

Week 4, Activity 1 (pt. 1) - What shapes can you make?



Key skills

- To identify and describe 2D shapes.

Have ready

- A selection of sticks.

Activity

- The challenge is to make as many different shapes as possible using the sticks.
- Talk about the properties of the shapes and see if your child can name some of the shapes. Triangles, square, rectangle, quadrilateral, polygon.
- Take a number of sticks, for example, 15 – how many rectangles can you make with 15 sticks?

Week 4, Activity 1 (pt. 2) - Spot the shapes

Key skills








- To draw and make 2D shapes using materials.

Have ready

- Yourself.
- Possibly a camera.



Activity

- Have a look around you can you find (take a photo) a shape with:
 -  Five or more sides.
 -  2 right angles.
 -  2 acute angles.
 -  One pair of parallel sides.
 -  2 perpendicular sides.
 -  4 lines of symmetry.
 -  More than 4 diagonal lines.
- You could make the shapes you see with sticks!

Week 4, Activity 1 (pt. 3) - Fractals

Key skills

- To problem solve.

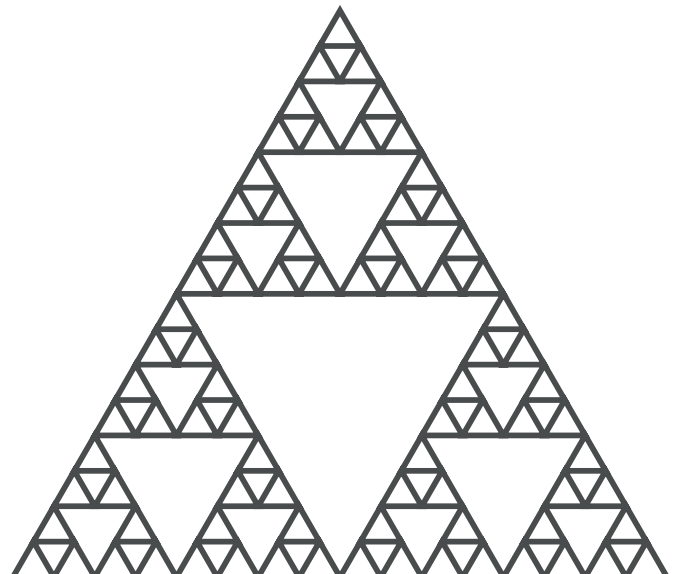
Have ready

- Pencil and paper.
- Sticks or alternatives.



Activity

- A fractal is a never-ending pattern that repeats itself at different scales. A fractal repeatedly follows a rule and continually reproduces copies of itself in various sizes and/or directions. Fractals are surprisingly simple to make.
- One way to examine fractals in nature is to compare a branch with the whole of a tree. The pattern of the branches and leaves on the small branch should mimic the overall shape of the whole tree. Again, it is possible to experiment with the patterns of trees using sticks. Have a go.
- Have a look in nature. Go close up and examine continuation of a pattern in nature.
- The best way to understand the properties and rules of fractals is to make one. This can be done indoors or out. Pick a shape and make up a rule for its repetition.
- Here is an example:



Week 4, Activity 2 - Take ten sticks

Key skills

- To problem solve.

Have ready

- 10 sticks or alternatives.

Activity

- Take ten sticks and put them into three piles any way you like.
- One possible distribution of the sticks is 4 - 1 - 5, but there are lots of other arrangements possible.
- Move the sticks in a way that means each pile now has a different number of sticks.

- Here, we have moved one stick from the left pile to the middle and one from the right pile to the middle. Our example now becomes 3 - 3 - 4.
- Keep rearranging the sticks so that each time there is a different number of sticks in each pile. What do you notice?

