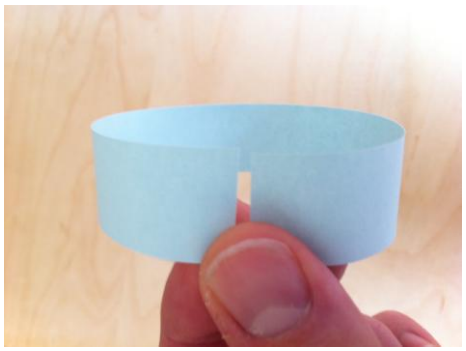
Möbius strips

How to play:

1. Take a strip of paper. Loop this around and hold the two ends together to form a band.



2. Now spin one end around to put a twist in the band and tape the two ends together. You have made a Möbius strip.

3. Now, colour one side of your new strip red and the other side green. What do you notice?

History:

The Möbius strip was discovered by August Ferdinand Möbius in 1858.

Advanced:

The Möbius strip is known as non-orientable. Non-orientable surfaces are important in topology and the ideas here touch on knot theory. The Möbius strip itself has applications in conveyor belt design, in physics such as superconductors, in chemistry and nano-technology, such as molecular knots, and in music, such as in analysing the space of all dyads.

If you take a cylinder and glue the two ends together you get a torus (or donut). If you glue the two ends of a Möbius strip together you get an interesting object called a Klein bottle. Look it up; it too has some interesting properties. (In fact, a true Klein bottle can only be made in 4-dimensions.)