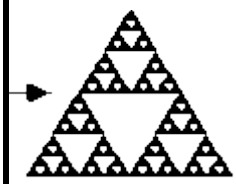
FANTASTIC FRACTALS

How to Make a Sierpinski Poster

Stage 0 One triangle.	
Stage 1 Join the midpoints of the edges of the triangle. Imagine cutting out the central triangle to leave a triangular hole. Colour in what is shown in black in the diagram.	
Stage 2 Join the midpoints of the edges of the three remaining triangles. Imagine cutting out the central triangles leaving three more triangular holes. Colour in what is shown in black in the diagram.	
Stage 3 Repeat this process. At every stage join the midpoints of edges and imagine cutting out the central triangles leaving triangular holes. The fractal is formed from the pieces of the triangle that are not removed.	
Stage 4 The process can be repeated at bigger scales as well as at smaller scales. Put 3 of these triangles together to make a bigger fractal, or 9 or 27 or 81,…	

To make a Poster

You will need a large backing sheet and glue (flip chart paper is ideal) and 27 copies of the Stage 2 triangle all exactly the same size. Each learner should make a Stage 2 triangle and stick it in the correct position on the backing sheet.

How to make a Stage 2 triangle:

- Draw an equilateral triangle.
- Mark and join midpoints of edges to form 4 equilateral triangles.
- Mark and join midpoints of edges in the 3 outer triangles as shown.
- Colour the 9 triangles as in the diagram.
- Cut out the stage 2 triangle.

Stick 3 stage 2 triangles on a backing sheet to make a stage 3 triangle.
Stick 9 stage 2 triangles on a backing sheet to make a stage 4 triangle as shown in the diagram.
Stick 27 stage 2 triangles on a backing sheet to make a stage 5 triangle.

***Related mathematical classwork**: geometry of equilateral triangles, area, enlargements, scale factors, number patterns, geometric series.*