

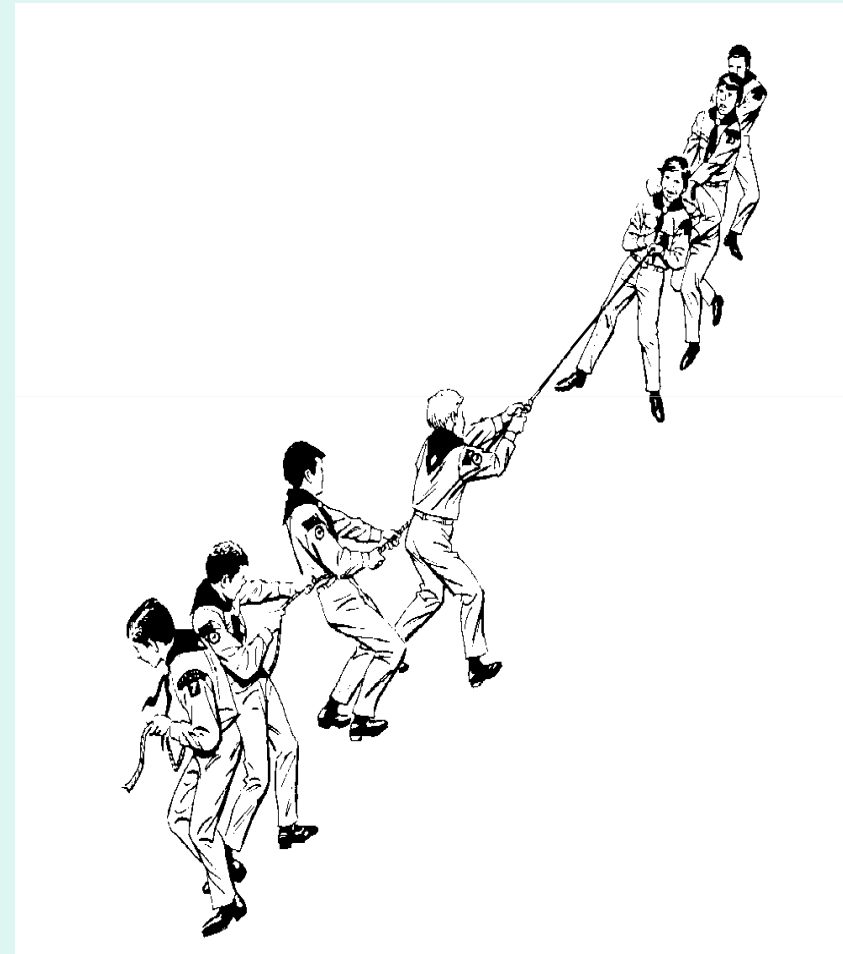
# Force Diagrams

# Forces

- We know that a force can be a **push** or a **pull** acting on an object
- There is a good chance that 2 forces can be acting on an object at any one time
- Examples:
  - Lifting something
  - Dragging something
  - Floating Globe

# Balanced Forces

- If two **equal forces** are applied to an object in opposite directions, the object does not move / or moves as a constant speed. This is called **balanced forces**.



# Unbalanced forces

- If two **unequal forces** are applied to an object in opposite directions, the object does move. This is called **unbalanced forces**.
- *And someone will win!!*

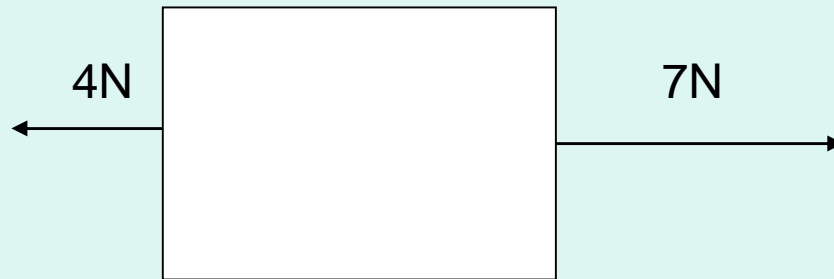


# Unbalanced Forces

- If the forces acting on an object are not balanced then the object will either:
  - Speed up
  - Slow down
  - Change direction
  - Change its shape

**Fill in the Gaps sheet**

# We can use force diagrams to show this:



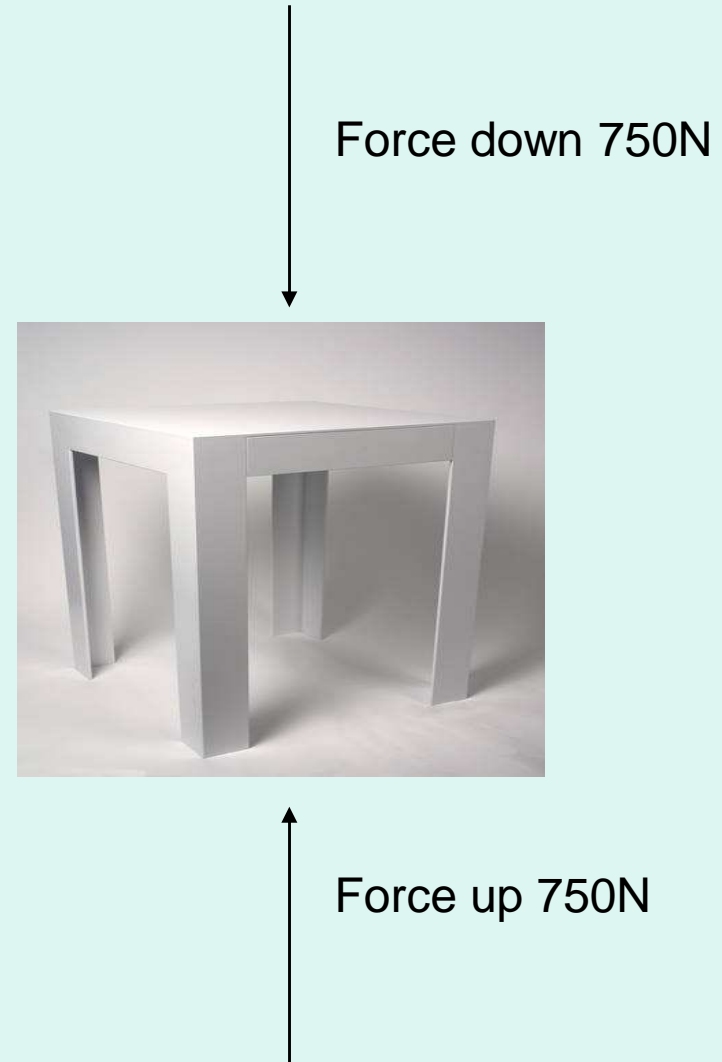
The block has 2 opposing forces being applied to it:  
7N to the right and 4N to the left. They are Unbalanced Forces.

To Calculate the **Resultant Force (Fr)**,  
subtract one from the other:  $7\text{N} - 4\text{N} = 3\text{N to the right}$



# Problem:

- A man of mass 75kg has a weight of 750N. This 750N will act downward on the table and the table will exert a 750N force upwards on the man. The forces are balanced.
- What would happen if the upward force were less than 750N?



# Your go:

- Collect Sheet: Drawing Force diagrams, fill in sheet finding **Fr**
- Do Q6 p103 of text book
- **Lets have a tug of war!!**



# More on Balanced and Unbalanced Forces:

- Collect and complete the following worksheets:
  - More on Balanced and Unbalanced forces
  - Floating and Sinking (Read p101)
  - Parachutes (Read p101)
- Extension Work:
  - Text book: Starting Science for Scotland Book 2, Read p22, Ans Q1-4
- [Base Jumping](#)

# Moments

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