

# Fractals Problem

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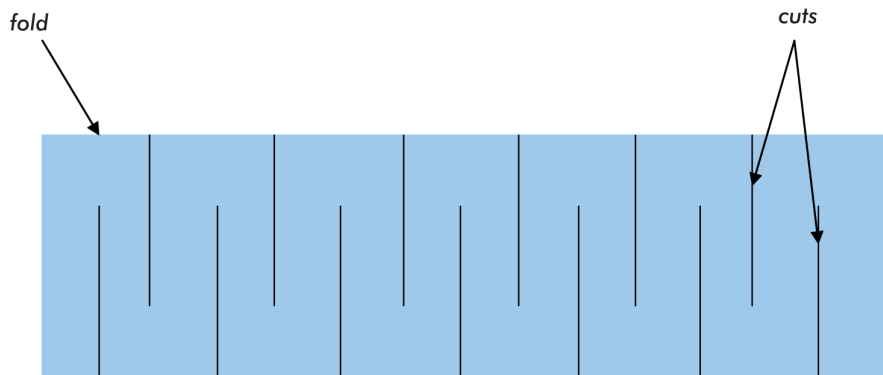
## Equipment required:

- Lots of A4 paper (about 5 sheets per student)
- Scissors
- Pictures of fractals

## Instructions:

- Give students a pair of scissors and a piece of paper.
- Ask them to make a hole in the paper so that they can put their hand through it. The remaining paper must form a complete loop.
- Give students a new piece of paper.
- Ask the students to make a hole so that they can put their head through. Again the remaining paper must form a complete loop.
- Give students a third piece of paper.
- Ask the students to make a hole so that they can put their whole body through. Again the remaining paper must form a complete loop.
- If students succeed, challenge them to get themselves and as many friends as possible through the paper.

*(SOLUTION: The solution is to fold the paper in half and make cuts on alternate sides as shown in the diagram)*



## Discussion:

*Following discussion could include:*

- Changing the perimeter of a shape without changing the area
- Fractals and some images of fractals
- Similar ideas in nature, for example the surface area of the lungs and intestine