

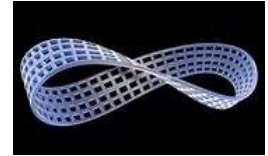
Moebius Strip Activities

Materials:

Long rectangular strip of card stock or paper

Scissors

Tape



- Cut a long strip of paper. The strip should be about 1 centimeter across, and the length, l , should be much longer than the width, w .
- Bring the ends together to make a simple loop.
- Before attaching the ends together, add a single half-twist to one side of the strip (as in the image to the right). The result should look something like this. You have made a Moebius strip.



A **Möbius strip, band, or loop** (US: MOH-bee-əs, MAY-, UK:; German: [$^{\text{m}}\text{ø}:\text{b}j\text{ʊ}\text{s}$]), also spelled Mobius or Moebius, is a surface *with only one side* (when embedded in three-dimensional Euclidean space) *and only one boundary or edge*. The Möbius strip has the mathematical property of being unorientable. Its discovery is attributed to the German mathematicians Johann Benedict Listing and then independently August Ferdinand Möbius in 1858, though a structure similar to the Möbius strip can be seen in Roman mosaics dated circa 200–250 AD.



← This bracelet is being offered for \$850 on eBay.

This wood frame costs \$199 at WalMart. →



Your activity:

1. Make a Moebius strip using the directions above.
2. Put a dot on one side of the paper in the middle (of the paper's width). Do you suspect that your dot is on the inside or outside of the strip? _____

Then use a pen, pencil, or marker to start drawing a line in the middle of the paper from that point. Keep going. Any surprises?

Now, based on your dot work, does the paper have an inside or an outside? _____

Therefore, a Moebius strip has one side (with inside = outside).

How many edges does it have? _____

3. Cut the paper on the middle line as far as you can. What does this process form?
4. Take a photo of both your original Moebius strip (from #1) and the one you found in #3. Include this/these photo(s) with the answers to these questions (in #2 and #3).