

3:41 Penny Lever Lab

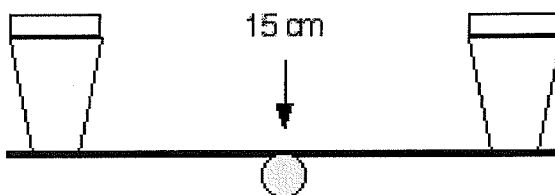
Using the supplies listed below, build a small lever like the one pictured. Use the ruler as a lever, the pencil as a fulcrum, and tape the cups to the ends to hold the pennies. Test the lever with pennies following the instructions given.

Supplies Needed:

- 2 small paper cups
- one ruler (30 cm long)
- one pencil
- some tape
- about 60 pennies

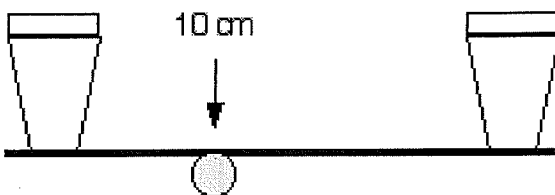
Lever One:

Build Lever One according to the diagram shown. Place the pencil fulcrum at the 15 cm mark on the ruler. Tape the pencil to the ruler if needed to keep it from sliding. Place 30 pennies in the left side cup. See how many pennies need to be added to the right side to get the lever to tip, and lift the left side cup. Record your results on the data table provided.



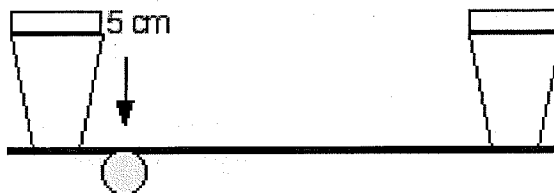
Lever Two:

Build Lever Two in the same way. Place the pencil fulcrum at the 10 cm mark on the ruler. Place 30 pennies in the left side cup. See how many pennies need to be added to the right side to get the lever to tip, and lift the left side cup. Record your results on the data table provided.



Lever Three:

Build Lever Three in the same way. Place the pencil fulcrum at the 5 cm mark on the ruler. Place 30 pennies in the left side cup. See how many pennies need to be added to the right side to get the lever to tip, and lift the left side cup. Record your results on the data table provided.



Name _____ Period _____ Date _____

3:41 Penny Lever Lab

Record the data from the three levers into the table below:

The output distance is the length of the left arm of the lever. The input distance is the length of the right arm of the lever. The output force is the number of pennies lifted, while the input force is the number of pennies needed to tip the lever.

| | Output Distance | Input Distance | Output Force | Input Force |
|-------------|-----------------|----------------|--------------|-------------|
| Lever One | | | | |
| Lever Two | | | | |
| Lever Three | | | | |

Look over the data in the table carefully. What is the relationship between the location of the fulcrum and the input force needed to lift 30 pennies?

What do you think would happen if you were to redo this lab using a meter stick instead of a ruler?
