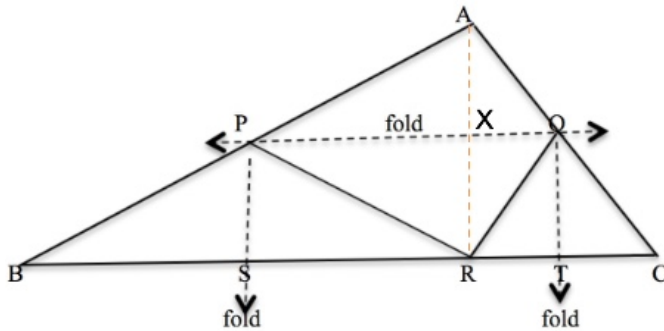


## TRI-FOLD



Take any triangle and label it ABC with A as the largest angle.

Bring A and B together and lightly crease the midpoint of the edge AB, call this P.

Bring A and C together and lightly crease the midpoint of the edge AC, call this Q.

Make the fold through A so that C is on the base of the triangle. Mark the point R.

What do you notice about  $\angle ARB$  and  $\angle ARC$ ?

Fold B to coincide with R and label points P and S. What do you notice?

Fold C to coincide with R and label points Q and T. What do you notice?

Fold along PQ and you will find that points A, B and C all coincide with R.

What do you notice? Does the folding experiment tell you anything else about triangles?

Why does all this happen?

Important geometric facts are demonstrated by this paper folding activity.

Will the same happen for all triangles? If so, can you prove it?

## HELP

It will help you to see which angles are equal, and other geometric properties, if you use colours to mark each set of equal angles in a different colour, and each set of equal lengths in a different colour.

## NEXT

This activity, because it is so open ended, comes with its own extensions. It will take a long time to explore all the possibilities. Can you answer all the Key Questions fully?

*Resources: paper, scissors, rulers, pencils, glue.*