



## KS1 YEAR 1 KQ- The Human Body



### Speak like a Scientist

- ★ neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth and teeth.
- ★ Senses- Touch, sight, see, hear, taste, touch/feel.

1. Name and identify parts of the human body.

2. Draw and label parts of the human body.

4. Identify what the use of sound is.

3. Identify what the use of sight is.

5. Identify what the use of taste is.

6. Identify what the use of touch is.

7. Identify what the use of smell is.



## KS1 YEAR 1 KQ- What are the properties of everyday materials?



### Speak like a Scientist

- ★ Types of materials: wood, plastic, glass, metal, water, rock, brick, fabric, sand
- ★ Properties of materials: hard/soft, stretchy/not stretchy, shiny/dull, rough/smooth, bendy/not bendy, transparent/not transparent, sticky/not sticky
- ★ Verbs associated with materials: crumble, squash, bend, stretch, twist
- ★ Senses: touch, see, hear, smell and taste

1. Explore materials are objects made from?

2. Identify the properties of rock.

4. Observe what happens to materials when they are heated and cooled?

3. Compare everyday materials?

5. Identify materials that float and sink.

6. Record which materials absorbs water?

### Key Scientists

John Boyd Dunlop (1840 – 1921) - <http://primaryfacts.com/8429/john-boyd-dunlop-facts-and-information/>

Charles Macintosh (176 – 1843) - [http://www.rampantscotland.com/inventions/inventions\\_waterproof.htm](http://www.rampantscotland.com/inventions/inventions_waterproof.htm)



## KS1 YEAR 1 KQ- What are seasonal changes?



### Speak like a Scientist

- ★ Seasons; spring, summer, autumn, winter
- ★ Year, months, days
- ★ Hot, warm, mild, cold
- ★ Sunny
- ★ Cloudy
- ★ Rain, sleet, snow, hail, thunder, lightning, rainbow
- ★ Wet, damp, dry
- ★ Windy, breezy, gust
- ★ Temperature
- ★ Degrees Celsius
- ★ Thermometer

**This topic is taught in stages over the period of the year.**

1. Identify what a season is.

2. Identify changes in autumn.

3. Gather and record data for autumn.

5. Gather and record data for winter.

4. Identify changes in winter.

6. Identify changes in spring.

7. Gather and record data for spring.

8. Identify changes in summer

9. Gather and record data for summer.



## KS1 YEAR 1 KQ- How are plants the same and different?



### Speak like a Scientist:

- ★ Trees - deciduous, evergreen, ash, birch,
- ★ Wild flowering plants - cleavers, coltsfoot, daisy,.
- ★ Garden plants – crocus, daffodil, bluebells, etc
- ★ Parts of plants – roots, branch, trunk, stalk, leaf, flower, petal, seeds, bulbs and twigs

Pre teaching -  
One lesson per term. Planting

1. How can we recognise a plant?

2. Identify parts of a tree.

5. Identify deciduous trees.

4. How many different types of flowers can be found?  
Can we use the flower to find out the name of the plant?

3. What is the difference between a wildflowers and a garden plant.

6. Identify evergreen trees.

7. Record data for trees in the local area.

### Key Scientists

Barbara McClintock (1902 – 1992)

Joseph Banks (1743 – 1820)



## KS1 YEAR 1 KQ- What are the features of common animals?



### Speak like a Scientist:

- ★ Birds, fish, amphibians, reptiles, mammals and invertebrates
- ★ Feathers, scales, gills, fins, hair, land, water, backbone, skeleton
- ★ Carnivores, herbivores, omnivores
- ★ Meat, plants

1. Identify different mammals.

2 Identify different birds.

4. Compare reptiles and amphibians.

3. Identify different fish.

5. Compare and group animals.

6. Which animals are herbivores, carnivores and omnivores?

### Key Scientists

Amy Vedder (1951 -) –  
<https://www.amnh.org/learn-teach/curriculum-collections/biodiversity-crisis/profile-amy-vedder>



## KS1 YEAR 1 KQ- Sustainability Unit

Caring for the planet - Spring term (2 lessons)

Growing and cooking - Summer term (3 lessons)

1. Why is it important to care for our planet?

2 Identify how we care for our planet.

4. What have I planted and grown this year.

3. Identify where my food comes from.

5. Can I cook with what I have grown this year.



### Speak like a Scientist:

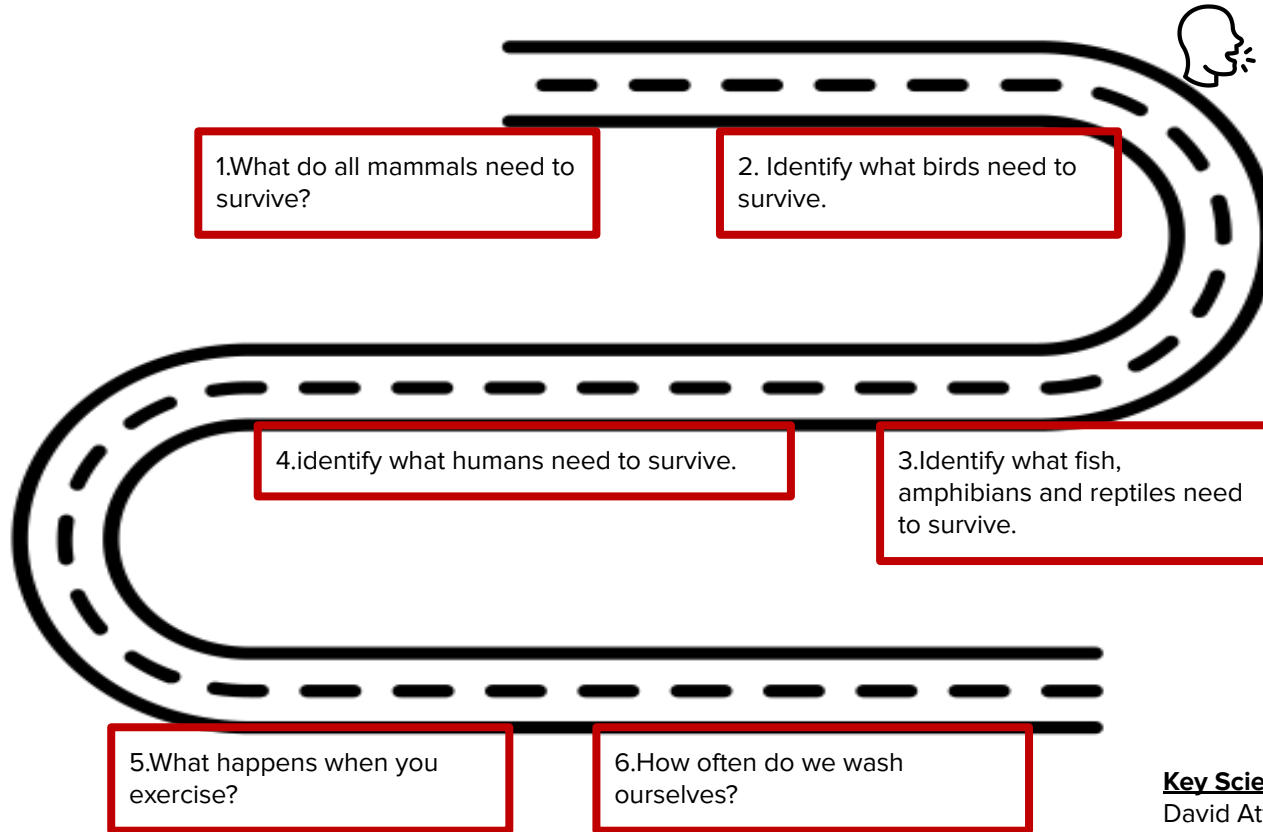
- ★ Birds, fish, amphibians, reptiles, mammals and invertebrates
- ★ Feathers, scales, gills, fins, hair, land, water, backbone, skeleton
- ★ Carnivores, herbivores, omnivores
- ★ Meat, plants

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## KS1 YEAR 2 KQ- What do animals and humans need?



1.What do all mammals need to survive?

2. Identify what birds need to survive.

4.identify what humans need to survive.

3.Identify what fish, amphibians and reptiles need to survive.

5.What happens when you exercise?

6.How often do we wash ourselves?

### Speak like a Scientist:

- ★ Classification - Birds, fish, amphibians, reptiles, mammals and invertebrates
- ★ Classification - Carnivores, herbivores, omnivores
- ★ Stages of growth of many insects – egg, larva, pupa, adult
- ★ Names of some invertebrates – ladybirds, butterflies, dragonflies, etc
- ★ Names of some amphibians – smooth newt, common frog, toad
- ★ Stages of life –baby, toddler, child, teenager, adult
- ★ Life processes – growth, nutrition (feeding), respiration (breathing is part of this)
- ★ Hygiene – clean, wash, germs
- ★ Foods – healthy, grow, strong, energy

### Key Scientists

David Attenborough (1926 - )



## KS1 YEAR 2 KQ- How do we compare the properties of materials?



### **Speak like a Scientist:**

- ★ Types of materials: wood, plastic, glass, metal, water, rock, brick, fabric, sand, paper, flour, butter, milk, soil
- ★ Properties of materials: hard/soft, stretchy/not stretchy, shiny/dull, rough/smooth, bendy/not bendy, transparent/not transparent, sticky/not sticky
- ★ Verbs associated with materials: crumble, squash, bend, stretch, twist
- ★ Senses: touch, see, hear, smell and taste

1. Which materials are suited for different purposes?

2. What are the uses of wood, paper and cardboard.



5. Investigate if the same object can be made of different materials.

4. Investigate the properties of metal.

3. How flexible are plastics?

6. Test to see how flexible materials are.

7. Plan and investigate a waterproof experiment.

### **Key Scientists**

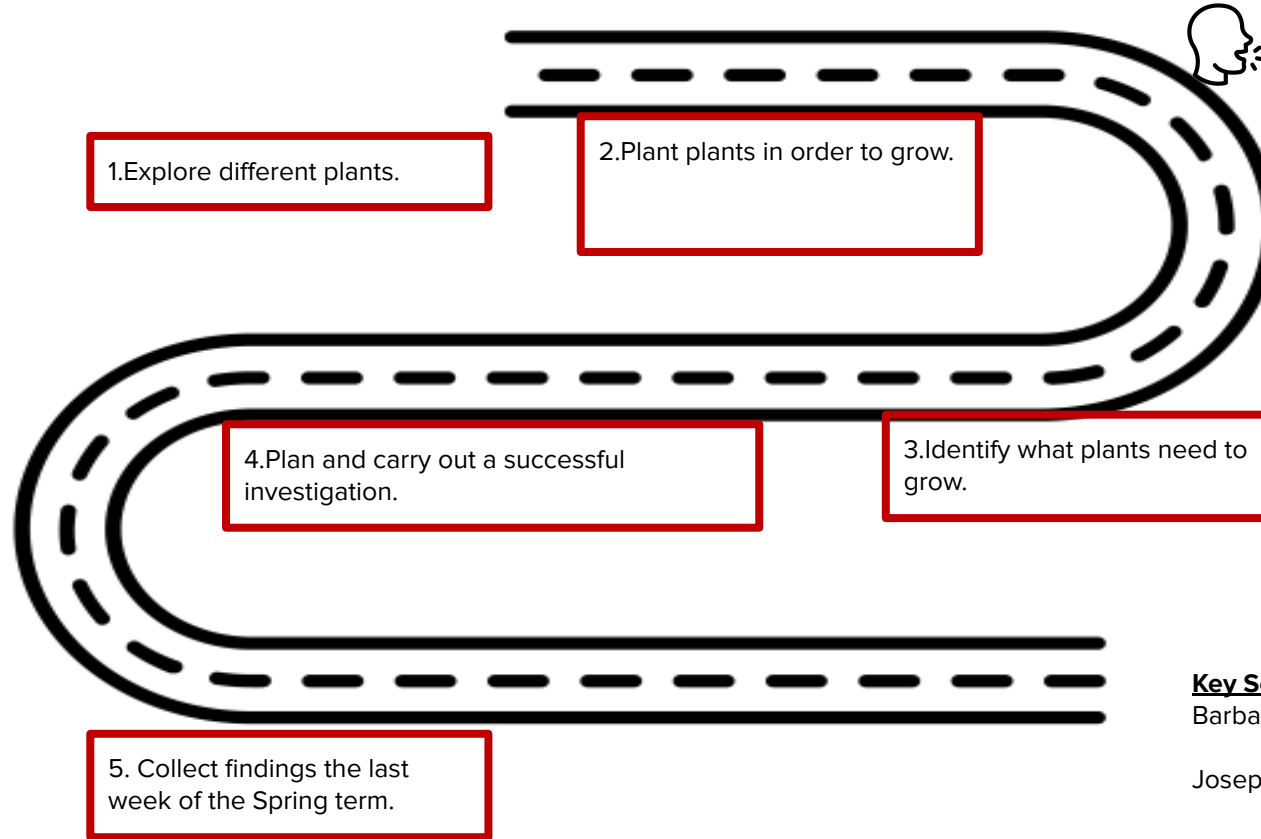
Leo Hendrik Baekeland (1863 -1944) -

<http://www.chemheritage.org/discover/online-resources/chemistry-in-history/themes/petrochemistry-and-synthetic-polymers/synthetic-polymers/baekeland.aspx>





## KS1 YEAR 2 KQ- Do plants grow in the light or dark?



### Speak like a Scientist:

- ★ Trees
- ★ Wild flowering plants
- ★ Garden plants – crocus, daffodil, bluebells, etc
- ★ Parts of plants – roots, branch, trunk, stalk, leaf, flower, petal, seeds, bulbs and twigs
- ★ Need of plants – water, light, heat, temperature

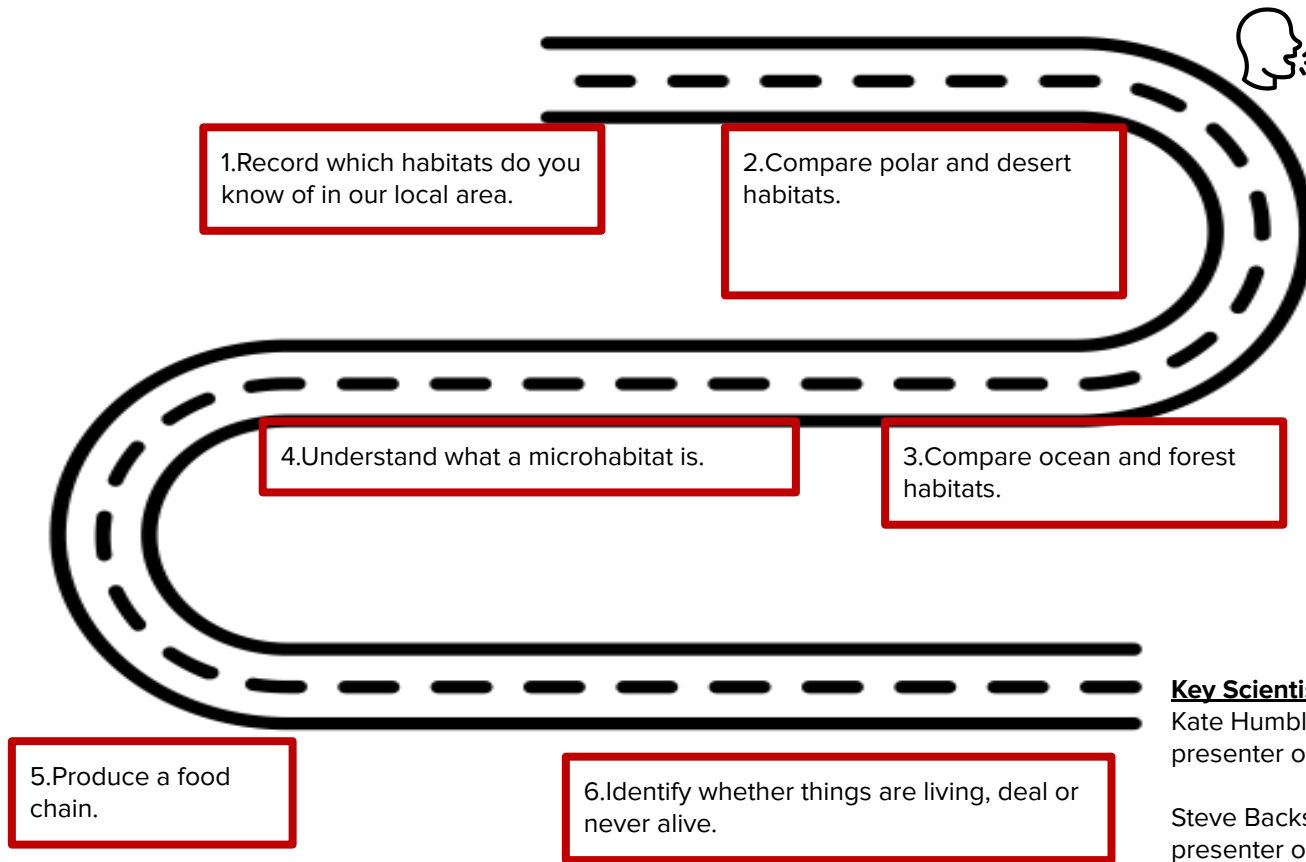
### Key Scientists

Barbara McClintock (1902 – 1992)

Joseph Banks (1743 – 1820)



## KS1 YEAR 2 KQ- Which habitats are on our amazing Planet Earth?



### Speak like a Scientist:

- ★ Habitat, micro habitat
- ★ Pond, meadow, log pile, woodland, river, lake, beach, cliff
- ★ Trees - deciduous, evergreen
- ★ Wild flowering plants - cleavers, coltsfoot,
- ★ Garden plants – crocus, daffodil, bluebells, etc
- ★ Parts of plants – roots, branch, trunk, stalk, leaf, flower, petal, seeds, bulbs and twigs
- ★ Invertebrates – snail, slug
- ★ Pond animals – pond skater

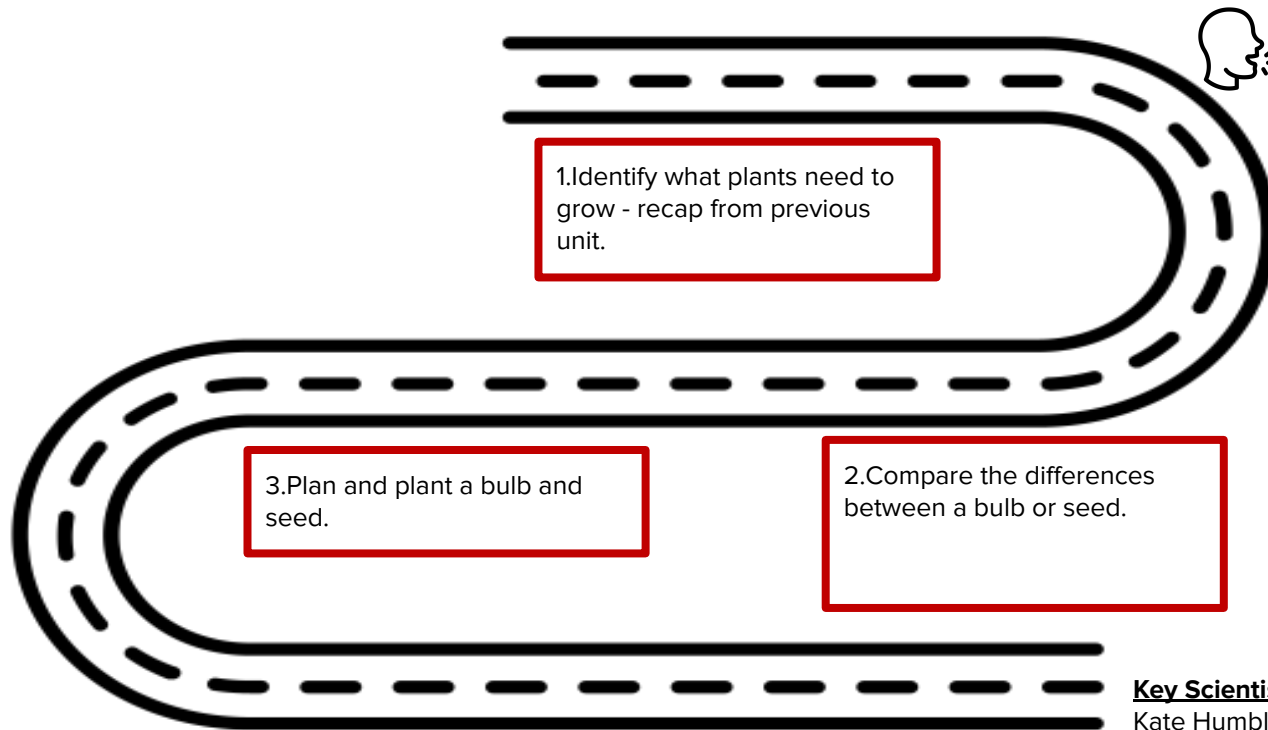
### Key Scientists

Kate Humble (1968 - ) – naturalist and presenter on BBC of wildlife programs

Steve Backshall (1973 - ) – naturalist and presenter on BBC of wildlife programs



## KS1 YEAR 2 KQ- What is the difference between a bulb and seed?



### Speak like a Scientist:

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- ★ Pond, meadow, log pile, woodland, river, lake, beach, cliff
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## KS1 YEAR 2 KQ- How do we change over time?

You will need to order butterflies as a focus for this topic.

1. Identify how humans change over time.

3. Highlight each stage of a butterfly.

2. Compare the life cycles of mammals and amphibians.

4. Identify if there are any patterns in the life cycles of different animals.

4. Present the different stages of a butterfly.



### Speak like a Scientist:

- ★ Habitat, micro habitat
- ★ Pond, meadow, log pile, woodland, river, lake, beach, cliff
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## KS1 YEAR 2 KQ- Sustainability unit

Plastic - Autumn term (2 lessons).

Wildlife- Summer term (2 lessons).

1. Identify how plastic is helpful and harmful.

2. Record how we can reduce our plastic waste in school.

4. Produce ideas to suggest how we can do for wildlife.

3. Identify what wildlife does for us.



## KS2 YEAR 3 KQ- Are all skeletons the same?

1. Name and identify bones in the human body and their functions.

2. Name and identify bones in a range of animals.

4. What is the function of muscles?

3. Classify animals with and without a spine.

5. Name different joints in your body.

6. Identify how we move.



### Speak like a Scientist:

- ★ Nutrition
- ★ Diet
- ★ Vitamins, minerals, fats, proteins and carbohydrates
- ★ Functions of skeletons – protect, support and aid movement.

### Key Scientists

Diane France (1954 - ) Diane France solves mysteries and crimes by deciphering the stories bones tell her.

[http://www.hoppingfun.com/bone\\_detective\\_27895.htm](http://www.hoppingfun.com/bone_detective_27895.htm)



## KS2 YEAR 3 KQ- What types of nutrition do we need?

1. Identify the five food groups.

2. Compare different diets and identify a balanced diet.

3. Describe an animal diet.



### Speak like a Scientist:

- ★ Nutrition
- ★ Diet
- ★ Vitamins, minerals, fats, proteins and carbohydrates
- ★ Functions of skeletons – protect, support and aid movement.

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## KS2 YEAR 3 KQ- Where are the rocks in the world?



### Speak like a Scientist:

- ★ Names of rocks – Chalk, limestone, granite, basalt, sandstone, flint, slate, shale, marble
- ★ Types of rock – Sedimentary, metamorphic, igneous
- ★ Types of minerals – Calcite, feldspar, topaz, diamond, talc, corundum
- ★ Properties of rocks – Hard/soft, permeable/impermeable
- ★ Processes – Heat, pressure, erosion, transportation, deposition, melt, solidify
- ★ Size of rocks – Grain, pebbles
- ★ Rock describing words – Crystals, layers

1. What do the different rocks look like?

2. Classify different rocks.

3. Test different rocks for certain criteria.

4. Observe different fossils.

5. How are fossils made?

6. Explore the importance of soil.

6. Plan a simple soil experiment.

6. Evaluate the finding of an experiment.

### Key Scientists

<https://www.geologists.org.uk/famous-geologists/> is a good place to search for more information on famous geologists.

<https://www.nhm.ac.uk/our-science/departmentsand-staff/earth-sciences.html> is a good website to find out about contemporary geologists.





## KS2 YEAR 3 KQ- Why do we need light?



### **Speak like a Scientist:**

- ★ Simple comparisons: dark, dull, bright, very bright
- ★ Comparative vocabulary: brighter, duller, and darker
- ★ Superlative vocabulary: brightest, dulllest, and darkest
- ★ Opaque, translucent, transparent
- ★ Shadow – block, absence of light
- ★ Reflect – bounce, mirror, reflection
- ★ See – light source
- ★ Sun – sunset, sunrise, position

1. Identify what sources provide light and explain how important the sun is.

2. Explain how we can see.

4. Explain the difference between opaque and transparent.

3. Which is the darkest shadow?

5. Plan a simple experiment to demonstrate shadows.

6. Evaluate how successful the shadow experiment was.

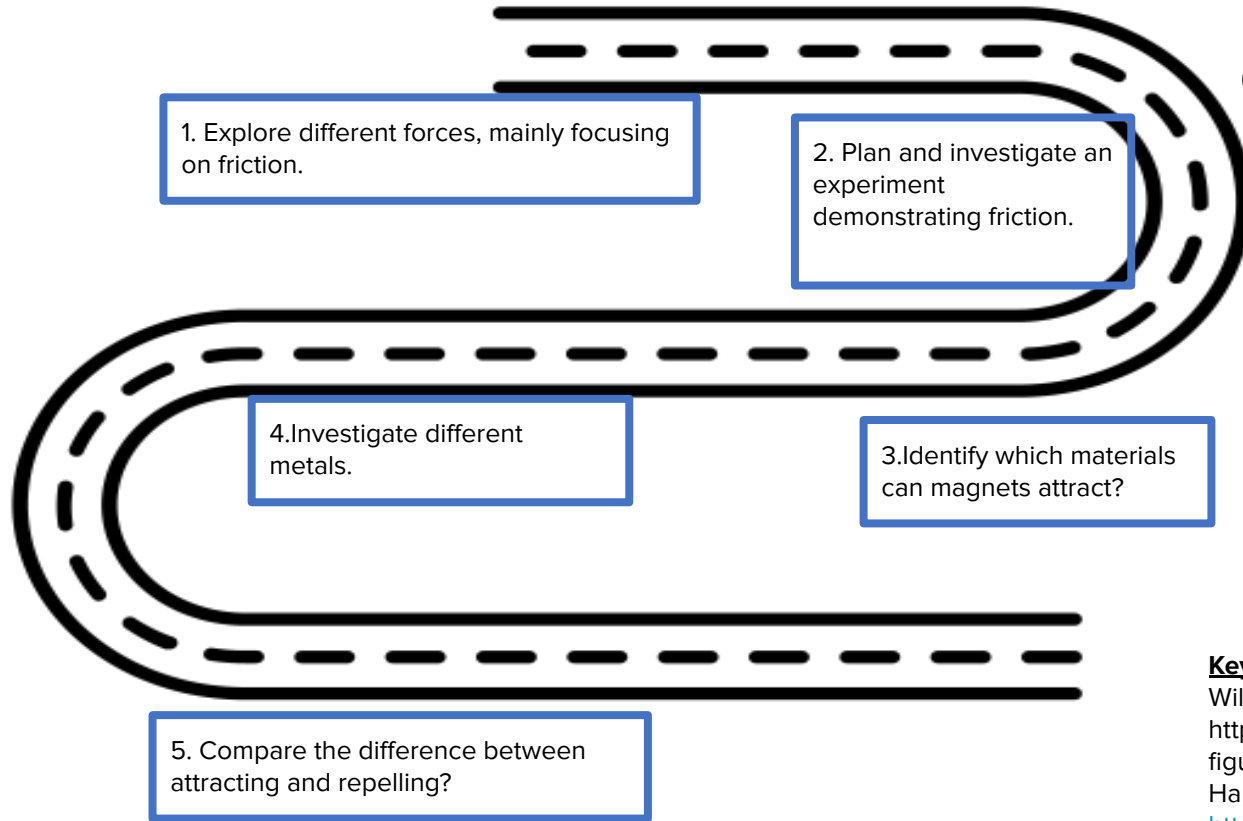
### **Key Scientists**

James Clerk Maxwell (1831- 1879) -  
[http://www.clerkmaxwellfoundation.org/html/about\\_maxwell.html](http://www.clerkmaxwellfoundation.org/html/about_maxwell.html)

Thomas Young (1773 – 1829) -  
<https://micro.magnet.fsu.edu/optics/timeline/people/young.html>



## KS2 YEAR 3 KQ- What are magnets used for?



### Speak like a Scientist:

- ★ Magnets – bar and horseshoe
- ★ Attract, repel
- ★ North and south poles
- ★ Magnetic
- ★ Magnetic field

### Key Scientists

William Gilbert (1544 – 1603) - [http://www.bbc.co.uk/history/historic\\_figures/gilbert\\_william.shtml](http://www.bbc.co.uk/history/historic_figures/gilbert_william.shtml)  
Hans Christian Oersted (1777 – 1851) - <https://www.famousscientists.org/hans-christian-oersted/>



## KS2 YEAR 3 KQ- What do the parts of a flower do?



### Speak like a Scientist:

- ★ Trees - deciduous, evergreen
- ★ Wild flowering plants - cleavers, coltsfoot, daisy, dandelion, garlic mustard
- ★ Garden plants – crocus, daffodil, bluebells, etc
- ★ Parts of plants – roots, branch, trunk, stalk, leaf, flower, petal, seeds, bulbs and twigs
- ★ Parts of a flower – petal, stamen (anther + filament), carpel (stigma + style + ovary + ovule)
- ★ Processes – pollination, fertilisation, germination
- ★

### Key Scientists

Carl Linnaeus (1707 – 1778)

Kew Gardens

Information on the very latest finds from Kew Gardens can be found at - <https://www.kew.org/science>

1. Dissect a plant to identify the functions of a plant - recap from Year ½.

2. Plant and plant a seed to see how water is transported.

3. What does the stem do?

4. Identify the reproductive parts in plants.

5. How does pollination occur?

6. Explain how seed dispersal occurs.

7. Identify how the flowers change over time?



## KS2 YEAR 3 KQ- Sustainability unit



### Speak like a Scientist:

- ★ Trees - deciduous, evergreen
- ★ Wild flowering plants - cleavers, coltsfoot, daisy, dandelion, garlic mustard
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Kew Gardens

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Food waste - 2 lessons  
(Autumn term)

Biodiversity - 2 lessons  
(Summer term).

1. Identify what food waste is.

3. Explain what biodiversity is.

2. Explain how we can reduce our food waste.

4. Produce different ways we can increase biodiversity in our local area.



## YEAR 4 KQ- How many different animals are in the wildlife?



Children begin an observation over time. Enquiry to name and identify living things in their local area.

Children collect data throughout the year to gain a deeper understanding of how seasonal changes influence plant and animal life.

Children should repeat this process in autumn, spring and summer to gather and record data over the course of a year (2 lessons per term).

Children should decide how to record the data they collect in this step. They may use tables, tally charts or grouping plants and animals based on similarities

1. Group different animals into vertebrates and invertebrates.

2. Sort different animals using a classification key.

4 . Summer term- Sort different animals using a classification key.

3. Sort different plants using a classification key.

5 . Summer term- Sort different plants using a classification key.

6. Explain the human impact on habitats.

### Speak like a Scientist:

- ★ Habitat, micro habitat
- ★ Pond, meadow, log pile, woodland, river, lake, beach, cliff
- ★ Organism – plant, animal
- ★ Trees - deciduous, evergreen, Wild flowering plants - cleavers, coltsfoot, daisy, white deadnettle and yarrow.
- ★ Garden plants – crocus, daffodil, bluebells, etc
- ★ Parts of plants – roots, branch, trunk, stalk, leaf, flower, petal, seeds, bulbs and twigs
- ★ Invertebrates – snail, slug, woodlouse, spider, beetle
- ★ Pond animals

### Key Scientists

Carl Linnaeus (1707 – 1778) – Developed a method for classifying all living things on the planet.

[https://kids.kiddle.co/Carolus\\_Linnaeus](https://kids.kiddle.co/Carolus_Linnaeus)



## YEAR 4 KQ- What is a solid, liquid and gas?



1. What is a solid, liquid and gas?

2. Identify how states can change.

4. Explain what the water cycle is.

3. Plan and investigate how temperature changes.

5. Plan an evaporation experiment.

6. Evaluate the evaporation experiment.

### Speak like a Scientist:

- ★ States of matter - Solid, liquid and gas
- ★ Examples of gases (at room temperature and pressure) – Oxygen, hydrogen, helium, carbon dioxide, methane
- ★ Examples of liquids (at room temperature and pressure) – Water, milk, juice, petrol, oil
- ★ Examples of solids (at room temperature and pressure) – Wood, rocks, metal, plastic, glass, wool, leather, etc

### Key Scientists

Marie Curie (1867 – 1934) -

[https://www.ducksters.com/biography/women\\_leaders/marie\\_curie.php](https://www.ducksters.com/biography/women_leaders/marie_curie.php)

Famous chemists -

<http://famouschemists.org/antoine-lavoisier/>



## YEAR 4 KQ- What is a 'sound'?

1. Identify different vibrations.

2. Explain the different parts of the ear.

4. Explore how to change the pitch.

3. Explore how to make different volumes.

5. Plan and investigate a volume experiment.

6. Present findings from the previous experiment.



### Speak like a Scientist:

- ★ Ways to create sound – **bang, blow, shake, and pluck**
- ★ Loudness – **quiet, quieter, quietest, loud, louder and loudest**
- ★ **Pitch** - **low, lower, lowest, high, higher, and highest**
- ★ **Vibrations**
- ★ **Source**

### Key Scientists

Robert Boyle (1627- 1691)

Ernst Mach (1838-1916). Described how shock waves are formed.

Heinrich Hertz (1857-94). The unit of frequency used for all kinds of waves and vibrations is named after him. One Hertz is equal to one vibration per second.



## YEAR 4 KQ- What can electricity do?

1. Identify common appliances that use electricity.

3. Identify what a conductors and insulator are.

4. Explain how conductivity within a circuit.

2. Build and draw series circuits. Children to draw what they see now symbols as that is Year 6 criteria.



### Speak like a Scientist:

- ★ Electricity
- ★ Appliances: fridge, freezer, TV, computer, iron, kettle, etc
- ★ Series circuit
- ★ Components: battery, bulb (lamp), bulb (lamp) holder, buzzer, crocodile clip, leads, wires, switch
- ★ Describing words: brighter, duller, slow, fast, quiet, loud
- ★ Conductor, insulator
- ★ Effects of electricity: Light, sound, movement, heat
- ★ Switches – open, close

### Key Scientists

Benjamin Franklin (1706-90). Showed that lightning is caused by electricity.

Charles Augustine Coulomb (1736-1806). He invented instruments for measuring the forces between magnets and between charges.





## YEAR 4 KQ- What part does our digestive system play?

1. Identify are the functions of the different types of teeth- carnivores, herbivores and omnivores.

2. Plan a tooth decay experiment.

4 . Explain what happens in the stomach and small intestine.

3. Identify happens when we chew food - mouth and oesophagus.

5. Explain what happens in the large intestine.

6. Present finding on the tooth decay experiment.



### Speak like a Scientist:

- ★ Digestive system – , oesophagus, stomach, acid, small intestine
- ★ Protein, vitamin, mineral, carbohydrate, fats, energy, growth, repair. Saliva
- ★ Teeth – Incisors, canines, premolars, molars
- ★ Function
- ★ Foodchain – producer, consumer, predator, prey

### Key Scientists

Al-Jahiz (9th Century) – Provided one of the earliest descriptions of food webs. He was working in Baghdad, Iraq, in the early 800s.

Charles Elton (1900 – 1991) – Initiated the study of animal ecology.



## YEAR 4 KQ- How does a food chain work?

1. Identify what a food chain is.

3. Draw different food chains and present them.

2. Interpret different food chains.



### Speak like a Scientist:

- ★ Digestive system –, oesophagus, stomach, acid, small intestine
- ★ Protein, vitamin, mineral, carbohydrate, fats, energy, growth, repair. Saliva
- ★ Teeth – Incisors, canines, premolars, molars
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## YEAR 4 KQ- Sustainability Unit

Energy - Spring term (1 lesson).

Deforestation - Summer term (1 lesson)

1. Identify what a food chain is.

3. Draw different food chains and present them.

2. Interpret different food chains.



### Speak like a Scientist:

- ★ Digestive system – , oesophagus, stomach, acid, small intestine
- ★ Protein, vitamin, mineral, carbohydrate, fats, energy, growth, repair. Saliva
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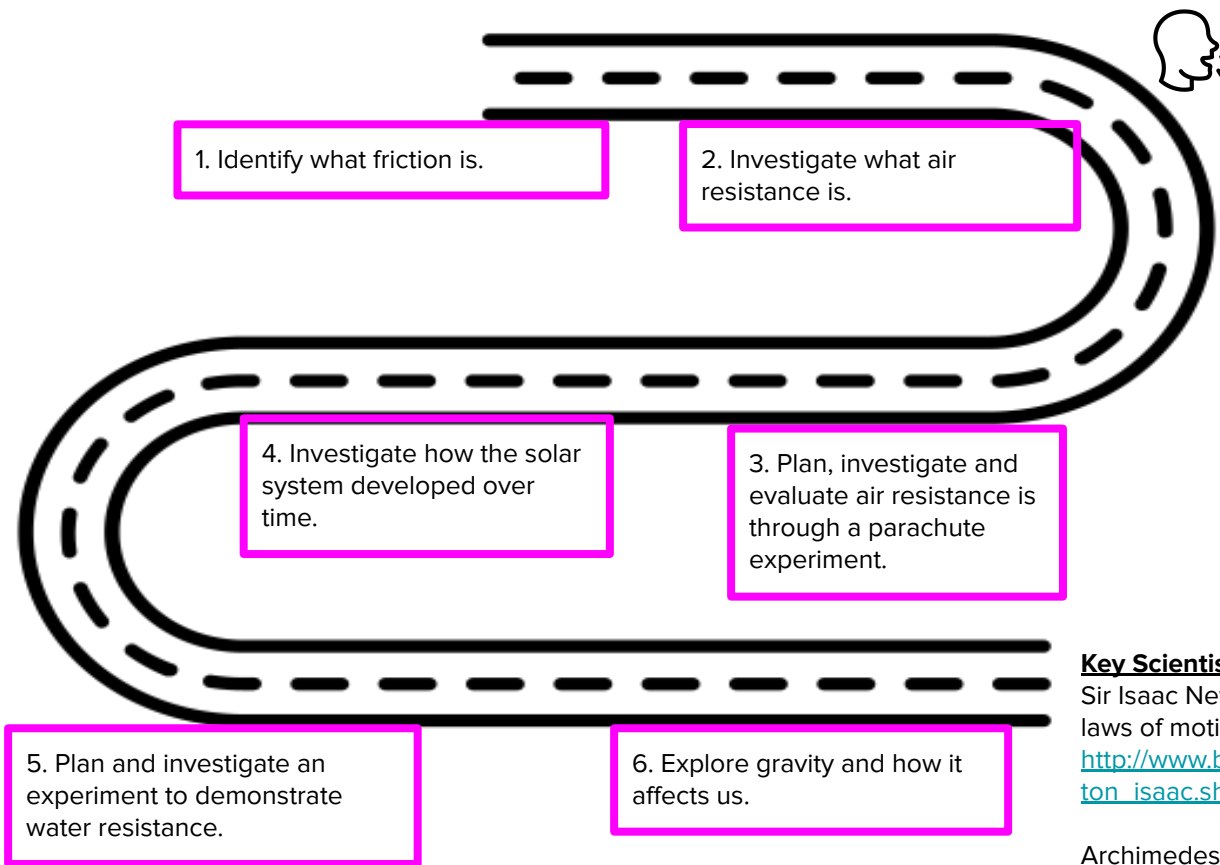
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## YEAR 5 KQ- How do forces effect the world we live in?



### **Speak like a Scientist:**

- ★ Types of forces: gravity, friction, air resistance, upthrust, weight
- ★ Measuring forces: Newton meter, Newtons (N)
- ★ Particles
- ★ Surface area
- ★ Push, pull
- ★ Balance
- ★ Mass – grams and kilograms
- ★ Mechanical devices – gears, levers, pulleys, springs

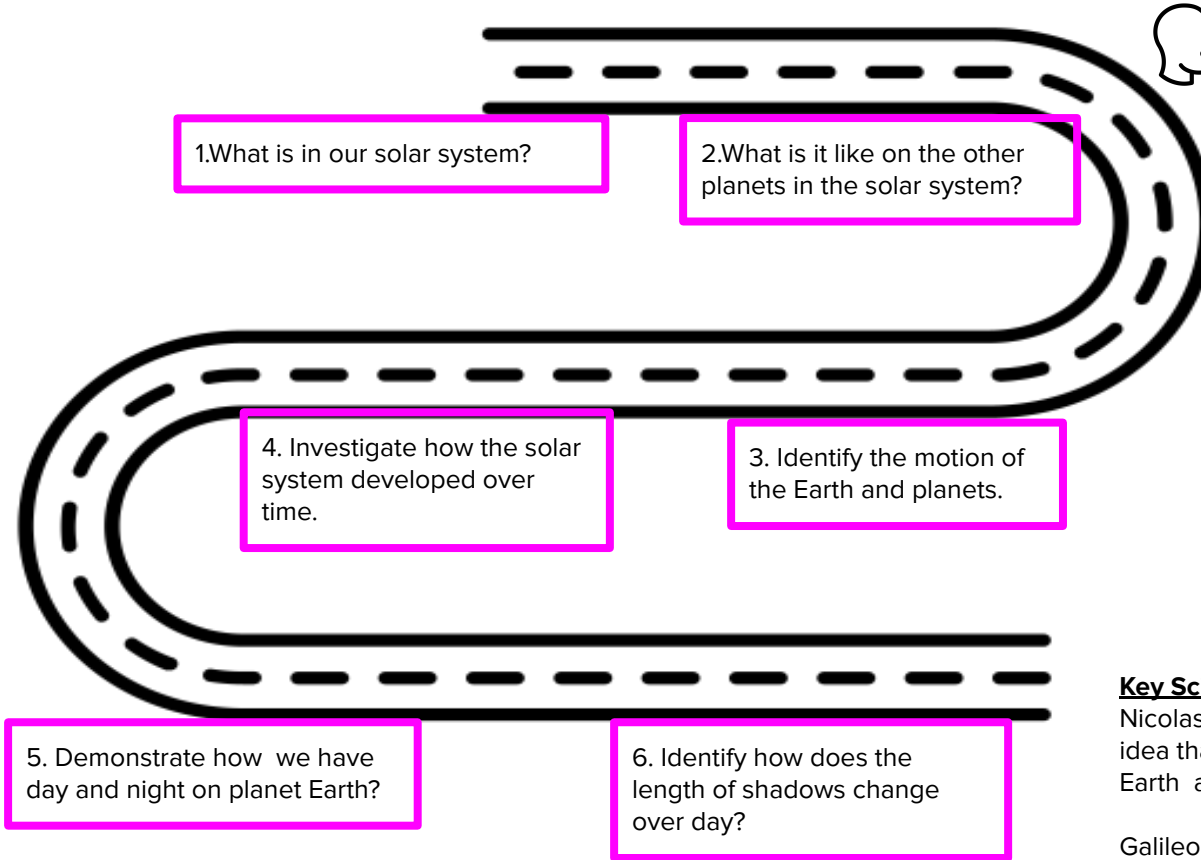
### **Key Scientists**

Sir Isaac Newton (1642 – 1727) – Formulated the laws of motion - [http://www.bbc.co.uk/history/historic\\_figures/newton\\_isaac.shtml](http://www.bbc.co.uk/history/historic_figures/newton_isaac.shtml)

Archimedes (c.287 - c.212 BC) – Greek inventor - [http://www.bbc.co.uk/history/historic\\_figures/archimedes.shtml](http://www.bbc.co.uk/history/historic_figures/archimedes.shtml)



## YEAR 5 KQ- What is in our solar system?



### Speak like a Scientist:

- ★ Day and night - Earth, axis, rotate
- ★ Solar system – Star = Sun, Planets = Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune (Pluto was classified as Dwarf planet in 2006)
- ★ Phases of the Moon - full moon, gibbous moon, half moon, crescent moon, new moon, waxing, waning
- ★ Moon's orbit: 29.5 days, lunar month
- ★ Orbit, planets, revolve, sphere

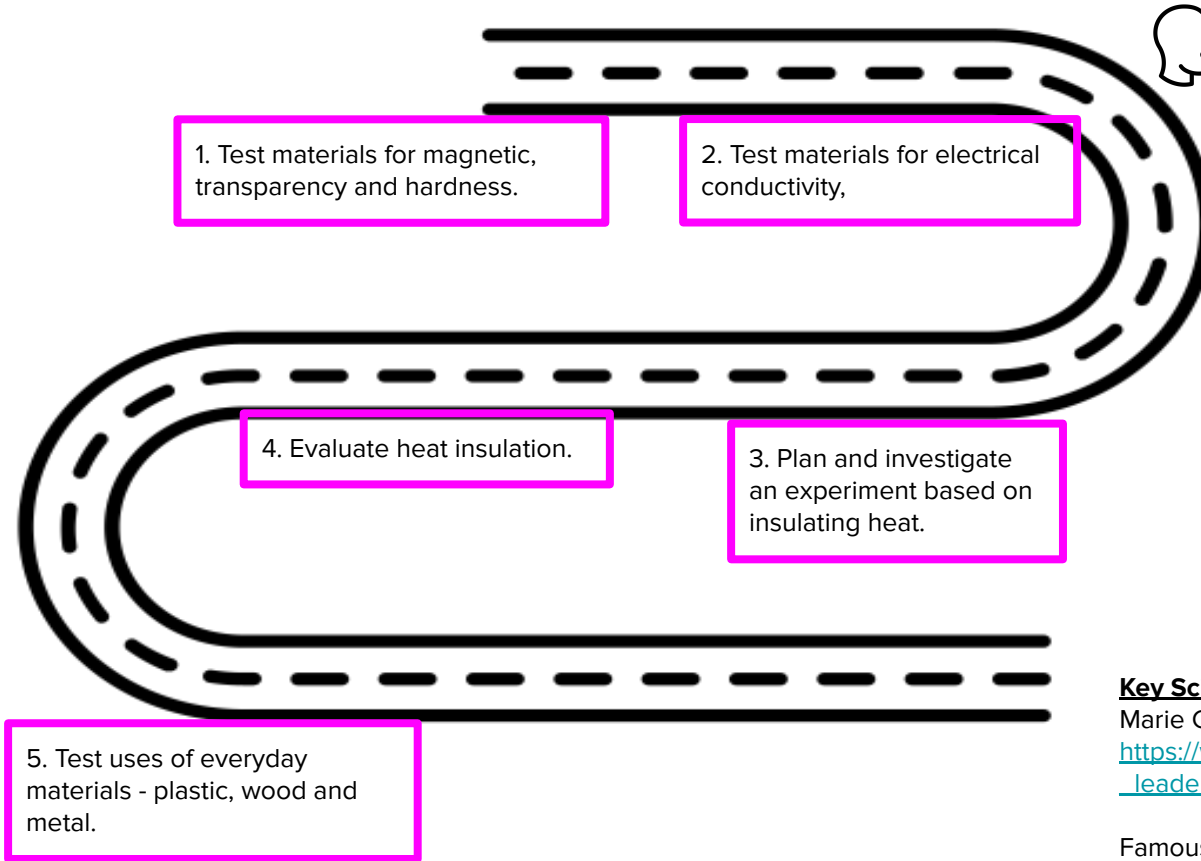
### Key Scientists

Nicolas Copernicus (1473 – 1543). Had the idea that Earth revolves on its axis and the Earth and other planets orbit around the Sun

Galileo Galilei (1564 – 1642). Discovered four of Jupiter's moons. In 1609 was the first person to make a study of the skies with a telescope.



## YEAR 5 KQ- What are the properties of different materials?



### Speak like a Scientist:

- ★ Thermal conductivity – thermal conductor, thermal insulator
- ★ Electrical conductivity – electrical conductor, electrical insulator.

### Key Scientists

Marie Curie (1867 – 1934) -

[https://www.ducksters.com/biography/women\\_leaders/marie\\_curie.php](https://www.ducksters.com/biography/women_leaders/marie_curie.php)

Famous chemists -

<http://famouschemists.org/antoine-lavoisier/>



## YEAR 5 KQ- Why are certain animals suited for different habitats?



1. Identify different stages of the human life cycle.

2. Explore the different stages of the human life cycle.

4. Explore different gestation periods and lifespans.

3. Investigate gestation periods of mammals.

5. Identify different stages of the mammal life cycle.

6. Compare the life cycles between insects, amphibians and birds.

7. Produce a poster demonstrating the knowledge of life cycles between insects, amphibians and birds.

### Speak like a Scientist:

- ★ Animals – amphibians, reptiles, birds, mammals, insects, fish
- ★ Animal development – egg, larva, pupa, nymph, adult, metamorphosis
- ★ Parts of a flower – petal, stamen (anther + filament), carpel (stigma + style + ovary + ovule)
- ★ Processes – pollination, fertilisation, germination

### Key Scientists

Professor Robert Winston (1940 - ) – contemporary scientist



## YEAR 5 KQ- What happens to our bodies as we get older?



1. Identify how reproduction happens in animals.

2. Identify how reproduction happens in plants.

4. Explore how pollination helps production.

3. Explore asexual reproduction.

5. Plan how to clone plants.

6. Present finding on cloning plants investigation.

7. Evaluate cloning plants investigation.

### Speak like a Scientist:

- ★ Gestation
- ★ Fetus
- ★ Fertilisation
- ★ Species
- ★ Baby
- ★ Toddler
- ★ Adolescent
- ★ Adult
- ★ Elderly person
- ★ Puberty
- ★ Hormones
- ★ Pituitary gland
- ★ Testosterone
- ★ Estrogen

### Key Scientists

Professor Robert Winston (1940 - ) – contemporary scientist





## YEAR 5 KQ- Are all changes reversible?



### Speak like a Scientist:

- ★ Dissolving – Solvent, solution, solute, soluble, insoluble, solid, liquid, particles, suspensions
- ★ Separating materials – Sieve, filter, evaporate, condense

1. Identify what happens during dissolving.

2. Explore how we separate different materials.

3. Explore how we make solutions and use evaporating.

4. Identify different reversible changes.

5. Identify different irreversible changes through either acid or burning.

### Key Scientists

Marie Curie (1867 – 1934) -

[https://www.ducksters.com/biography/women\\_leaders/marie\\_curie.php](https://www.ducksters.com/biography/women_leaders/marie_curie.php)

Famous chemists -


<http://famouschemists.org/antoine-lavoisier/>



## YEAR 5 KQ- Sustainability unit

Global Warming - Autumn term (2 lessons)

Plastic Pollution - Summer term ( 1 lesson).

A simple line drawing of a human head in profile, facing right, with three small curved lines above it indicating sound or breath.

1. Identify what is global warming.

2. Explore the impact of global warming on living things.

3. Investigate what plastic pollution is and the impacts on the planet.



## YEAR 6 KQ- How many different things live in the school grounds?

### Living things and their habitat



#### Speak like a Scientist:

- ★ Classification
- ★ Vertebrate, invertebrate
- ★ Kingdoms: animal, plant, 'micro-organism'
- ★ Classes: amphibian, reptile, bird, mammal,
- ★ Scales, feathers
- ★ Flowering plant, non-flowering plant

1. Identify the different conditions for life.

2. How can animals be placed in different groups?

4. Understand different microorganisms.

3. Classify different plants.

5. Classify different microorganisms.

#### Key Scientists

Carl Linnaeus (1707-1778)

The following video outlines the work of Carl Linnaeus — an animated video by Erasmus can be found on Youtube.

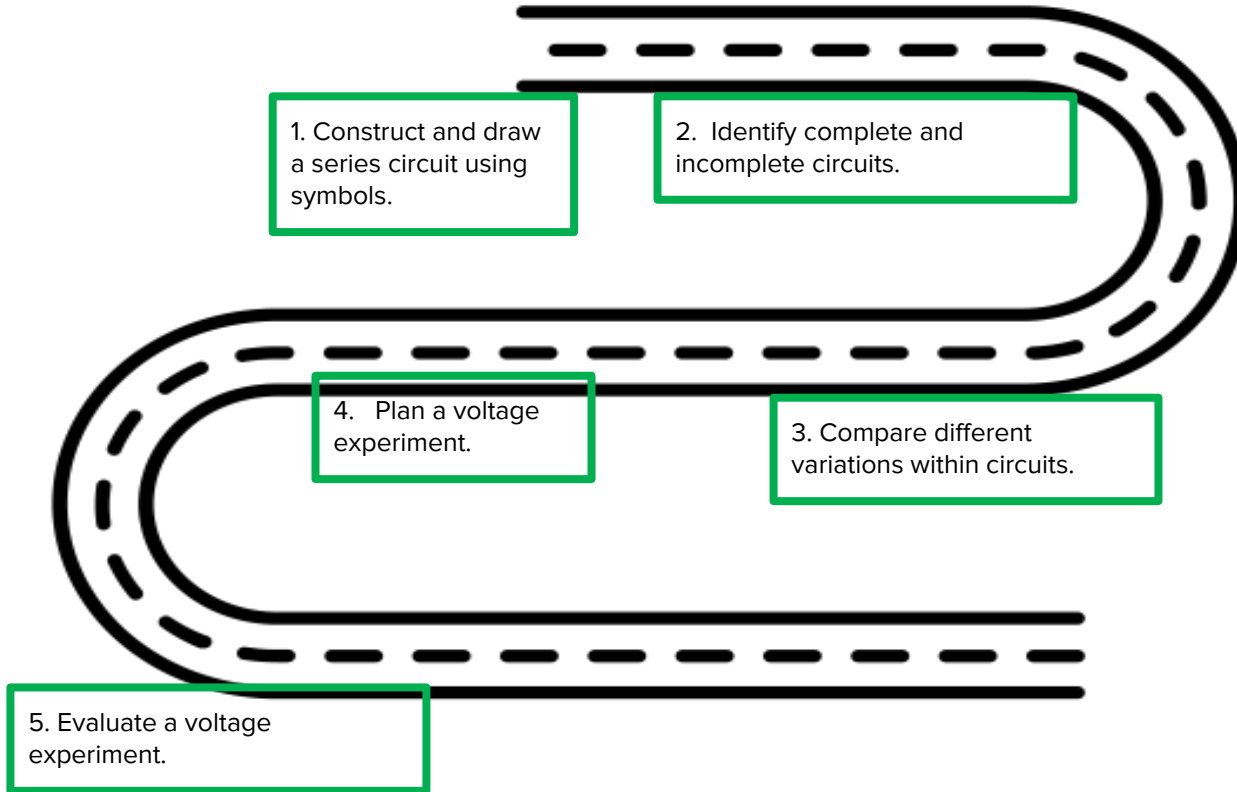
Evelyn Cheesman (1881 – 1969)

The following video outlines the work of Evelyn Cheesman

<http://www.nhm.ac.uk/nature-online/science-of-natural-history/biographies/evelyn-cheesman/index.html>



## YEAR 6 KQ- What is a electricity circuit?



### Speak like a Scientist:

- ★ Electricity, Volts
- ★ Series circuit
- ★ cells
- ★ Components:
  - battery, bulb (lamp),
  - bulb (lamp) holder,
  - buzzer, crocodile
  - clip, leads, wires,
  - switch
- ★ Describing words:
  - brighter, duller, slow,
  - fast, quiet, loud
- ★ Conductor, insulator
- ★ Resistance
- ★ Effects of electricity:
  - Light, sound,
  - movement, heat

### Key Scientists

Thomas Edison (1847-1931).  
Inventor of the fuse.

Benjamin Franklin (1706-90).  
Showed that lightning is caused  
by electricity.



## YEAR 6 KQ- How do we see things?



### Speak like a Scientist:

- ★ Simple comparisons: dark, dull, bright, very bright
- ★ Comparative vocabulary: brighter, duller, and darker
- ★ Superlative vocabulary: brightest, dulllest, and darkest
- ★ Opaque, translucent, transparent
- ★ Shadow – block, absence of light
- ★ Reflect – bounce, mirror, reflection
- ★ See – light source
- ★ Sun – sunset, sunrise, position

### Key Scientists

Thomas Young (1773 – 1829) – Wave theory of light. Double-slit experiment.

Sir David Brewster (1781 – 1868) - Deduced "Brewster's law" giving the angle of incidence that produces reflected light which is completely polarized; invented the kaleidoscope and the stereoscope, and improved the spectroscope

1. Recap - How we see from Year 4. Identify the importance between light and straight lines.

2. Explain how shadows are formed.

4. Draw conclusions on shadow experiment.

3. Plan a shadow experiment.

5. Identify what refraction is and what benefits it has.



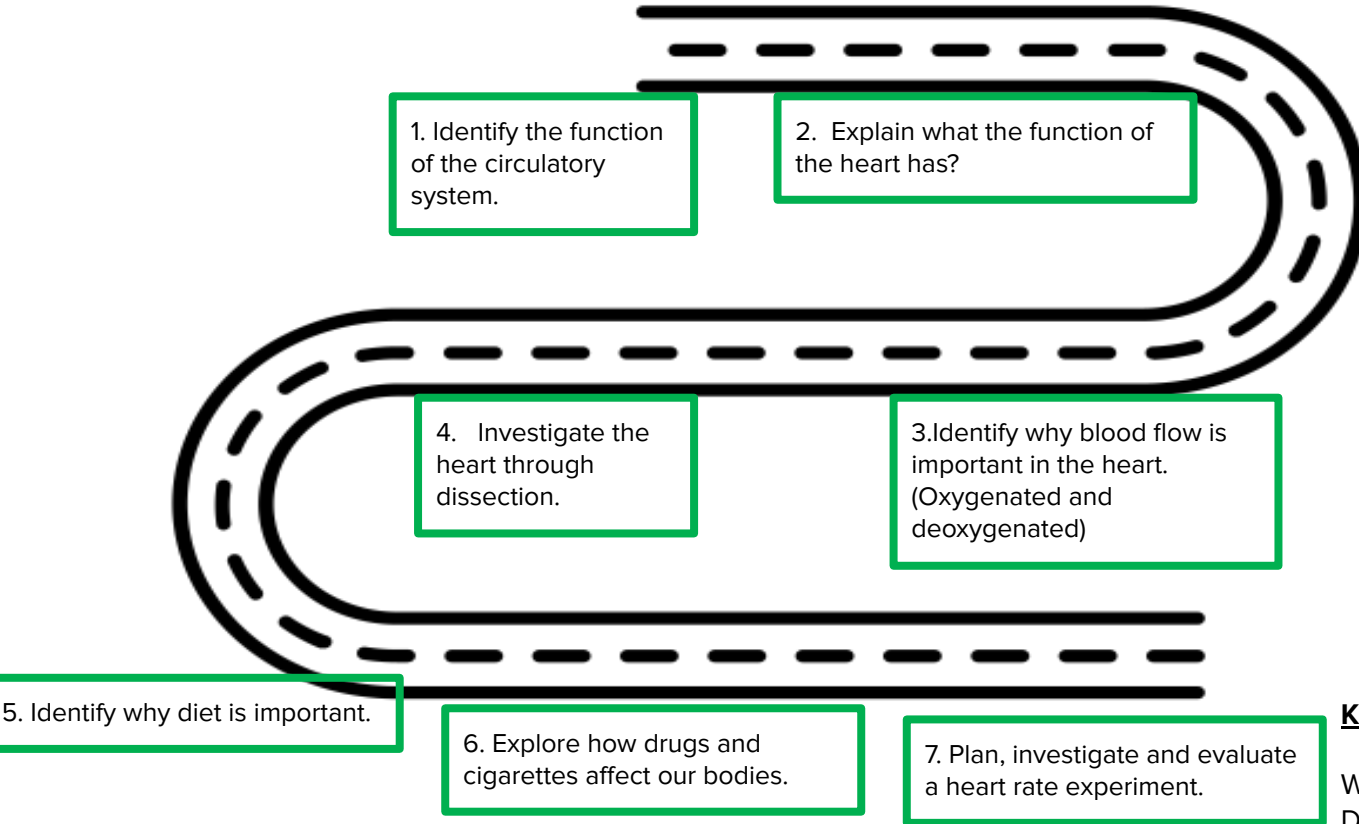
## YEAR 6 KQ- What do we need to stay healthy?

### Animals including humans



#### Speak like a Scientist:

- ★ Circulatory system – heart, blood, veins, arteries, pulse, clotting
- ★ Diet – balanced, vitamins, minerals, proteins, carbohydrates, sugars, fats
- ★ Drugs – caffeine, nicotine, alcohol, cannabis, cocaine, heroine
- ★ Lifestyle – healthy



#### Key Scientists

William Harvey (1578 – 1657)  
Discovered the circulatory system.  
[http://www.bbc.co.uk/history/historic\\_figures/harvey\\_william.shtml](http://www.bbc.co.uk/history/historic_figures/harvey_william.shtml)



## YEAR 6 KQ- How do we know about living things that have lived in the past?

### Evolution and inheritance



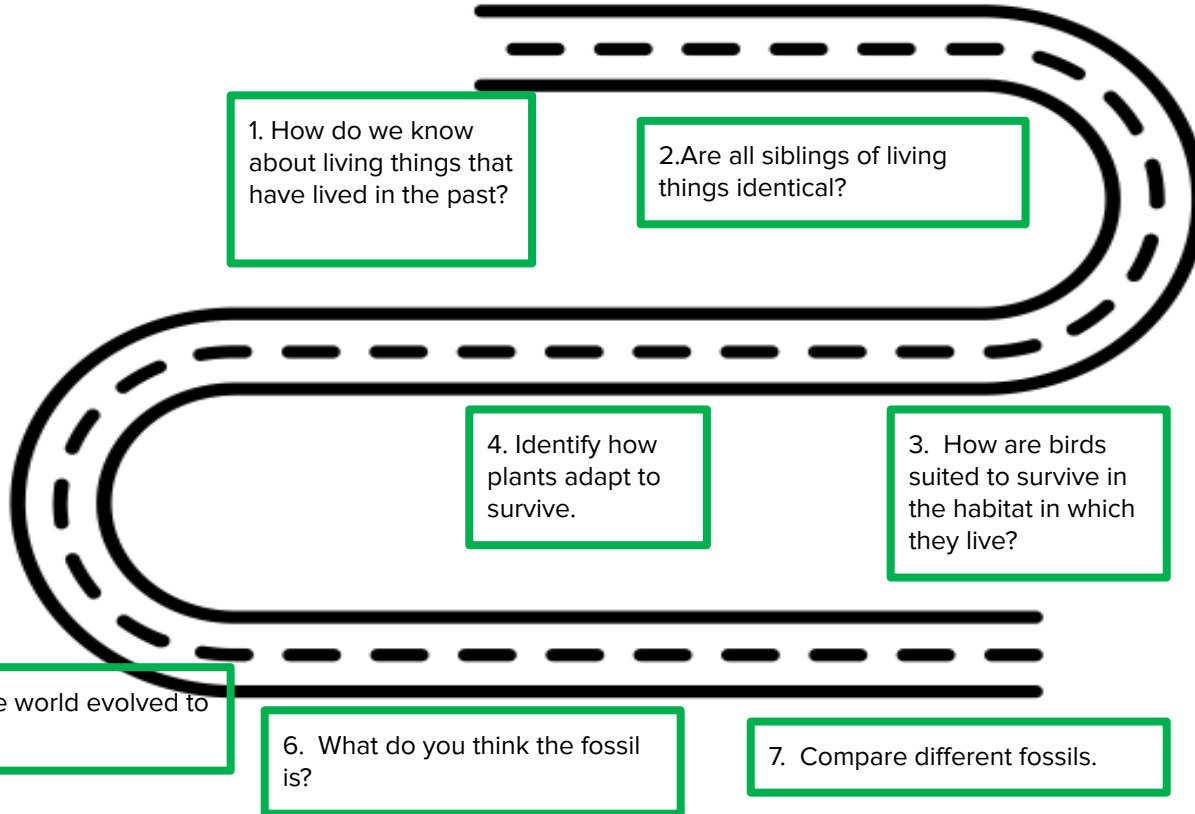
#### Speak like a Scientist:

- ★ Evolution, evolve
- ★ Kent Scheme of Work for Primary Science, 2019.
- ★ Natural selection
- ★ Survival
- ★ Reproduction
- ★ Offspring, parents, siblings
- ★ Environment
- ★ Variation
- ★ Fossils; ammonites, belemnites, micraster

#### Key Scientists

Charles Darwin (1809 – 1882) The following video outlines the work of Charles Darwin - <http://www.nhm.ac.uk/nature-online/science-of-natural-history/biographies/charles-darwin/index.html>

Alfred Russel Wallace (1823 - 1913) The following video outlines the work of Alfred Russel Wallace - <http://www.nhm.ac.uk/nature-online/science-of-natural-history/biographies/wallace/index.html>





## YEAR 6 KQ- Sustainability Unit

Renewable Energy -  
Autumn term (1 lesson)

Light Pollution - Spring  
term (1 lesson).



1. Identify what  
renewable energy is.

2. Understand how we use  
renewable energy.

3. Identify what light  
pollution is.

4. Explore how  
we can reduce  
light pollution.