

15-minute Family STEAM Paper Cup Flyers

Supplies Provided:
2 Disposable Cups
Rubber Bands

Supplies From Home:
Tape

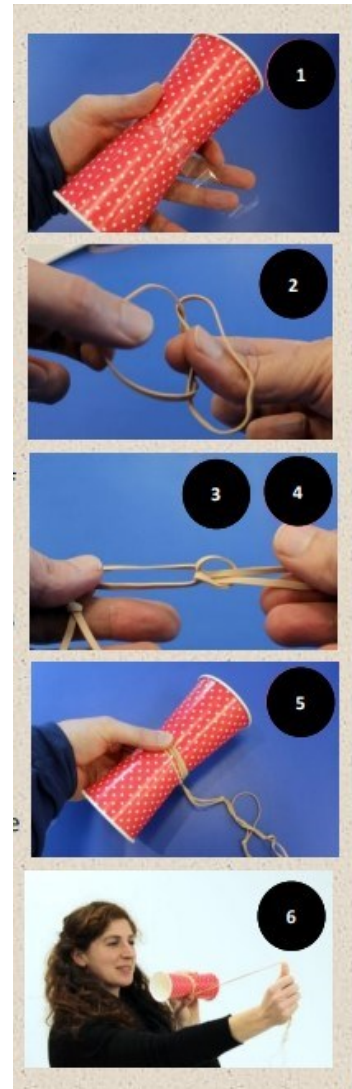
1. Put the cups together so that the bottoms touch and wrap a piece of tape around the join so that they stick together.
2. Hold one rubber band horizontally and hold a second rubber band vertically inside the horizontal rubber band
3. Push one end of the horizontal band through the vertical band. Pull that end with one hand, and the top of the vertical band with the other hand, in opposite direction making a chain.
4. Continue this pattern with the remaining rubber bands to form a chain, keeping the existing chain at the top of the vertical band. This is your launcher.
5. Keeping everything tight, hold the glider with one hand near your body. With your other hand, hold the launcher away from your body. The launcher should be coming out from under the bottom of the glider. If it's coming off the top, turn the glider over.
6. Make sure the launcher is taut, then let go. It might take a few goes, but when you get it right, the glider will fly and spin up into the air!

The Science

The Magnus Effect is a phenomenon associated with a spinning object moving through the air or another fluid. The Magnus effect seen in ball sports. From a bending soccer ball to a back-spinning table tennis shot, the Magnus effect explains why spinning balls curve as they fly through the air. As the cups fly through the air, the rotation means the air flows smoothly over the top of the cups, and eventually curves around and down. In return, the air pushes upwards on the cups, making them fly higher.

Try This

- Try cups of differing sizes.
- Try a different cup material.
- Try rubber bands of different thicknesses or lengths.
- Try using fewer or more rubber bands in your chain.
- Add more cups.



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