



Science Learning Journey 2020-21

Year 1

Science

AUTUMN

'Everyday Materials'

1

Key learning this half term:

- Identify a variety of **everyday materials**,. Eg. **Wood, plastic, glass, metal, water, paper.**
- Distinguish between **object** and **material.**
- Describe the **properties** of everyday materials. Eg. **hard/soft, transparent/opaque, shiny/dull**
- Investigate why certain **materials** are suited or unsuited for making everyday **objects.**



Science

SPRING

'Light and Dark'

1



Key Learning this half term:

- Know that **light** is essential for seeing things.
- Identify different **light sources** including the **sun.**
- Know that there are **dark** places and some objects cannot be seen in the dark.
- Observe that light cannot pass through some materials and that is how **shadows** are created.
- Know that we only see the **moon** because it **reflects** light from the sun.
- Learn about **nocturnal animals** and their special adaptations to help them survive in the dark.

Science

SUMMER

'Plants and Trees'

1

Key learning this half term:

- Identify and name a variety of common **wild plants, garden plants** and **trees.**
- Identify and describe the basic **structure** of a variety of **common flowering plants** and **trees.**
- Understand the **differences** and **similarities** between **deciduous trees** and **evergreen trees.**
- Compare the **life cycle** of a variety of **plants** and **trees.**



Science

AUTUMN

'Push and Pull'

2

Key learning this half term:

- know that there are different kinds of **movement.**
- Describe the movement of familiar things.
- Start to understand that **forces** help us to move.
- Learn about the different types of forces, including a **push, pull** and **twist.**
- Begin to identify when we are using pushes and pulls.
- Learn that pushing or pulling things can make objects **start** or **stop** moving
- Know that a push or a pull can **change** the **shape** of an **object.**
- Work Scientifically.**
- Use simple **scientific language** to explain the findings of an investigation.



Science

SPRING

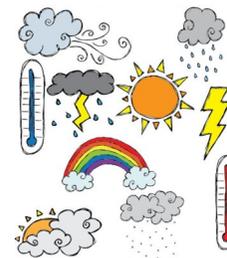
'Seasonal Changes'

2



Key learning this half term:

- Understand and describe what the **four seasons** are.
- Learn about how **trees** and **plants** are affected by **seasonal changes.**
- Know how the **weather changes** through the **four seasons.**
- Observe** and **record weather changes.**
- Know how the **length of a day** varies through the different **seasons.**



Science

SUMMER

'Animals including Humans'

2

Key learning this half term:

- Identify, name, draw and label** the basic parts of the **human body** including the **face.**
- Understand which **body parts** are associated with each **sense.**
- Group** and **classify** a variety of **animals.** For example **mammal, bird, fish.**
- Identify body parts** of a variety of **different animals.**
- Compare a **human body** to other **animals.**
- Identify **common animals** including **fish, amphibians, reptiles, birds** and **mammals.**
- Identify animals that are **carnivores, herbivores** and **omnivores.**
- Identify the **features** of an **animal.**





Science Learning Journey 2020-21

Year 2

Science

'Everyday Materials - Uses'



AUTUMN

1



Key learning this half term:

- Identify how a **variety** of different **materials** are used to **create everyday** objects.
- Compare **suitability** of **materials** for creating **specific objects**.
- Discuss the **properties** which make a **material** suited or unsuited to making specific objects.
- Explore language related to **squashing, bending, twisting and stretching**.
- Conduct a series of tests to **investigate stretchiness, rigidity and flexibility** of a variety of objects.
- As scientists we will draw **conclusions** based on **data** and **observations** using **evidence** to justify our ideas and scientific knowledge to explain our **findings**.

Science

'Materials - Water, Steam and Ice'

SPRING

1

Key learning this half term:

- Identify **states** of **materials**.
- Know that water is a **liquid** at room **temperature**.
- Learn that when water **cools** it changes into a **solid - ice**.
- Learn that when water **heats** up, it changes into a **gas - steam**.

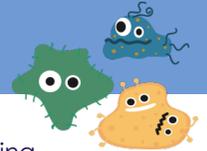


Science

'Animals Including Humans'

SUMMER

1



Key learning this half term:

- Understand that all **animals**, including **humans**, have **offspring** which **grow** into **adults**.
- Describe the **basic needs** of animals and humans in order for them to **survive**.
- Understand how being **hygienic** prevents the spread of **germs** and investigate how germs spread.
- Learn about different ways that people **exercise** and why it is important to exercise.
- Know the importance of **healthy eating** and which foods should be included in a **balanced diet**.



Science

'Electricity'

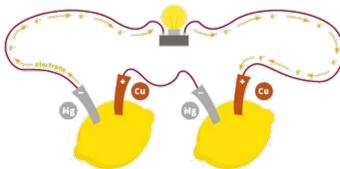


AUTUMN

2

Key learning this half term:

- Identify common **appliances** which use **electricity**.
- Describe the **dangers** associated with electricity.
- Make a simple **circuit**.
- Identify why some circuits work and others do not.
- Learn about appliances that use **batteries**.



Science

'Plants'

SPRING

2

Key learning this half term:

- Observe and describe how **seeds** and **bulbs** grow into mature **plants**.
- Find out and describe how plants need **water, light** and a suitable **temperature** to **grow** and stay healthy.
- Compare the **life cycle** of a variety of **plants** and **trees**.



Science

'Living Things - Habitats and Food Chains'

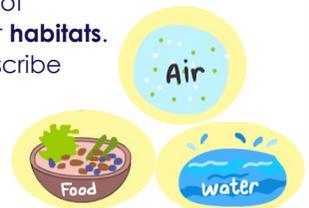
SUMMER

2



Key learning this half term:

- Explore and compare between **living, dead, and non living** things.
- Identify that most **living things** live in **habitats** to which they are suited.
- Describe how different **habitats** provide the basic needs of different kinds of **animals and plants**.
- Identify and name a variety of **plants and animals** and their **habitats**.
- Using simple **food chains** describe how animals obtain their **food** from other **plants and animals**.





Science Learning Journey 2020-21

Year 3

Science

'Rocks and Fossils'

AUTUMN

1

Key learning this half term:

- Recognise the different **properties** of **rocks**.
- Compare and **group** different **types** of rock.
- Discuss different ways that rock can be **transformed** into **soil**.
- Understand how **fossils** are formed.
- As scientists, we will be **recording** and **presenting data** in a variety of ways to **answer questions**.



Science

'Light'



SPRING

1



Key learning this half term:

- Recognise that **light** is needed in order to see things.
- Understand that **dark** is the absence of light.
- Notice that light is **reflected** from surfaces
- Recognise that light from the **sun** can be dangerous and that there are ways to **protect** ourselves.
- Recognise that **shadows** are formed when the **light** from a **light source** is blocked by an **opaque** object.
- Discover **patterns** in the way that the size of **shadows** change.



Science

'Animas Including Humans'

SUMMER

1

Key learning this half term:

- Understand and name the different **nutrients** and their associated **foods**.
- Understand that **animals** need the right **types** and **amount** of **nutrition**.
- Compare **nutrients** needed by **humans** to **nutrients** needed by another **animal**.
- Understand the **functions** of different **bones**.
- Understand how **muscles** help with **movement**.
- Explore the difference between the **skeletal system** and **muscular system** in **humans** to other **animals**.



Science

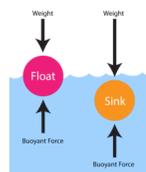
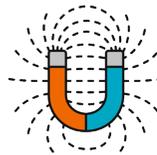
'Forces and Magnets'

AUTUMN

2

Key learning this half term:

- Compare** how things **move** on different **surfaces**.
- Recognise the difference between **contact forces** and **non contact forces**.
- Observe** how **magnets attract** or **repel**.
- Identify **materials** that are **magnetic**.
- Understand a variety of different **forces**.
- Describe **magnets** as having **two poles**.
- Make **predictions** about whether two **magnets** will **attract** or **repel**.
- Observe how **magnets attract** some **materials** and not others.
- Understand and **investigate buoyancy**.



Science

'Plants - Photosynthesis'

SPRING

2

Key learning this half term:

- Identify** and describe the functions of different parts of flowering plants: **roots, stem/trunk, leaves** and **flowers**.
- Explore the requirements of plants for life and **growth** (**air, light, water, nutrients**) and how they vary from one plant to another plant.
- Investigate** the way in which water is transported within plants.
- Explore the part that flowers play in the **life cycle** of flowering plants, including **pollination, seed formation** and **seed dispersal**.



Science

'Teeth and Eating'

SUMMER

2

Key learning this half term:

- Identify different types of teeth in humans, (**canine, incisors, premolars, molars**) and their functions.
- Describe how teeth and **gums** have to be cared for in order to keep them healthy.
- Learn about foods that can cause damage to teeth.
- Create a model of a tooth.
- Answer relevant questions.
- Conduct simple practical enquiries, comparative and fair test.





Science Learning Journey 2020-21

Year 4

Science

'States of Matter'

AUTUMN

1

Key learning this half term:

- Compare the properties of the different states **solids/liquids/gases**.
- Identify and **group** the different **states**.
- Observe **changes** in the different **states**.
- Set up simple practical and **comparative enquiries** and **conducting fair tests**.
- Understand and explain **evaporation** and **condensation**.
- **Investigate** the **factors** which **affect** the **rate** of **evaporation**.
- Understand and explain the different **stages** of the **water cycle**.



Science

'Sound'

SPRING

1

Key learning this half term:

- Identify how **sounds** are made with association to **vibrations**.
- Recognise that **vibrations** from **sounds** **travel** through a **medium** to the **ear**.
- Find **patterns** between the **pitch** of a **sound** and the **features** of the **object** that produced the **sound**.
- Find **patterns** between the **volume** of a **sound** and the **strength** of the **vibrations** that produce it.
- Recognise that **sounds** get **fainter** as the **distance** from a **sound source** increases.



Science

'Electricity'

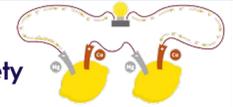


SUMMER

1

Key learning this half term:

- Understand the importance of **safety** when using **electrical components**.
- Correctly name the **components** in a **circuit** and use **components** to make successful **electric circuits**.
- Investigate **materials** that **conduct** electricity.
- Explore **materials** that are **insulators**.
- Communicate structures of **circuits** using drawings which show how the **components** are connected.
- Incorporate a **switch** into a **circuit** to turn it on/off.
- Connect a range of different **switches** identifying the parts that are **insulators** and **conductors**.
- Give reasons for choice of **materials** for making different parts of a **switch**.



Science

'Forces - Friction'

AUTUMN

2

Key learning this half term:

- To identify what is **friction**.
- To explore and explain friction in everyday life.
- To carry out a scientific enquiry on the effects of friction.
- To learn about **water resistance** and **upthrust** through investigation.
- To learn about **air resistance**.



Science

'Living Things and their Habitats'

SPRING

2

Key learning this half term:

- Recognise that living things can be **grouped** in a variety of ways.
- Explore and use **classification keys** to help group, **identify** and name a variety of living things in their local and wider **environment**
- Recognise that environments can **change** and that this can sometimes pose dangers to living things.



Science

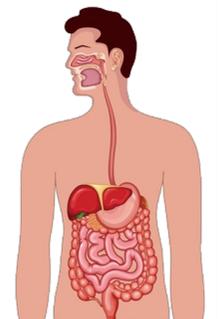
'Animals, Including Humans and Food Chains'

SUMMER

2

Key learning this half term:

- Identify the basic parts of the **digestive system**.
- Understand the **functions** of the **digestive organs**.
- Learn about the different **types** of **teeth** within a **human mouth** and understand their **functions**.
- Understand **food chains**.
- Learn to correctly identify **producers**, **predators** and **prey**.





Science Learning Journey 2020-21

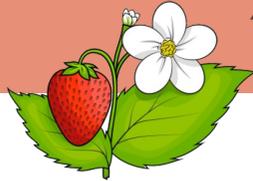
Year 5

Science

'Life of Animals and Plants'

AUTUMN

1



Key learning this half term:

- Describe the **differences** in the **life cycles** of a **mammal**, an **amphibian**, an **insect** and a **bird**.
- Describe the **life process** of **reproduction** in some **plants** and **animals**.
- Describe the **changes** of a **human** from **birth** through to **old age**.
- Understand and use key **scientific words** such as: **life cycle**, **reproduce**, **fertilise**, **live young**, **metamorphosis**, **plantlets**, **runners**, **bulb**, **cuttings**.



Science

'Materials - Properties and Changes'

SPRING

1



Key learning this half term:

- Compare** and **group** materials by **properties**. For example: **hardness**, **solubility**, **transparency**.
- Dissolve** materials into a **liquid** to form a **solution**.
- Apply knowledge of **solids**, **liquids** and **gases** to **filter**, **sieve** and **evaporate** to **separate** mixed materials.
- Conduct **comparative** and **fair tests**.
- Use **evidence** to explain particular uses of **everyday materials**, including **metals**, **wood** and **plastic**.
- Demonstrate that **dissolving**, **mixing** and **changes of state** are **reversible changes**.
- Explain that some changes result in the formation of **new materials**, which can be **irreversible**.

Science

'Animals and Humans - Birth and Growth'

SUMMER

1

Key learning this half term:

- Describe the differences in the **life cycles** of a **mammal**, an **amphibian**, an **insect** and a **bird**
- Describe the life process of reproduction in some



Science

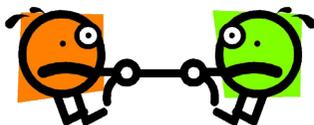
'Forces'

AUTUMN

2

Key learning this half term:

- Demonstrate the effects of **gravity** acting on unsupported objects.
- Identify **balanced** and **unbalanced** force.
- Investigate how **levers** work and explore how the position of the **fulcrum**, **load** and **effort** impacts on use
- Investigate how **pulleys** and **gears** work in changing the effort required.
- Create a **force meter** using simple classroom equipment.
- Identify scientific evidence that has been used to support or refute ideas or arguments.



Science

'Gases Around Us'

SPRING

2



Key Learning this half term:

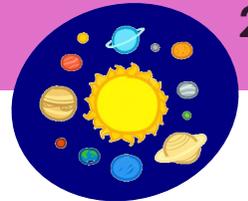
- Understand that **air** takes up space, has weight, and is matter composed of **particles** too small and too spread apart to see.
- Learn about the uses of important **gases** and where gases are found.
- Understand that **liquids evaporate** and form **gases** which flow easily from place to place.
- Learn that **gases** are different from **solids** and **liquids** in terms of how they do not maintain their shape and volume.
- Explore **reversible changes** such as **evaporation** and **condensation**.
- Explain phenomena related to air in terms of scientific knowledge and understanding.

Science

'Earth and Space'

SUMMER

2



Key Learning this half term:

- Compare the **heliocentric** and **geocentric** model of the **solar system**.
- Learn the order of **planets** from the **sun** and research their **orbits**.
- Compare the **orbit** of the **eight planets**.
- Examine the **phases** of the **moon**.
- Recognise that **scientific ideas change** and **develop over time**.
- Understand that the **Sun**, **Earth** and **Moon** are approximately spherical bodies.
- Understand how **day** and **night** occur.
- Understand the Earth rotation on its **axis**.
- Understand the **scientific factors** which makes it seem as if the sun is moving in the sky.



Science Learning Journey 2020-21

Year 6

Science

AUTUMN

'Evolution and Inheritance'

1

Key learning this half term:

- Discuss the **theory of evolution**.
- Understand how **fossils** are formed.
- Recognise how the production of **offspring** can produce **adaptations**.
- Identify how various **animals** and **plants** have **adapted** to their **environments**.
- As scientists we will draw **conclusions** based on **data** and **observations** using **evidence** to **justify** our **ideas** and **scientific knowledge** to explain our **findings**.



Science

SPRING

'Animals Including Humans'

1

Key learning this half term:

- Identify and name the main parts of the human **circulatory system**.
- Understand the **circulatory system** and the functions of the **heart**, **blood vessels** and the **blood**.
- Understand the impact of **exercise** on the **body**.
- Research the impact of **diet**, **exercise**, and **lifestyle** on the **body**.
- Compare how **nutrients** and **water** are transported in **humans** with other **animals**.



Science

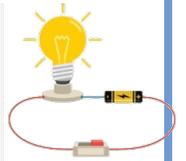
SUMMER

'Electricity'

1

Key learning this half term:

- Use **symbols** to illustrate simple **circuits**.
- Create simple **functioning circuits** using basic **electrical components**.
- **Problem solve** in order to **repair circuits** which are not working.
- Investigate what affects **brightness** or **volume** of a **component**.
- Understand and apply knowledge of how to use **electricity safety** and **responsibly**.



Science

AUTUMN

'Living Things and their Habitats'

2

Key learning this half term:

- Describe how living things are **classified** into broad groups according to common observable **characteristics** and based on **similarities** and **differences**, including microorganisms, plants and animals.
- Give reasons for classifying **plants** and **animals** based on specific characteristics.
- Explore **classification systems** e.g. Linnaeus, understanding that they group according to **similarities & differences**.
- Design a **classification key** for birds, bees or butterflies.
- Explore 4 different **micro-habitats**.



Science

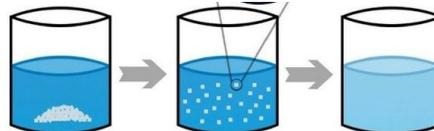
SPRING

'Dissolving'

2

Key Learning this half term:

- Identify and describe what happens when **dissolving** occurs in everyday situations;
- Identify factors which affect dissolving.
- Describe how to **separate mixtures** and **solutions** into their **components**.
- Identify **reversible** and **irreversible** changes.
- Investigate dissolving by carrying out **fair tests**.



Science

SUMMER

'Light and Shadows'

2

Key learning this half term:

- Explain how we know that **light travels** in **straight lines**.
- Describe how light travels in straight lines past **translucent** or **opaque** objects to form a **shadow** of the same shape.
- Predict and explain with diagrams or models, how the path of **light rays** can be directed by **reflection** to be seen.
- Predict and explain how the shape and size of **shadows** can be varied.

