

4. Degrees on the downs

Twigging that trees, chalk and wildflowers have lots of angles!

Activity description:

This activity has a creative start and helps children to develop their mathematical understanding of shape by visualising angles in an active fun way. Why not begin by taking the children outside and demonstrating some 'angle aerobics?!'

Can they can move their bodies to construct the shapes of acute, obtuse and reflex angles?

Ask the children how they think their body shapes compare when making different angles? Which angle is the widest, narrowest? How many degrees does their body shape represent? 90° , 180° or 360° ?

Spark some imaginative discussions! Do the shapes they are making remind them of anything? For example, acute angles, made by arm movements, make great shark's jaws!

Tell the children they are going to become detectives and that their challenge is to investigate different 'degrees on the downs.' Use the chalk grassland game cards to introduce and develop their understanding of the term 'chalk downs.' Encourage exploration of their surroundings and ask them to record the angles they see around them in the table provided. Ask the children what equipment they will require to complete the task?

The children will soon twig that trees have many angles, but hopefully, with a bit of encouragement, and if possible, a magnifying glass, they will begin to discover angles within: the veins of leaves, spider's webs, flints or chalk, reflected in puddles, gates, fences, buildings, path surfacing and the list goes on! This may be a good point to discuss whether the angles they have discovered are natural or man-made?

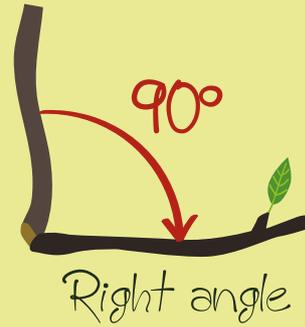
To get into the role of 'detectives,' and introduce scale to the enquiry, it may be worth giving each group a pair of binoculars to look for 'distant degrees' and shapes across the landscape. Do all hedgerows join at right angles? Can the children describe some of the features they see, for example: steep or gentle sloping hills?



Example of how veins on leaves create angles

Equipment:

- Twiggling Angles table
- Natural resources - sticks
- Clipboards, pens or pencils
- Magnifying glasses
- Binoculars
- Protractors
- Chalk Downs true and false game
- Wildflower and/or grassland identification chart
- Chalk grassland game cards activity



Curriculum links:

KS2 Maths

Geometry -
Properties of shapes -

Know that angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles and measure them in degrees.

Identify:

Angles at a point and one whole turn (360°)

Angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°)

Other multiples of 90°

Extension activities:

Encourage the children to create 2D or 3D stick drawings. Can they create a shape or shapes within a shape by using natural materials and then use these to: estimate the number of degrees, see how many right angles they can find and then measure them to see how accurate they are?

Use a tablet or camera to take pictures of the angles found to continue discussions once back inside the classroom.

Flint is a hard-sedimentary rock, which frequently occurs within the bedrock of the chalk downs. Flint was one of the most important materials in the Stone Age and was used to make all kinds of tools. Why not find some flints and investigate their angles?

