

1. Forces

- Forces are pushes or pulls
- Force is measured in Newtons (N)
- Friction, air resistance and water resistance are contact forces
- We can show the **forces** acting on an object using **force arrows**.
- These arrows show the **size (magnitude)** and **direction** of the force.



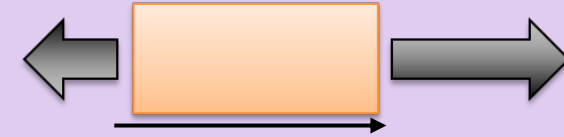
*Forces
Year 7*

3. Friction

- Friction is a contact force
- Friction can be reduced by lubrication
- Air resistance and water resistance can be reduced by streamlining
- Drag/frictional forces slow down falling or accelerating objects

2. Balanced and unbalanced forces

- If the forces acting on an object are unbalanced the object will either speed up (acceleration), slow down (deceleration) or change direction.
- Unbalanced forces cause change.



- Forces exist when objects interact

4. Investigation

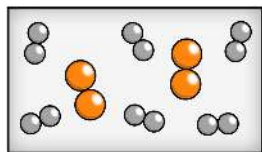
Why do F1 cars have different tyres?

- Using the knowledge you have gained throughout the topic carry out an investigation using the equipment provided to explain:
 - different forces that could impact a car while driving round a race course
 - how forces can affect the acceleration and movement of a car and
 - why we may want to reduce friction acting in some situations



1. Atoms

- ❑ All materials are made up of one or more element.
- ❑ The atom is the smallest part of an element that can exist
- ❑ The atoms of one element are different from the atoms of all other elements



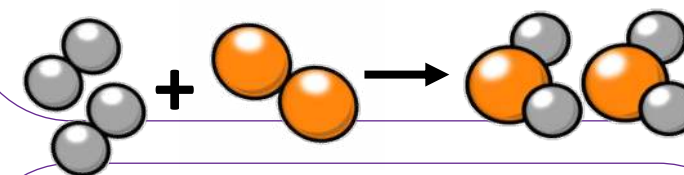
2. Elements

- ❑ Elements are substances that cannot be broken down
- ❑ There are 92 elements that exist naturally
- ❑ The periodic table lists these elements
- ❑ Every element has a symbol

	1	2							
Li	Be								
Na	Mg								
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Cobalt	Ni
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt
Fr	Ra	Ac							

3. Compounds

- ❑ A compound is a substance made up of two or more elements strongly and chemically joined together
- ❑ The properties of a compound are different to the properties of the individual elements it is made from
- ❑ A chemical formula shows how many atoms of each element the compound is made from
- ❑ A formula tells you how many atoms of each element are in the compound or molecule



Elements

Compounds

Atoms, Elements and Compounds Year 7

4. Mixtures

- ❑ A mixture is made up of substances that are not chemically joined
- ❑ In a mixture the substances keep their own properties.

5. Pure substances

- ❑ A pure substance is one that contains only the substance itself, nothing else.
- ❑ Distilled water is an example of a pure substance as it contains only water molecules

6. Investigation

Element, compound or Mixture?

Using the knowledge you have gained throughout the topic carry out an investigation using the equipment provided to explain if the substances you have are elements, compounds or mixtures

1. Body structure

- The skeleton is made up of bones. It has four important functions; support, protect, movement and production of blood cells
- Joints occur when 2 or more bones join together
- Red and white blood cells are made in the bone marrow
- Cartilage in joints prevents bones rubbing together

3. Digestion

- The organs of the digestive system include the mouth, oesophagus, stomach, small intestine and large intestine.
- During digestion food is broken down through chemical and physical digestion
- The structures in the digestive system are adapted to allow them to carry out their function



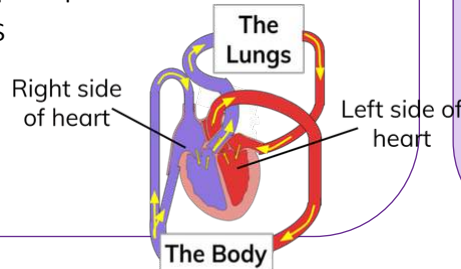
5. Investigation

Why do athletes train?

Using the knowledge you have gained throughout the topic carry out an investigation using the equipment provided to explain how and why an athlete trains for an event

2. Circulatory system

- The circulatory system is made up of the heart, arteries, veins, capillaries and blood.
- The heart is a pump that ensures blood travels around the body carrying oxygen to all tissues
- The heart will also pump blood without oxygen to the lungs



The Body Year 7

4. Respiratory system

- In gas exchange, oxygen and carbon dioxide move between the alveoli and the blood
- Oxygen enters the body through the nose and mouth, it travels down the windpipe, through a bronchus then a bronchiole into and alveolus and then diffuses into the blood
- Breathing occurs through the action of muscles in the ribcage and diaphragm
- Changes in volume and pressure inside the chest move gases into and out of the lungs

