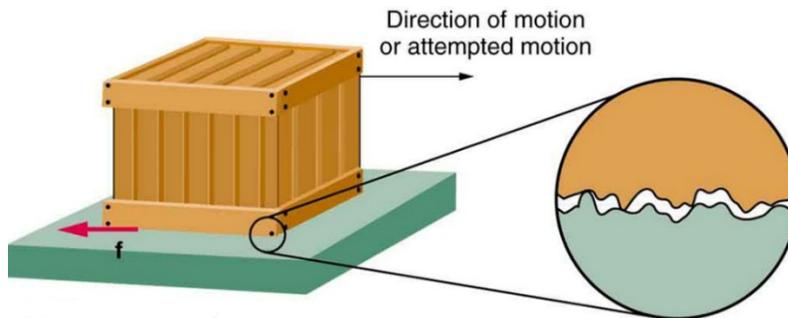


When two surfaces move past one another we get friction.

Friction is greater if:

- Surfaces are rough.
- Objects are heavy.



Contact Force Keywords

Equilibrium: State of an object when opposing forces are balanced.

Deformation: Changing shape due to a force.

Linear relationship: When two variables are graphed and show a straight line which goes through the origin, and they can be called directly proportional.

Newton: Unit for measuring forces (N).

Resultant force: Single force which can replace all the forces acting on an object and have the same effect.

Friction: Force opposing motion which is caused by the interaction of surfaces moving over one another. It is called 'drag' if one is a fluid.

Tension: Force extending or pulling apart.

Compression: Force squashing or pushing together.

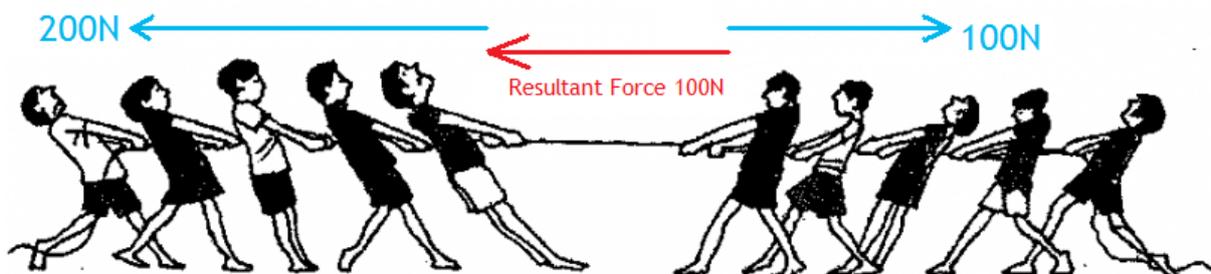
Contact force: One that acts by direct contact.

If forces are **balanced**:

- The object stays still **or** continues at a steady speed.

If forces are **unbalanced**:

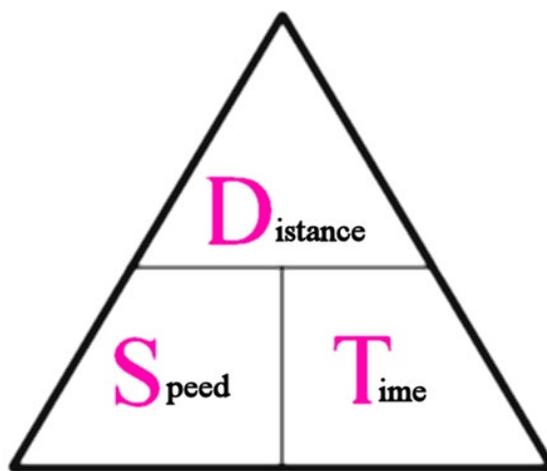
- The object accelerates **or** decelerates.



$$\text{Pressure} = \text{Force} \div \text{Area}$$

Speed = Distance ÷ Time

Speed Keywords
Speed: How much distance is covered in how much time.
Average speed: The overall distance travelled divided by overall time for a journey.
Relative motion: Different observers judge speeds differently if they are in motion too, so an object's speed is relative to the observer's speed.
Acceleration: How quickly speed increases or decreases.



Subject	Forces
What do we call the force between two rubbing surfaces?	Friction
How can we make friction bigger?	Rougher surfaces and heavier objects.
What meter would you use to measure the force of friction?	Newtonmeter
Balanced or unbalanced? 400N → ←300N	Unbalanced (100N to right)
Balanced or unbalanced? 250N → ←250N	Balanced
Balanced or unbalanced? 5N and 12N → ←19N	Unbalanced (2N to left)
Force ÷ Area =	Pressure
Calculate the pressure. A 250N force over an area of 50cm ² .	5N/cm ²
Calculate the pressure. A 250N force over an area of 0.005m ² .	50,000N/m ² (50,000Pa)
Speed =	Distance ÷ Time
We travel 100m in 5s. What is our average speed?	100m ÷ 5s = 20m/s
We travel for 50s and go 25m. What is our average speed?	25m ÷ 50s = 0.5m/s
Distance =	Speed x Time
We travel at 15m/s for 6s. How far do we go?	15m/s x 6s = 90m
We travel for 2s at 330m/s. How far do we go?	330m/s x 2s = 660m/s
Time =	Distance ÷ Speed
We travel at 60m/s for 240m. How long does it take?	240m ÷ 60m/s = 4s
We travel 0.5m at 0.05m/s. How long does it take?	0.5m ÷ 0.05m/s = 10s