Year 5 Science Physics: Forces

What we already know

In year 3 we looked at the concept of forces and explored friction. We looked at the concept that friction is a contact force between two surfaces that are trying to move across each other.

Vocabulary

Tier 1	Tier 2	Tier 3
Friction, Speed, Distance, Travel, Opposing, Balanced, Air resistance, Greater, Smaller, Increased, Decreased, Push, gravity, water resistance, movement, upthrust	Lubricant, Stationary, Invisible, Contactless, Represented, Directional, Increased, Reduced, Opposing	Exerted, Streamlined, Surface area

Friction

- Friction will slow down the speed of a travelling object
- Changing the amount of friction applied to an object will vary the speed of travel
- A force can change the speed or shape of an object
- An object will stop moving when the forces are balanced

Air Resistance

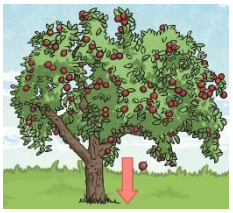
- Air slows down the speed of a travelling object
- The amount of air resistance depends on the shape of an object
- Air resistance is a push force
- Some objects are designed to reduce or increase air resistance

Water Resistance

- Water resistance is the movement through the water
- Water pushes against the force and makes it harder to move through
- The shape of the object moving through water effects the speed of the movement

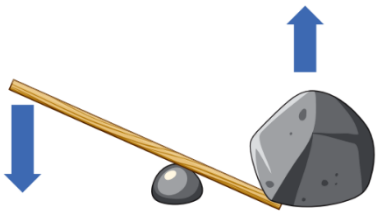
Gravity

- The force of gravity is always present
- Gravity is a non-contact force (two surfaces do not have to touch for it to act)
- Heavier objects do not fall to the ground quicker than lighter objects.
- Galileo Galilei and Isaac Newton helped to develop the theory of gravitation



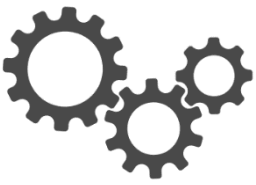
Use small forces for greater effects- levers, pulleys and gears

- A lever is a machine that allows movement of heavy objects



- Pulleys use a rope or cable through a wheel to allow lifting of heavy objects

- Gears are wheels with teeth that allow a small force to produce a larger force with greater speed



What next?

In Y3 we will look at how animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.