

MATHS learning springboards



Maths Trail

Maths trail / orienteering using plants in the school grounds

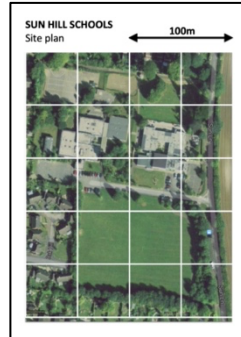
Aim: Create a maths orienteering trail around the grounds, using a plan of the grounds, and devise a maths activity at each point.

Resources:

An up-to-date detailed plan of the school grounds, with a grid drawn over it.

Identify a series of plants, trees or habitats and give each a co-ordinate or grid reference. Now allocate each location to a group of pupils to use to plan an activity such as:

- Measure the height of this dogwood shrub and round to a whole number.
- This is a birch tree. What is the 'value' of this tree if the letter A is worth 1, B is worth 2, C is worth 3 and so on (alpha numeric code)?
- A dandelion flower head produces (at least) 150 seeds per flower. How many flowers can you see on one plant? Calculate how many seeds will be produced by this plant. If only 9% of the seeds survive to reproduce, how many seedlings will each plant produce?
- Measure the area of this vegetable growing bed. If carrots need to be planted 8cm apart in rows 20 cm wide, how many carrots can you grow in this bed?
- Estimate the height of this ash tree - see *Pappus Learning Springboards – Maths, Estimating and Twig Clinometer*
- Find an acute angle and a reflex angle in this shrub and measure them.



This is a very versatile outdoor activity that can be adapted to meet any maths learning objectives or as a memorable way to reflect on previous learning.

Key vocabulary: estimate, measure, calculate, angle types

Success criteria:

- ✓ I can write and solve maths problems using nature and natural features as my inspiration
- ✓ I can work cooperatively with my peers to create an orienteering trail.

Number bonds

Make a set of number bond 'beads'

Aim: pupils practice number bonds and make a class resource.

Resources:

Elder rods, conkers or hazel slices / 'cookies'

Number bonds are the foundations of maths, and help pupils develop a mental picture of relationships between a number and the parts that make it. For example, learning that subtraction is not different from addition, it's a mirror image of it: $5+3=8$ and $8-5=3$ and $8-3=5$ etc...



Activity 1

Make and use elder beads to develop number bond understanding - see *Pappus Playful Springboards – Elder*. Ask pupils to make the beads in specific lengths: 1cm - 10cm plus 15cm and 20cm. Build up a class set of elder beads and pupils can use them to make number sentences – or make a series of bracelets or necklaces demonstrating the number bonds.

Alternatives:

Use slices of tree branches (wood cookies) or conkers, used on a 10 frame or abacus.

More springboards:

- Playful Springboards - Elder.

Success criteria:

- ✓ I have made a natural resource to help me learn number bonds to 10
- ✓ I can use my new resource to quickly recall number bonds to 10



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