



Conclusions:

Experiment 2

Date:

Aim: To investigate the influence of intermolecular forces on surface tension.

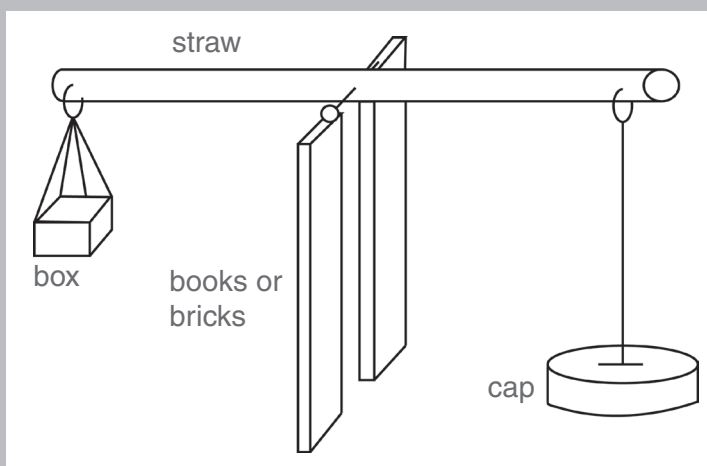
Hypothesis:

Variables:

Independent variable (Which is changed.)	Dependent variable (Which is measured.)	Controlled variable(s) (Which remain(s) the same.)

Apparatus:

- Homemade balance beam
- Straw
- Pin
- Two identical hardcover books
- Foil or mass pieces
- Match box
- Thread
- Paper clip
- Modelling clay or *Prestik*
- Water
- Oil
- Nail polish remover
- Methylated spirits
- Four identical plastic caps from aerosol cans or petri dishes



Method:

1. Build the home-made balance beam as shown in the sketch. The bar should rotate freely about the turning point. The pan can be a simple box (matchbox) or pan of aluminium foil.



2. Fill each of the plastic caps with a different liquid.
3. Hang the paper clip on a thread at the other end of the balance.
4. Balance the bar with a small piece of modelling clay so it will hang exactly horizontally.
5. Lower the paper clip into the first liquid so it is under the surface. (The bar should still be horizontal.)
6. Add a little mass to the pan until the paper clip is lifted out of the water. (Make the same size balls of foil and use them to increase the mass in the pan.)
7. Repeat with all the liquids.
8. Write down your observations.
9. Draw conclusions.

Observations:

	Water	Oil	Nail polish remover	Methylated spirits
Number of small foil balls needed to lift paper clip.				

Results:

Answer the following questions.

1. From which liquid is the paper clip lifted most easily (with the smallest number of foil balls)?

2. From which liquid is the paper clip hardest to lift (with most foil balls)?

3. What causes the paper clip to be lifted more difficultly from the liquid?

4. Explain why the force (number of foil balls) differs with which the paper clip is lifted in various liquids.

Conclusions:
