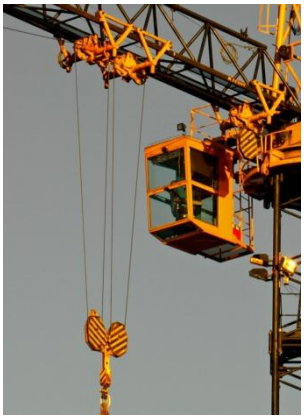
**Praxis "Making Science Fun"**



**Pulleys**

How do pulleys work?

**Materials:**

- Wire clothes hanger.
- Empty spool of thread.
- String.
- 2 paper cups
- 30 pennies.
- Scissors.
- Single hole punch or nail.

**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. Unwrap the wire at the neck of a hanger.
2. Run the clothes hanger wire through the hole of an empty thread spool. Re-attach the wire hanger.
3. Suspend the hanger with the spool from a chair.
4. Cut a piece of string so that it touches the floor, loops over the thread spool and halfway down to the floor again.
5. Take both cups and punch or poke a hole near the rim of a small paper cup and a second hole on the other side.
6. Using both the punched holes, tie a cup to each end of the piece of string.
7. The string with the cups on either end should be looped over the thread spool. One cup on the floor and the other cup off the floor.
8. Place 10 pennies in the cup on the floor. This is the load.
9. Add pennies one at a time to the empty cup until the cup on the floor starts to move. This is the force.
10. How many pennies before the cup moves? How many pennies make the cups balance?

**What's happening?**

Equal weights are needed to balance the cups. The spool and string form a simple machine called a *pulley*. Pulleys change the direction of the force required to move a load and help raise objects such as elevators with less effort.

**Extension:**

This experiment demonstrates the nature of pulleys and the concepts of force and load. Try repeating this experiment again but see if you can add a second pulley with the string going around both. Less pennies are needed to raise the load when you use two pulleys.

This experimental activity was one of many based on our "Building Things: Simple Machines" 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 on Facebook. Address: c/o 200 7th Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.