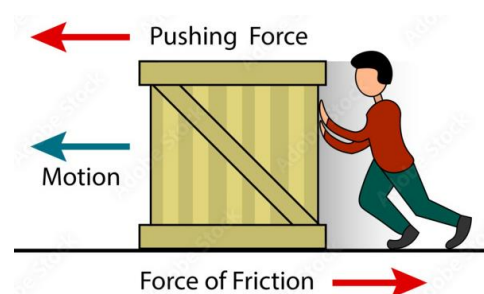


What I already know:

- Objects move differently on rough and smooth surfaces.
- Objects resist movement more on rough surfaces because there is higher friction as the object moves.
- A force can be thought of as a push or a pull.
- Magnets have two poles (north and south).
- Magnets attract or repel each other and attract some materials and not others.
- Some forces need contact between two objects, but magnetic forces can act at a distance.
- Some everyday materials are attracted to a magnet and identify some magnetic materials.

What I need to know:

- Unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- Unsupported objects are pulled towards the Earth by the force of gravity.
- A force is measured in a unit called Newtons.
- Isaac Newton built on the work of Galileo to develop the theory of gravity
- The amount of matter in an object is its mass.
- Gravity is a force that acts between all objects.
- Gravity acts stronger when objects have more mass and are close together.
- Forces make things move faster or slower.
- Friction is a force between two surfaces that are sliding, or trying to slide, across each other. It always slows an object down.
- Air resistance is a type of friction between air and another material. Air resistance acts when something tries to move quickly through air.
- Water resistance is a type of friction between water and another material (same as air resistance).
- To know that gears, levers and pulleys are simple machines that are used to allow a smaller force to have a greater effect.



Vocabulary Focus

Tier 1:

Push - to use pressure against in order to move.

Pull - to take hold of (something) and use force to bring it nearer to oneself.

Tier 2:

Gravity - Pulls everything downwards towards the earth.

Friction - a force between two surfaces that are sliding, or trying to slide, across each other. It always slows an object down

Force - a push or a pull on an object which speeds it up, slows it down or changes its direction

Unsupported - When an object is not held up by anything.

Mass - A measurement of how much matter is in an object.

Surface - Is the top or outside layer of something.

Variables - factors that can be changed in an investigation.

Prediction - a statement that something might happen or is expected to happen.

Hypothesis - Prediction or educated guess that can be tested and can be used to guide further study.

Streamlined - A surface designed to offer minimum resistance when moving through air or water.

Lever - Levers have a long arm and a fulcrum, which is where the arm pivots (a turning point). The object you are lifting is called the load, and the force you apply to that load through the arm to make the object move is called the effort.

Lever is the name of the structure that connects these other three parts.

Gear - special wheel that has parts called teeth around its outer edge (circumference)

These teeth interlock with the teeth of another gear, belt or chain.

When two or more gears are connected, they transfer motion and power from one gear to another.

Pulley - a type of wheel that has an inner groove in its circumference.

When a rope, cable or belt runs along the groove, objects can be moved and lifted with far less effort.

Mechanism - devices that we create to help us. Most mechanisms are designed to change smaller input forces and motion into greater output force and motion

Load - The object you are lifting

Effort - the force you apply to the load through the arm to make the object move

Tier 3:

Contact force – when force only take place if two objects are touching

Noncontact force – a force that acts even if two objects are not touching

Air resistance - is a type of friction between air and another material. Air resistance acts when something tries to move quickly through air.

Water resistance - a type of friction between water and another material

Upthrust – a force that pushes objects upwards on objects that are in water.

Fulcrum - the point of support on which a lever turns.

Circumference - the line that forms the outside edge of a circle