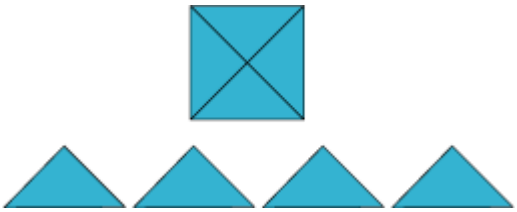
Workshop B **2D Shapes, Patterns and Symmetry**

Task 1

Four Triangles Puzzle: http://nrich.maths.org/141

If you cut a square diagonally from corner to corner you get **four right-angled isosceles triangles.**



How many different shapes can you make by fitting the four triangles back together?

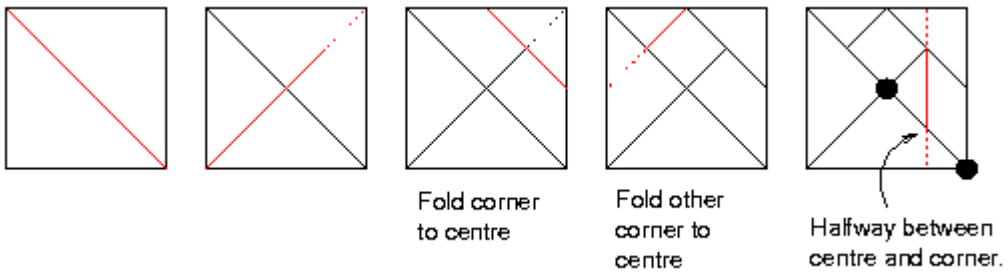
You may only fit **long sides to long sides** and **short sides to short sides.**
The **whole length** of the side must be joined.

How can you be sure that you have found **all** different possibilities?

Task 2

Making tangrams: http://nrich.maths.org/2595

Here's a simple way to make a Tangram without any measuring or ruling lines. All you need is a square of paper and some scissors to cut out the shapes when you've finished folding. Follow the steps shown in each diagram and remember that every fold you make is finding half of a shape or line.



Now you can play around and make lots of pictures and puzzles - like a dog, boat, house, duck, rocket or rabbit.

Task 3

Napkin Origami

Follow the instructions below to create a napkin origami of a pyramid.

Can you create another pattern or shape using **more than one** similar napkin origami?

What **mathematical language**/ **vocabulary** is used during such an activity?

Which **mathematical skills** and **concepts** do children need to know?

Think of new instructions to create a **different** origami.

Task 4

Exploring Tile Patterns

Use the laminated tile cards given to your group to create a **pattern.**

How many different **tiling patterns** can you come up with?

Look at one individual tile. What smaller shapes are used to make the pattern on it?