles and quadrilaterals, based on their properties. These can include number of sides, types of angles, number of lines of symmetry, types of lines (parallel or perpendicular) or whether they are regular (all sides the same length) or irregular (sides of different lengths).
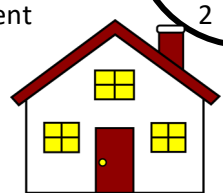
Angles: With angles, children are expected to be able to identify acute and obtuse angles, and then also to compare and order angles up to 180 degrees.

Symmetry: Children should be able to identify lines of symmetry in 2-D shapes presented in different orientations. They should also be able to complete a simple symmetric figure.

Coordinates: They should be able to read and plot coordinates in the first quadrant of a grid. Children should also be able to describe translations on a grid ,for example left/right and up/down.
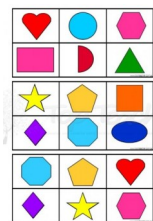
Activities & Games:

✰✰✰ **Shape hunt:** Have a look around your home and see if you can find as many different -D and 3-D shapes as possible. You'll find plenty of rectangles, but see if you can spot more unusual shapes, such as hexagons or semi-circles. Now have a go at drawing them on a piece of paper and labelling their properties. Alternatively, you could take pictures of them.
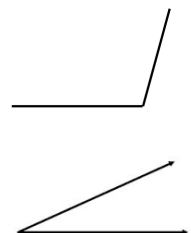
✰ **Drawing shapes:** Download and print the isometric paper from this website. Can you use it to draw all of these shapes listed below? You will need to use a ruler.

rectangle	rhombus	trapezium	square
parallelogram	equilateral triangle	right angled triangle	
scalene triangle	isosceles triangle	pentagon	hexagon

Now choose at least 2 shapes and write down the properties of each one. How many sides does it have and are any the same length? What types of lines does it have? Are there any lines of symmetry? What types of angles are there?

✰✰ **Angles:** You will need someone to work with and a piece of string (not too long!). Each person takes one end of the string. Now can you also hold the string in the middle and create different angles? Can you make a right angle? What about an acute or obtuse angle? Once you've done this, you could try estimating how many degrees you think each angle that you've created is.

✰ **Symmetry:** Lay out a piece of string in your garden or at your local park; this will be your line of symmetry. Now use objects that you find outside (sticks, leaves, stones - but remember not to pick anything!) to create a symmetrical image.

✰ **Coordinates:** Use your string to create a giant 8x8 coordinates grid outside somewhere. Follow instructions from a grown up to start on a particular spot on the grid and then 'translate' yourself to another location. What are your new coordinates? Can you think of some other games you can play on your coordinates grid?

Going deeper...

COPS AND ROBBERS! - **Click this link [here](#).**

Can you help the police locate the robber? He is hiding in a modern city, where the roads are all at right angles and equally spaced. Imagine the grid lines represent roads. The robber is hiding at a crossroads.

Input coordinates to help the police search and find the robber with the fewest guesses.

Getting Started:

Try to decide which places are good for first guesses. Once you've got feedback on your first guess, identify all the possible places where the robber could be. What pattern does this make? Have another guess. Use the feedback to identify all the possible places where the robber could be. Now use the feedback from both guesses to find some overlapping points.

Continue in the same way... Can you find a reliable strategy for choosing coordinates that will locate the robber in the minimum number of guesses?

Wonderful websites

My Maths

The MyMaths activities are set for the year group as a whole, therefore some are harder than others. Feel free to try as many as you can but don't worry if you find some of them too difficult.

SHAPES IN SPACE

SHAPES

NRICH—POSITION AND DIRECTION

NRICH—PROPERTIES OF SHAPES

Whilst it can be very tempting to encourage your child to have a go at the more challenging activities, it is far better to work with them at a level they feel confident with. Significant and regular practise of even the most basic skills outlined in this document will lead to a much deeper understanding and greater proficiency, and ultimately a much more pleasant 'homework' experience for you and your child!