

Spool Science

In this experiment we'll be making a terrific toy that's fun to make and an awesome way to learn about forces. I'm guessing you might well have everything you need so let's get cracking.

What do I need:

- A spool
- An elastic band
- Pencil
- Piece of a toothpick, kebab skewer or lollipop stick

How do I do it?

STEP 1 - Thread your elastic band through the middle of your spool.

STEP 2 - Put your piece of kebab stick on one side of your spool to act as a stopper.

STEP 3 - Add some Blu-Tac to secure your kebab stick in place.

STEP 4 - Slide your pencil through the other side of your elastic band and you're ready to go.

STEP 5 - To power your Spool twist your pencil round about 10 or 20 times.

STEP 6 - Place your contraption down on your desk and let it go!

What's going on?

This thing is awesome, right?!? Could you feel that you had to put in a little bit of effort to twist your pencil around?

Every time you twisted it around and put in that little bit of effort you were adding a little bit of energy that was being stored in your elastic band.

That energy is stored as potential energy inside your elastic band. When you let go, this potential energy is transferred into kinetic energy and your spool goes flying across your desk.

More Fun Please - Experiment like a real scientist!

- What's the optimal number of times to twist your pencil round to make your spool go furthest?
- What happens if you try using a thicker elastic band?
- Does using two elastic bands work better or worse?
- How about using a longer or shorter pencil?

