

Making a Science Rope Tube

Materials:

- Length of PVC plastic or cardboard tube
- Caps or tape for covering tube ends
- String or rope (the more slippery the better)
- Metal or plastic ring (clamps and carabineers work well)

*The dimensions of all parts can vary and should be considered together. It's easy to do a little trial and error to make things fit.

Directions:

1. Cut the tube to an appropriate length (any length works well but about 30cm is usually big enough for demonstrating in front of a whole class).
2. Drill two pairs of holes big enough for your rope to pass through. In each pair the holes are opposite one another and near the end of the tube (~4cm from the end). See the diagram below.
3. Feed your first rope through one of the upper holes, through the ring, and back through the other upper hole.
4. Feed the second rope through one of the lower holes, through the ring and back through the other lower hole.
5. At this point you'll have four rope ends sticking out of the four holes.
6. Tie VERY LOOSE knots in each of the four rope ends then begin to pull the four rope ends one at a time until all three other knots catch on the tube. Adjust your knots accordingly until they are in the proper place then cut off excess rope. Your tube should work such that only one rope can be fully extended at a time and pulling any rope end immediately begins pulling in all other rope ends. The ends should all APPEAR connected.

Diagram:

