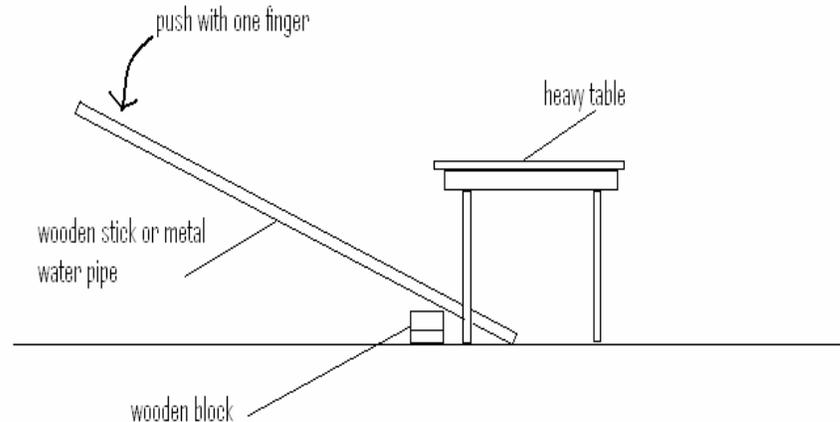


## TILT A HEAVY LOAD WITH ONE FINGER

**A. Question:** *How can we lift heavy loads?*



### **B. Materials Needed:**

1. A long wooden stick (shovel handle) or an iron water pipe (3-4m).
2. Two or three small wooden blocks.
3. A heavy piece of furniture.

### **C: Procedure:**

1. Have students try to lift one side of the heavy piece of furniture to give them an idea of its weight.
2. Place the two or three wooden blocks close to the side of the table to be tilted, place the end on the long stick under the table rung and use the blocks as a fulcrum for the lever.
3. Now push the long end of the stick with one finger down (as a heavy load, a desk or a table, or a chair with a student sitting on it, may be used; make sure that a rung or horizontal bar is present, close to the bottom of the load to be lifted, to hook the lever on).

### **D: Anticipated Results:**

Students should experience that with the lever it is possible to lift the heavy weight.

### **E: Thought Questions for Class Discussion:**

1. What type or class of lever are we dealing with?
2. What functions as the resistance in this case?
3. What were the effort and the fulcrum in this lever?
4. What other examples can you name that are based on this class lever?

### **F: Explanation:**

This **lever of the first class** has the **pivot or fulcrum** in between the **effort** and the **resistance**. The latter one being the heavy load (table, desk, or chair with someone seated on it) and the effort being the finger pushing on the long end of the lever, and the blocks of wood serve as the pivot or fulcrum.

Other examples applying the first class lever are: a pair of pliers, a pair of scissors, wire and chain cutters, most car jacks, teeter, totters, crowbars, etc.