



Fair test



research



observation

Year 5  
Autumn 1

# FORCES

## How do machines work?



Pattern seeking



identify/classify



problem solving

Lesson 1 Understand gravity

Is gravity a contact or non contact force?



Weight, mass, astronomy, gravity, Sir Isaac Newton

Lesson 2 examine the connection between air resistance and parachutes.

What is the purpose of a parachute?



Opposing, air resistance, parachute, streamlined

Lesson 3 explore factors that effect water resistance

Explain the similarities and differences between air and water resistance.



streamlined, upthrust, buoyant, water resistance, sink



### Mechanisms



**Pulleys**  
A pulley is a wheel over which a belt, rope, or chain is pulled to lift or lower a heavy object.



**Levers**  
Levers are a bar that rotates around a point. They make it easier to lift a heavy load.



**Gears/Cogs**  
Gears are toothed wheels that mesh together, they rotate in opposite directions.

### Mass and Weight



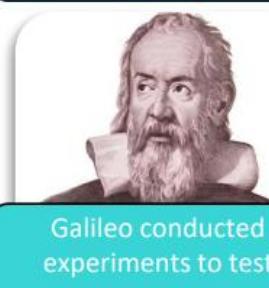
The mass of an item can be measured in **Grams/ Kilograms**.



Weight is how much force is needed to pull an object and is measured in **Newtons**.



Sir Isaac Newton developed his theory of gravity.



Galileo conducted experiments to test mass.

Careers connected this topic aerodynamics engineer, forensic investigator

Lesson 4 investigate friction on different surfaces

What is the difference between friction and gravity?



Newton meter, resistance, lubricant, Newton, friction

Lesson 5 investigate levers and pulleys

Can you give examples of levers you use in your life?

Load, pulley, lever, pivot, fulcrum

Lesson 6 investigate gears

Can you explain how a gear converts energy?

Gear, mesh, mechanism, rack and pinion, bevel gear

Lesson 7

Can you explain all you have learned from this topic?

Vocab-all words from previous lessons.

