

Dynamics and Statics

Elastic catapult

(Poland)

Background

Energy is stored in the elastic band which is pulled around other elastics and through the neck of the bottle. As the elastic band is pulled, muscle energy is stored. When released the elastic band jumps forward propelling the ball outwards.

You will need:

- ✓ Empty plastic bottle
- ✓ Elastic bands
- ✓ Knife or scissors
- ✓ Small ball

Follow these steps:

1. Cut the end off a plastic bottle.
2. Cut 4 notches in the cut end of the plastic bottle.
3. Thread two elastic bands through these notches, making semi-circular shapes.
4. Knot another elastic band around the place in which the elastic bands meet.
5. Push the other end of this elastic band through the neck of the bottle.
6. Pull.

So what happened?

As the elastic band is pulled back through the neck of the bottle and then released, the ball is forced out of the cut end of the bottle.

What next?

Try making different types of elastic catapults using different materials. Does the length of the elastic band or the thickness of the elastic band make any difference to how far the ball flies? Does the stretch of the elastic band make any difference to how far the ball flies?

