**Outdoor Maths Ideas**

1. Using natural objects, can you make different 2D shapes? Can you make a triangle from twigs? Can you use stones to make a circle? Which natural objects could you use to make a pentagon?
2. Place a hoop on the grass and estimate how many flowers are inside. Count them. Was your estimate correct? Will there be the same number of flowers if you move your hoop somewhere else? How could you record how many flowers are in the hoop?
3. Find different natural materials and turn them in to a natural symmetrical pattern. Can you make both sides look identical? Could you use different 2D shapes within your picture? Do you know any patterns that exist in nature that are symmetrical?
4. Using different natural materials, create your own pattern. What would come next in your sequence? What would the 10th object be? What would the 20th or 100th object be? How could you work it out?
5. Find an even amount of leaves. How many different ways can you arrange them? What arrays could you use? What happens when you have a different amount of leaves? Does it work with an odd amount of leaves?
6. Collect a variety of sticks. Using string, tie the sticks together to make a 3D shape eg: a cube or a triangular prism. How many edges does your shape have? How many vertices does it have? Could you make your shape larger? How?
7. Find a variety of sticks. Break some of them into halves or quarters and turn your sticks in to a fraction wall.
8. Give yourself a number (eg 150). Estimate how far you will walk to if you walk 150 steps. Count it out and find where you finish. Was your estimate correct? Did you go further than you thought you would? Is it possible to go 100 steps in every direction from where you are standing? Why?
9. Make a scaled drawing of your playground or garden. Measure the sides of the playground/garden and the angles at the corners, making a rough plan. Decide on a scale: how many metres will each centimetre on your drawing represent?
10. Estimate how many blades of grass there are in one square metre. Mark a small area of grass on the field or on your garden (1cm x 1cm = 1cm²). Count the blades of grass in this area. Multiply to calculate the number in m². Can you use this answer to help you estimate the number of blades of grass in the entire field/garden?
11. Measure and record the length of a shadow as it changes during the day. Record the angle that the shadow moves at regular intervals. What does the changing shadow inform us about the movement of the earth?
12. Look at some brick patterns. Are all of the patterns the same? Estimate the number of bricks in a wall by estimating a smaller area. Can you create your own tessellating brick pattern?