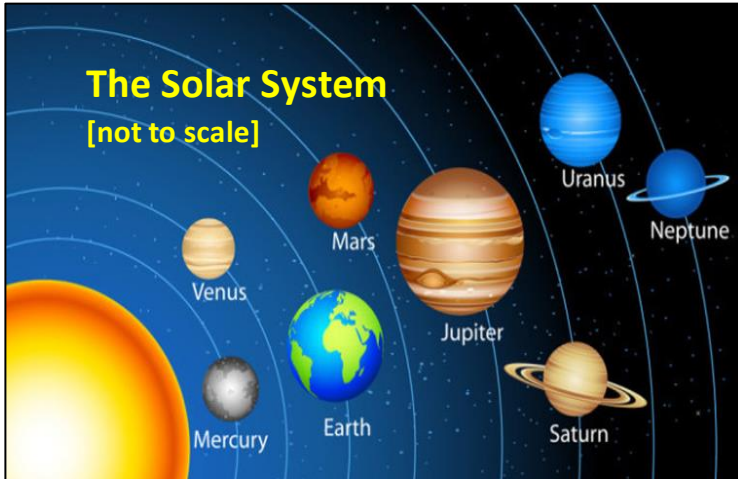




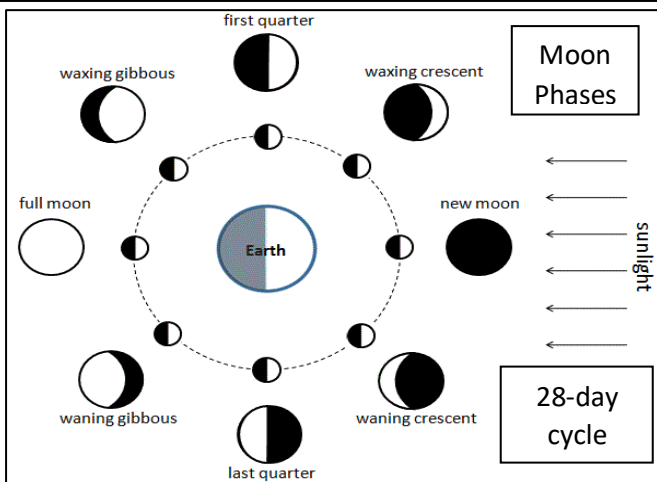
**SCIENCE  
SUMMER 2  
KNOWLEDGE  
ORGANISERS**

# Y5 SCIENCE KNOWLEDGE ORGANISER

## UNIT 5 [SUMMER]

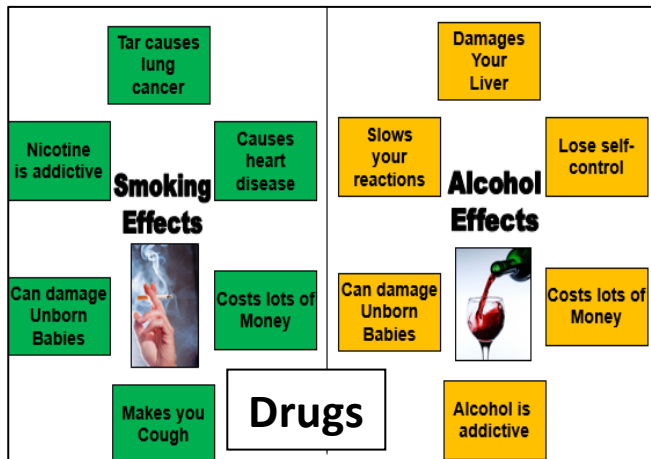
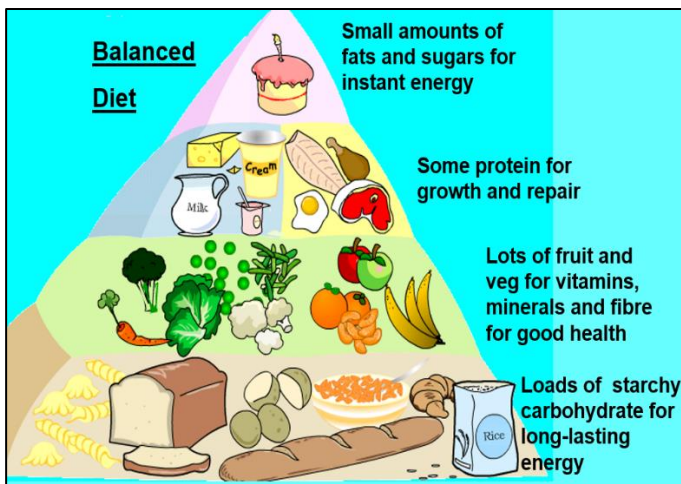


Key Vocabulary	Definition
Solar System	The group of planets that orbit our Sun: Mercury, Venus, Earth and Mars are all rocky planets, Jupiter, Saturn, Uranus and Neptune are all gas giants. Pluto is too small to be classed as a planet.
Eclipse	Where the light from the Sun is blocked out by the moon, when the two bodies exactly line up. These are rare.
Heliocentric	This means 'sun in the centre'. This idea was developed by Galileo, then Copernicus when they observed space with telescopes. For many years, Earth was said to be the centre of space.



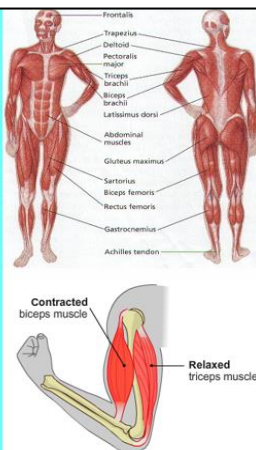
- Exercise regularly
  - 30 min a day
- Eat a balanced diet
  - Look at the food pyramid
  - 7-a-day
- Eat the right amount of food
  - Affects your weight
- Don't take harmful drugs
  - Damages your organs
- Get enough sleep
  - 8 hours per day
- Be hygienic
  - Wash and clean teeth
- Drink lots of water
  - 1.5 litres every day

### How do we maintain a healthy lifestyle?



### Muscles!

- They can only pull your bones in one direction
  - This is called contracting.
- They can't push, but just relax when not pulling
- Muscles often work in pairs that pull in opposite directions
  - These are called antagonistic [means 'against']
- There are some muscles you don't control like in your stomach and heart



### What does the skeleton do?

- It protects your important organs
- It allows you to move [along with muscles]
- It stop your body from collapsing



### How can we look after our skeleton?



# Y6 SCIENCE KNOWLEDGE ORGANISER

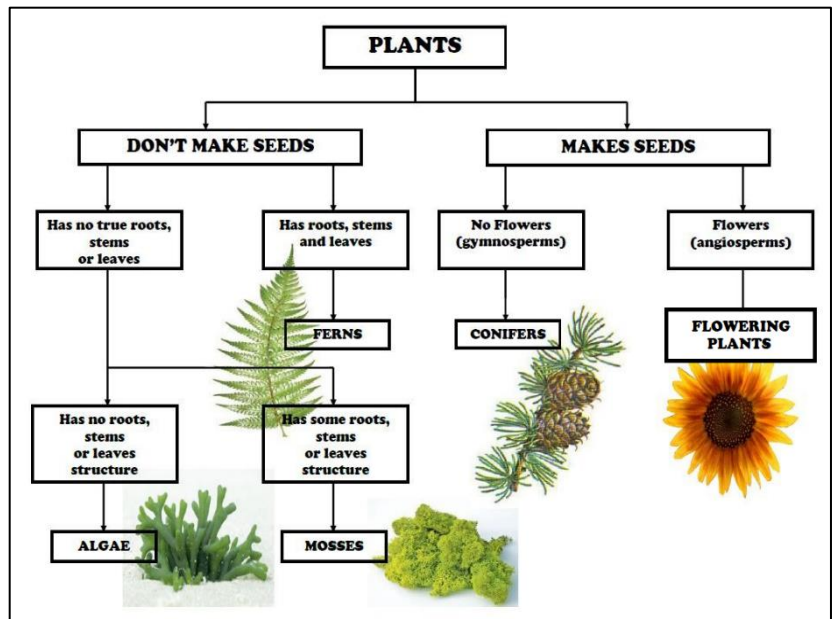
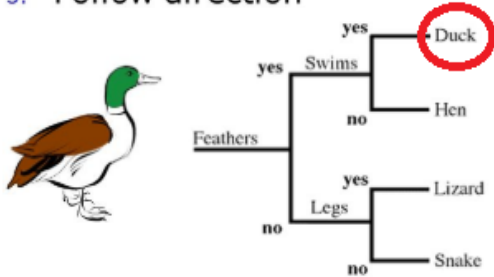
## TOPIC: Unit 5 [SUMMER]



Key Vocabulary	Definition
Circuit	A complete loop that electricity can flow around. Any breaks in the circuit will stop the electricity from flowing.
Voltage	The amount of electrical energy. It gets used up in a circuit, which is why batteries go flat. More cells mean more voltage! Bigger cells mean usually have a higher voltage.
Classify	Put things into groups based on similarities and differences
Key	A scientific device that use differences to identify and separate objects or living things
Variation	The differences between living things
Micro-organism [microbes]	Very small living things. Types are Fungi, Viruses and Bacteria. Microbes grow best when the conditions are warm and moist.
Hygiene	Methods used to stop the spread of microbes

### HOW TO USE A KEY

- Look at the statement / question
- Select either (a) or (b)
  - Which describes the organism?
- Follow direction



Circuits can be really useful!

**Simple traffic lights**

Each bulb needs to be **turned on and off** separately.

To do this we have **three separate parts** in our circuit where **each bulb** has its **own switch** to control it.

## Micro-organism

[Very Small]      [Living Thing]

Harmful Micro-organisms	Useful Micro-organisms
Illnesses	Food Production
Rotting food	- Cheese, Bread, Yoghurt
Mould	Alcohol Production
Infection and Spots	- Beer and Wine
Plaque - Tooth Decay	Compost & Decay
	Cleaning Sewage
	Antibiotics

Bulbs are **dimmer**

Bulbs are **brighter**

The **higher** the number of **cells** in a circuit, the **brighter** the bulbs are

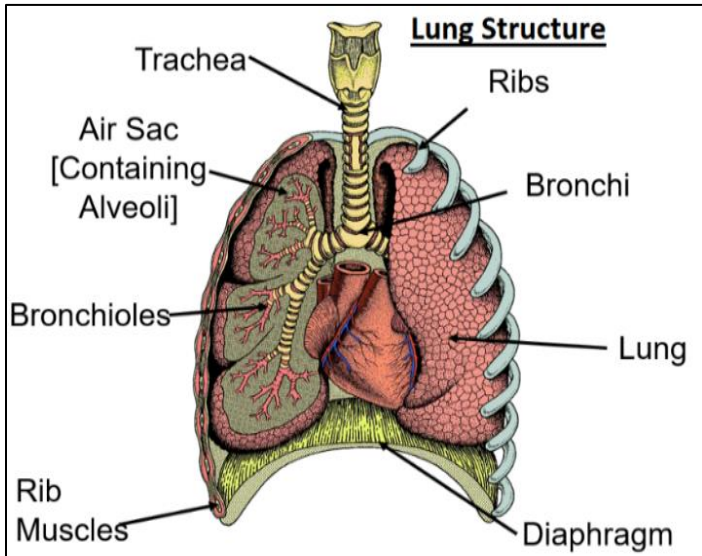
Bulb is **brighter**

Bulbs are **dimmer**

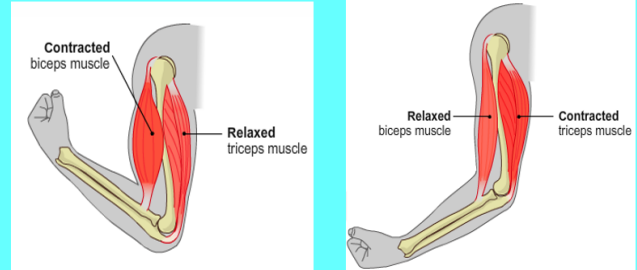
The **higher** the number of **bulbs** in a circuit, the **dimmer** the bulbs are

# Y7 SCIENCE KNOWLEDGE ORGANISER

## TOPIC: UNIT 5 [Summer]

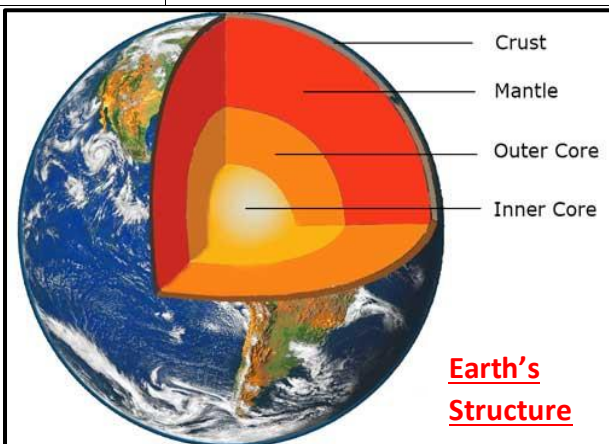


- Muscles have to work in pairs
- This is because they can only pull [contract], not push
- Each of the two muscles pulls in opposite directions
- As the muscles go against each other, they are called **antagonistic muscles**



- Tendons connect muscles to the bones they move at joints

Key Vocabulary	Definition
<b>Heat</b>	A measurement of how much kinetic energy the particles of a material have. Measured in Joules [J]
<b>Temperature</b>	A measurement of how hot or cold something is. Measured in Degrees Celsius [°C].
<b>Insulation</b>	Materials such as wool and rubber that limit the transfer of heat. These materials often trap air and have spaced-out particles.
<b>Expansion</b>	The increase of an object's size due to increased particles movement [heat], pushing particles further apart. Opposite to <b>contraction</b> .
<b>Gas Exchange</b>	Process that occurs in the thin, moist alveoli of our lungs, whereby oxygen enter the bloodstream and carbon dioxide exits it
<b>Asthma</b>	An illness where the narrow bronchioles [tubes] in our lungs swell up, making breathing difficult. Often triggered by an allergic reaction.
<b>Drugs</b>	A chemical that affects how the body works. Some are legal, like medicines. Many are addictive.
<b>Alcohol</b>	A drug that depresses the body by slowing nerves and senses, Damages the liver and other organs.
<b>Smoking</b>	A drug that stimulates [speeds up] the body. Causes lung cancer and heart disease. Contains addictive nicotine.



### ROCK TYPES

- **Igneous rock:** forms when magma/lava cools and hardens
- **Sedimentary rock:** forms when sediments are buried, compacted & cemented together
- **Metamorphic rock:** forms when existing rock is subjected to great heat & pressure over a long period of time

### Convection

Hotter, less dense areas rise; cooler, more dense areas sink

### Conduction

Heat is passed on by colliding particles

### Radiation

Heat travels as waves without particles

# Y8 SCIENCE KNOWLEDGE ORGANISER

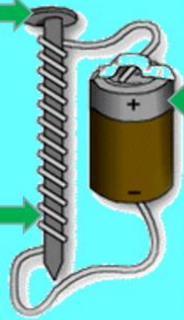
## UNIT 5 [Summer]



### How do you make an electromagnet?

A core made of magnetic material [not steel]

A coil made of wire



You can make an electromagnet **stronger** by doing these things:

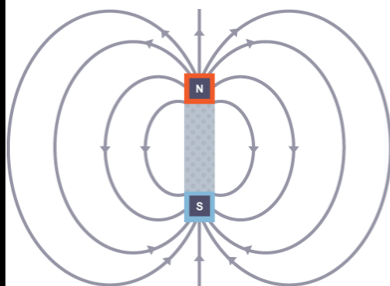
- adding more turns to the coil
- increasing the current flowing through the coil

An electrical current

Electromagnets have some **advantages** over permanent magnets.

For example:

- they can be turned on and off
- the strength of the magnetic field can be varied



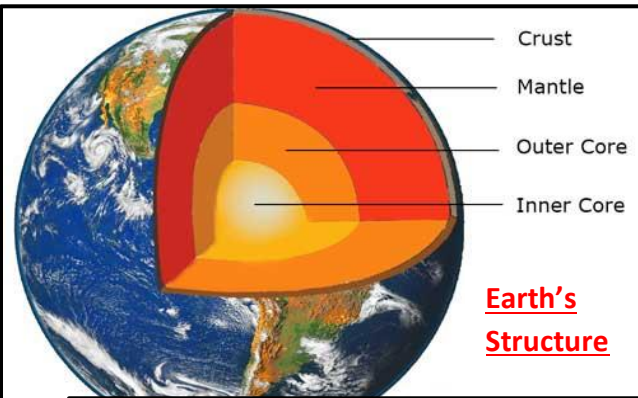
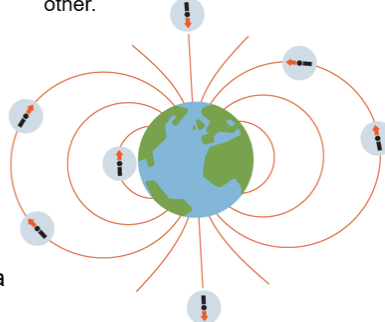
A magnet creates a **magnetic field** around it.

A force is exerted on a magnetic material brought into a magnetic field.

The force is a **non-contact force** because the magnet and the material do not have to touch each other.

The **Earth** produces a magnetic field, in which the field lines are most concentrated at the poles.

This magnetic field can be detected using magnetic materials or magnets, such as a **compass**.



**Earth's Structure**

### ROCK TYPES



- **Igneous rock:** forms when magma/lava cools and hardens
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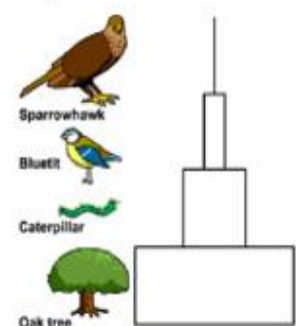
Key Vocabulary	Definition
<b>Food Web</b>	An inter-connected map to show what eats what within a habitat.
<b>Producer</b>	A living thing [such as a plant] that can create its own food. They start all food chains and webs. They are vital for our survival.
<b>Consumer</b>	A living thing [such as all animals] that has to eat another organism to get energy
<b>Predator</b>	A living thing that hunt and eat other organisms called <b>prey</b> . The numbers of predators follow the number of prey in a cyclical pattern.
<b>Pesticide</b>	Chemicals used to kill organisms [pests] that damage crops. They can have harmful effects on useful organisms such as bees, and can damage top predators [as the dosage increases as you move up a food chain].
<b>Biomass</b>	The amount of living material.
<b>Inter-dependence</b>	The principle that living things depend upon each other, and can affect each other. For example, if a layer of a food chain is affected, it will have a knock-on effect elsewhere in the same food chain
<b>Weathering</b>	The processes that change rocks in nature. They can be biological [plant roots], chemical [acid rain] or physical [ice or temperature change] in their nature
<b>Transportation</b>	The movement of rock fragments by wind, rain and more commonly rivers. Materials often get sorted by size.
<b>Rock Cycle</b>	The continual process over millions of years whereby rocks change from one form to another
<b>Static Electricity</b>	An attraction or repulsion force generated by rubbing insulating materials like plastic. Rubbing transfer electrons to materials, making them negatively charged. They then will attract positively charged items that have lost electrons and repel other negatively charged objects.

In a pyramid of numbers, the length of each bar represents the **number of organisms** at each level in the food chain.

Pyramid of number



Pyramid of biomass



In a pyramid of biomass, the length of each bar represents the **biomass** at each level of the food chain.