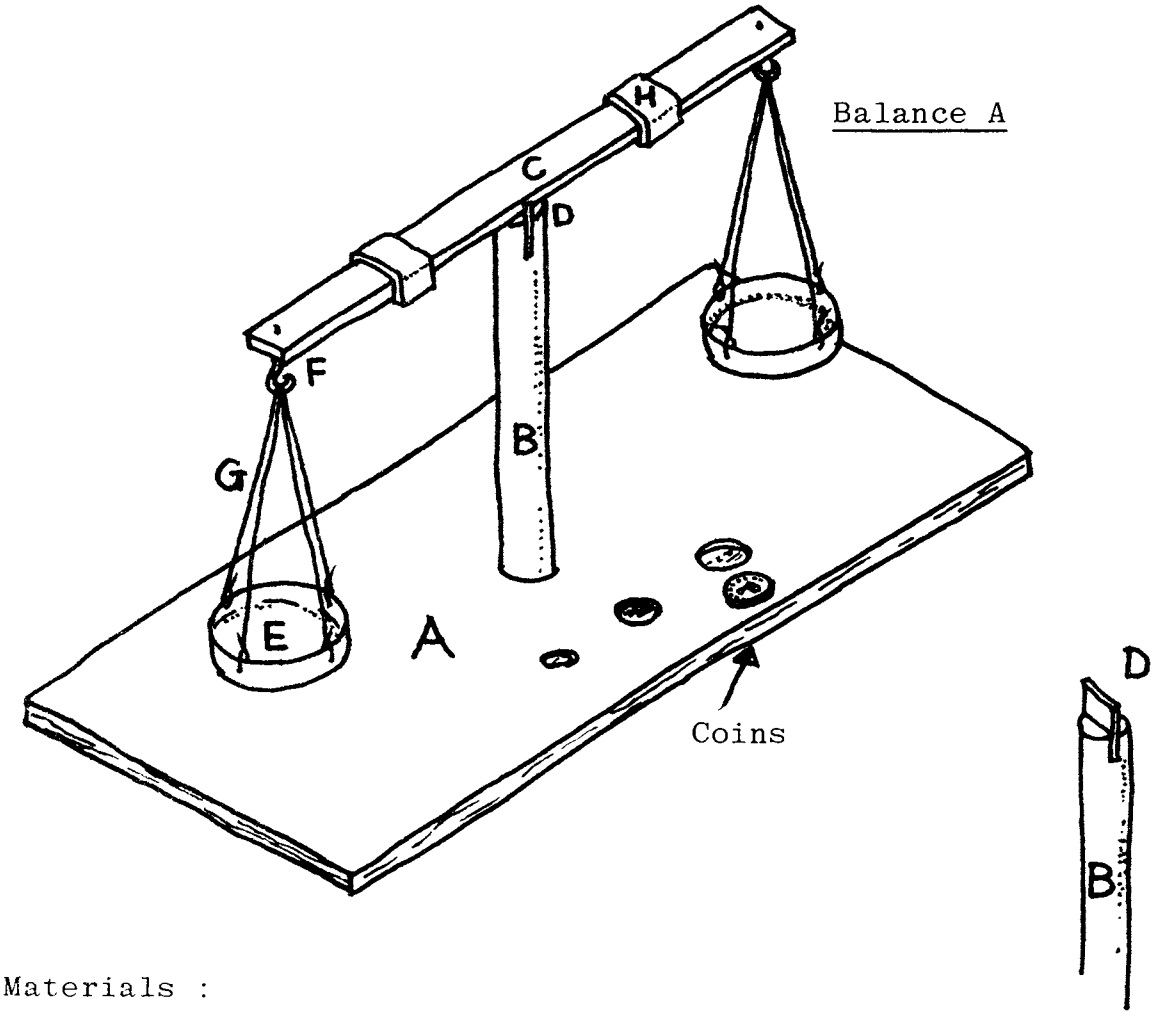
BALANCE

Balance A will give more accurate results than B but is not so strong. Some of each is the answer, as they are both easy to make. If the classroom is open, it will be necessary to fix a wind guard around the balance so that it is protected from the wind. Weights can be coins for which the weight is known. Instead of hanging dishes on the beams, clothes pegs can be used to hold weights and the materials to be weighed.



Balance A

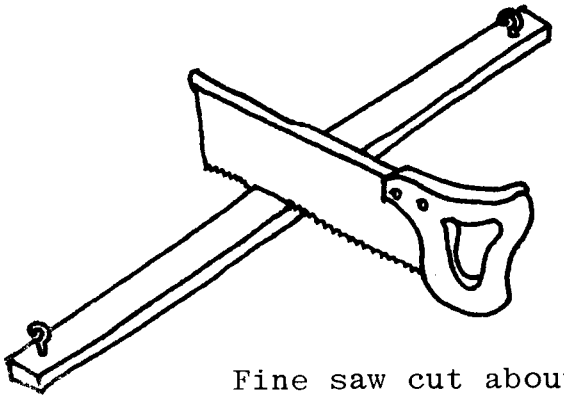
Materials :

A Base of softwood or plywood ½" x 4" x 10"
B Pillar of dowel or broom handle 8" x 1" dia.
C Beam of plywood ¼" x 1" x 8"
D Balance piece of tin cut from strong can
E Dishes made from tin lids
F Cup hooks
G Nylon or string
H Sliding weights cut from can or piece of metal sheet

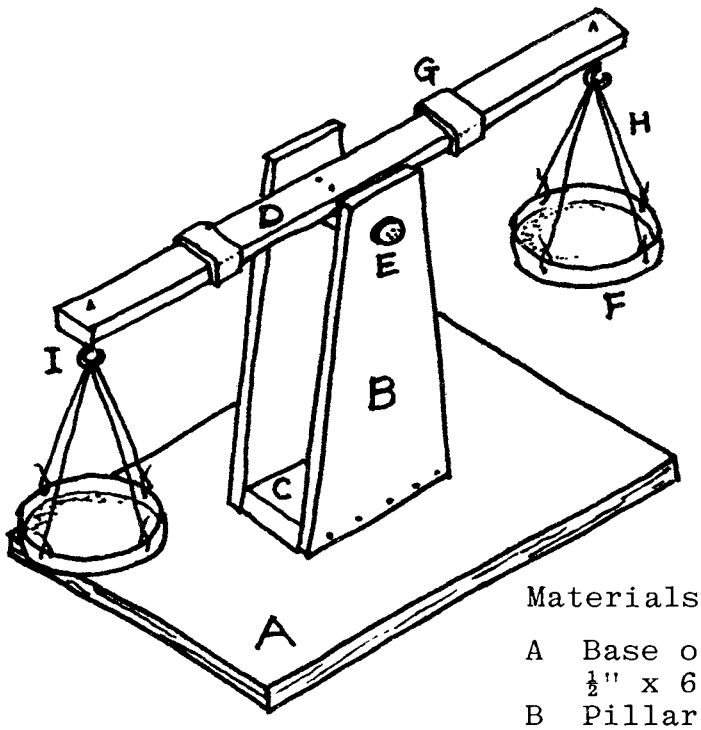
Instructions :

1 Drill hole in centre of base A for pillar B
2 Cut slot in pillar B for balance piece D
3 Cut balance piece D from can
4 Fit balance piece into pillar B. Check that it is square and glue into position
5 Glue pillar B into base A
6 Screw cup hooks into beam C on centre line and 3/8" from ends
7 Drill and fix nylon or string G to dishes E
8 Hang dishes E on beam C
9 Place assembled beam C onto balance piece D and when balancing carefully mark position
10 Make a fine saw cut on the underside of beam C at the marked position
11 Make sliding weights as illustrated
12 Place assembled beam C onto balance piece D, and adjust the balance with sliding weights H

Make the two sliding weights, 1" wide, a good fit on beam



Fine saw cut about 1/16" deep



Balance B

Materials :

A Base of softwood or plywood ½" x 6" x 8"
B Pillar in two pieces in softwood or plywood 5/16" x 2½" x 6"
C Pillar base softwood ½" x 1½" x 2
D Beam of plywood ¾" x 1" x 8"
E Beam of rod dowel ½" dia. x 2¼"
F Dishes made of tin lids
G Sliding weights, two pieces cut from can 1" x 2"
H Nylon or string
I Two cup hooks

Instructions :

1 Fix pillar base E to centre of base A
2 File a flat on beam rod dowel E for beam D
3 Fix beam rod dowel to the exact centre of beam D and screw in cup hooks I
4 Temporarily nail pillars B together and drill hole for an easy fit for beam rod dowel E
5 Assemble pillars B and assembled beam rod dowel and beam D and fix to pillar base C
6 Make sliding weights G and fit to beam D so that they are a tight sliding fit
7 Make up dishes F and hang on hooks I