



## Knowledge Organiser: Forces

Careers connected to Forces:  
Aerodynamics engineer, forensic  
investigator



### Lesson Sequence



1. Explore gravity and the life and work of Isaac Newton



2. Examine the connection between air resistance and parachutes



3. Explore factors which affect an object's ability to resist water



4. Investigate the effects of friction on different surfaces

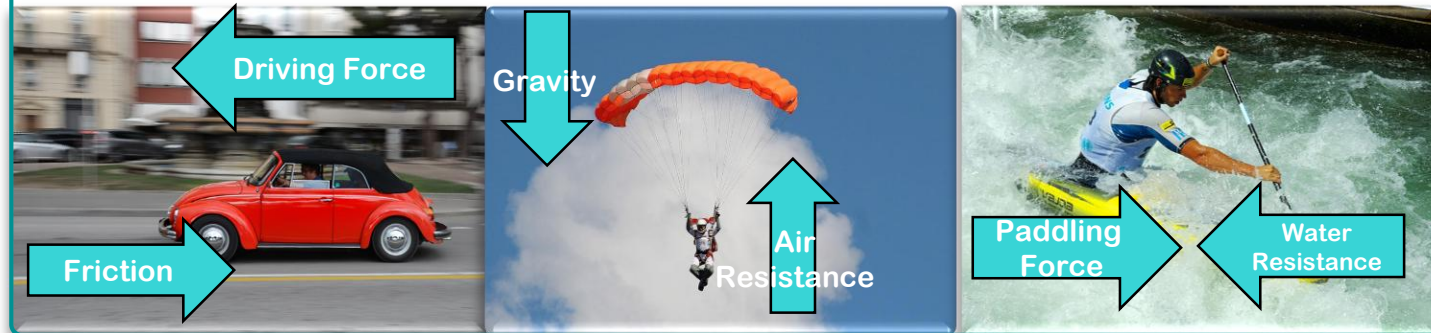


5. Investigate mechanism – levers and pulleys



6. Investigate mechanisms - gears

### Forces in Action

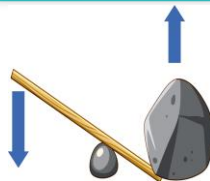


### Mechanisms



#### 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

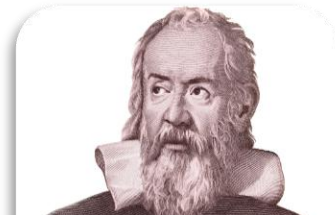


The mass of an item can be measured in **Grams/ Kilograms**.

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.



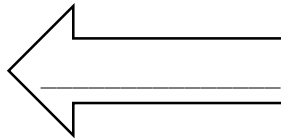
# Knowledge Organiser: Year 5 Forces Before & After Test



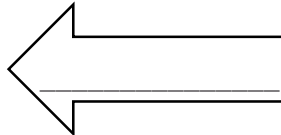
Record the resisting force for each of the following situations highlighted below.



Driving Force



Gravity



Paddling Force



When you measure the mass of something you can use a weighing scale. When measuring the force applied you can use a force meter.

Which units of measurement do you use when using this equipment?



\_\_\_\_\_

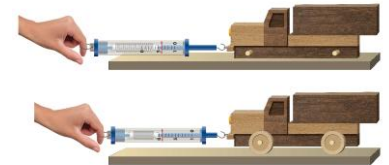


\_\_\_\_\_

Charlotte wants to carry out a fair test to investigate which surface to place on a floor to prevent people from slipping. Name 2 variables she must keep the same to make it a fair test:

1. \_\_\_\_\_

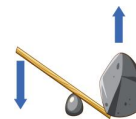
2. \_\_\_\_\_



What is the variable that she must change?

\_\_\_\_\_

Draw lines to match the mechanisms to their definitions.



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

A bar that rotates around a point. They make it easier to lift a heavy load.

Wheels that mesh together, they rotate in opposite directions.