

Praxis “Making Science Fun”

Springs

How is force related to the thickness of an elastic band?

Materials:

- One each of a fat, medium thickness and skinny rubber band.
- 2 pieces of tape.
- 1 board with a screw or nail at one end.
- 1 large spring or screw clamp.
- 1 paper clip.
- 1 length of string.
- 15 weights (or similar sized small stones about 1-2 cm in diameter will work).
- 2 index cards.
- 1 small light weight bucket (made out of a paper cup and string).



Procedure: (Remember to be sure to have your parent’s permission and they have the time to watch and help as you do your experiment.)

1. Use the clamp to fasten the board to the edge of a desk or table with the end that has the screw or nail hanging out over the edge.
2. Tape the two index cards together (end to end) and tape one end to the side edge of the board.
3. Hang the skinny rubber band on the screw and use the paper clip (opened up to form an S shape) to hang the bucket on the other end.
4. Gently add the weights to the bucket until the bottom of the elastic band is even or slightly past the end of the taped together index cards.
5. Record how many weights it took.
6. Repeat this experiment with the fat elastic.
7. Now think! Based on what you have already seen, how many weights will it take to stretch the medium elastic the same length?
8. Do the experiment with the medium elastic.

What's happening?

The amount of matter in the elastic affects the amount of spring tension in the band; the thicker the elastic band, the greater the force that is required to stretch it the same distance.

Extension:

This simple experiment demonstrates the nature of elasticity but also introduces the concept of force as well as the scientific principles of observation, recording and predicting.

This experimental activity was one of many based on our “Building Things: Simple Machines” grade 3 Learning Kit. Our teaching kits are loaned out FREE to provide classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering to speak to a class about any one of our Science learning kits described on our website. We would be most appreciative to hear from you.

Lorne Cooper, Regional Executive Director

PRAXIS, “Making Science Fun”. Contact Praxis at praxis@praxismh.ca, www.praxismh.ca, Tweet or follow us @PraxisMedHat, or friend us at Praxismh on Facebook. Address: c/o 200 7th Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.