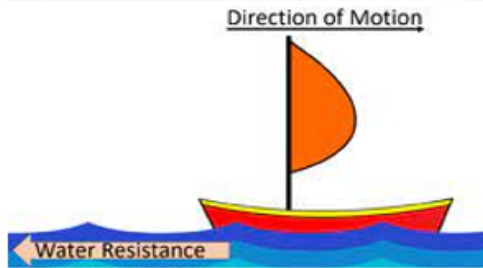


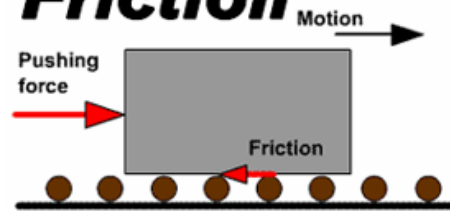
# Year 5: Forces Knowledge Mat

## Sticky Knowledge

- **Gravity** is an invisible force that pulls everything towards the centre of Earth. It stops us from falling off!
- **Air resistance** is the frictional force air uses against a moving object. As an object moves, air resistance slows it down.
- **Water resistance** is the same as air resistance, but in water!
- **Friction** is the resistance to motion when one object rubs against another. The force of friction opposes the motion of an object, causing moving objects to lose energy and slow down.



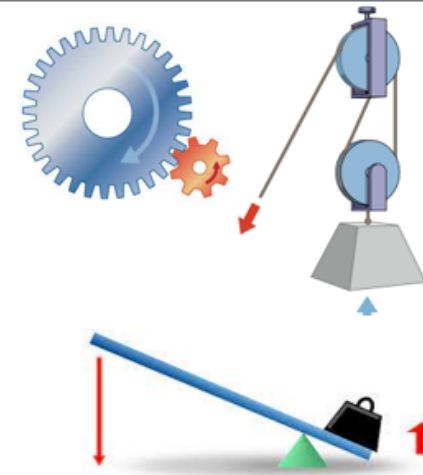
## Friction



During his lifetime, Newton developed the theory of gravity and made breakthroughs in the area of optics, such as the reflecting telescope.

## Sticky Knowledge

- A **lever** is a simple mechanism that works by reducing the amount of force needed to move an object or lift a load. It has a long rigid body with a fulcrum
- A **pulley** is a simple machine made of a wheel on a fixed axle, with a groove along the edges to guide a rope or cable. Pulleys are used to reduce the effort needed to lift heavy objects.
- **Gears** are toothed wheels that lock together and turn one another. The wheels are usually different sizes so that one gear speeds up to slow down the next gear. Gears are also used to change the direction of movement.



## Key Vocabulary

gravity  
 air resistance  
 water resistance  
 mechanisms  
 levers  
 pulleys  
 gears  
 parachute  
 Newton