

How to impress your soulmate

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14th February 2020

How to impress your soulmate – with Algebraic Topology –

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Step 1: Take two strips of paper



Step 2: Glue them together to form two Möbius bands

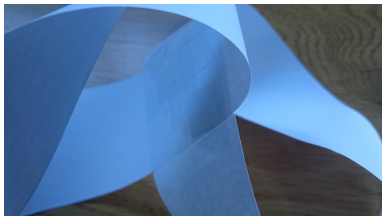


Note: There are two directions, in which the bands can be twisted. Make sure that one of them is twisted in one direction and the other one in the other direction as shown in the picture!

Step 3: Glue the two bands back to back



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This is what the connection should look like up close!

Step 4: Give the result to your soulmate



Step 5: Tell your soulmate to cut both rings open



Tell them to cut both rings along the central circle.

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This is what it looks like after the first ring is cut.

Step 6: Happy Valentine's Day!



Fun facts about Möbius bands



- The Möbius band was discovered by the German mathematician August Ferdinand Möbius in 1858
- It is a non-orientable surface.
- It is one-sided.
- The boundary is a (single) circle.
- You can glue two of them together to obtain a Klein bottle.
- We will define and study it later in the course.