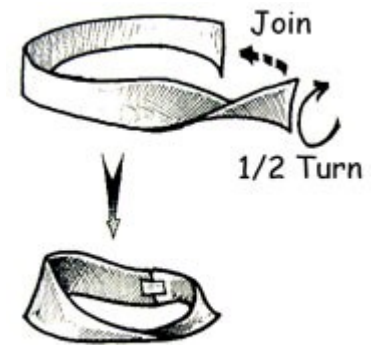


## The Magical Möbius Strip

1) To make a Möbius strip, take a strip of paper, give one side a twist and then glue or sellotape the two ends together.



**Questions:** Do you notice anything special about this object? How many sides does it have? What happens if you draw a line along the middle of the strip? How is this different to a cylinder of paper without a twist?

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2) Draw a line along the middle of the Möbius strip if you haven't done so already. Cut along this strip.



**Questions:** What do you think will happen when you cut along the line? How many pieces will there be after the cut?

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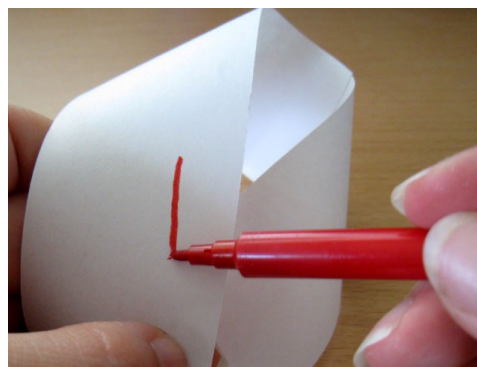
3) Take the new object that you've made and cut it in half again.

**Question:** What do you think will happen this time?

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4) Make yourself a new Möbius strip. This time, draw a line along it a third of the way in from the edge. Cut along the line.

**Question:** Can you predict what you'll get after the cut? Is it surprising?



Now try some of the following extension puzzles.

**Extension 1: How twisted is your strip?**

You can make Möbius strips with different numbers of twists in them. Try making some with 2, 3 or 4 twists. How many sides does each one have? Is there a pattern? Cut these new Möbius strips in half – can you predict what will happen?

**Extension 2: An infinite Möbius story**

The Möbius strip is a one sided piece of paper, meaning you can follow it around and around forever. Try writing a poem or a story on a Möbius strip that goes on forever! For example:

"...once upon a time I walked down the road where I met a very sad rabbit, and when I asked him what was wrong he said...

**Extension 3: Möbius hearts**

For this you will need two Möbius strips, twisted in opposite directions. The two strips should be mirror images of each other.



This is very important, or the result won't come out right! For prettiest results, use some coloured paper.

Now glue/sellotape the strips together at right angles:



Make sure that the two parts are glued very securely!

Finally, cut along the middle of the strips, cutting right over the glued part where the two strips are fixed together. You'll have to make two cuts to complete this step.

If your cutting and gluing have been successful, you should now be the proud owner of two linked hearts!

