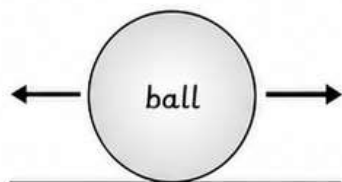


Balanced and unbalanced forces

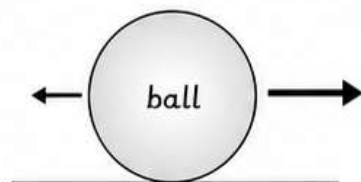
When forces are **balanced** (equal), an object stays still or moves at a steady speed. When forces are **unbalanced** (unequal), they can change an object's speed, direction, shape, or make it start or stop moving.

Balanced forces



Forces are equal.
The object stays still or moves at a steady speed.

Unbalanced forces



Forces are unequal.
The object can change speed, direction, shape, or start or stop moving.

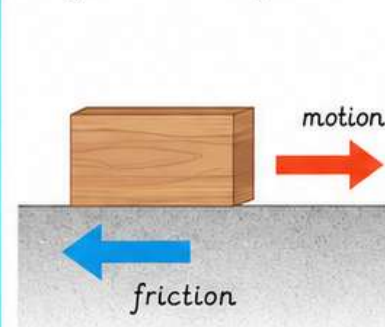
Gravity

Gravity is a pulling force between objects with mass. The bigger the mass and the closer the objects are, the stronger the gravitational pull.



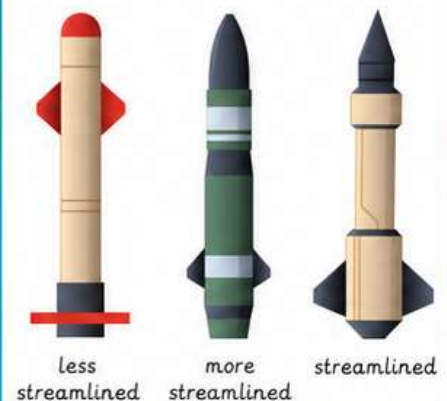
Friction

Friction is a contact force between surfaces that opposes motion and slows things down. Rougher surfaces and greater weight increase friction.



Streamlining

Streamlining means shaping an object so it moves more easily through air or water. Smooth, sleek shapes reduce resistance.



Air resistance

Air resistance is a type of friction that opposes an object moving through air. A larger surface area and greater speed increase air resistance.



Water resistance

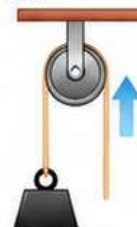
Water resistance is a type of friction that opposes an object moving through water. A larger surface area and greater speed increase water resistance.



Simple machines

Pulley

A grooved wheel for a rope. It makes lifting easier by changing the direction of force.



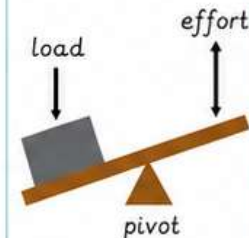
Gear

A toothed wheel that meshes with another gear to change speed or direction of movement.



Lever

A stiff bar that pivots to help lift or move a load more easily.



Sir Isaac Newton

Sir Isaac Newton (1643-1727) was an English scientist who described the laws of gravity and motion.

