

Block	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Block 1	Humans (Seasonal Changes)	Living things and their habitats	Rocks and Soils	Sound		Animals including humans - Circulatory
Block 2	Animals (Seasonal Changes)	Animals including Humans	Forces and magnets	States of matter	Earth and Space	Light
Block 3	Materials (Seasonal Changes)	Everyday Materials	Light		Forces	Electricity
Block 4	Materials (Seasonal Changes)	Everyday Materials	Plants	Animals including humans	Properties and changes of materials	Evolution and Inheritance
Block 5	Plants (Seasonal Changes) Peppers, Tomatoes,	Plants		Electricity	Living things and their habitats	Living things and their habitats
Block 6	Plants (Seasonal Changes)	Plants	Animals including humans	Living things and their habitats	Animals including humans - RSE Focus	Animals including humans - RSE Focus

Science - Year 1

Seasonal Changes (taught throughout the year)

- Observe changes across the four seasons
- Observe and describe weather associates with the seasons and how day length varies
- I can observe and describe how day length varies.
- I can make tables and charts about weather.

Throughout all strands - Working Scientifically

- I can ask simple questions.
- I can observe using simple equipment.
- I can perform simple tests.
- I can identify and classify.
- I can gather and record data to answer questions.
- I can use observations and ideas to suggest answers to questions.

Comparative Tests Identify and Classify Observation over time Pattern Seeking Research

Block 1

Subject/Conceptual knowledge/skills: Animals including Humans (focus on Humans)

LEAPS:

- I can identify, name, draw and label the basic parts of the human body.
- I can say which part of the body is associated with each sense.
- I can use my senses to compare different textures, sounds and smells.

Key Questions

Which of our senses is the most accurate at identifying food?

Which parts of our body can feel an object most accurately?

Can we hear better without our using our sight?

Scientist:

Comparative tests

Is our sense of smell better when we cannot see?

Identify and Classify

How can we sort the different children in our class?

Block 2

Subject/Conceptual knowledge/skills: Animals including Humans (focus on Animals)

LEAPS:

- Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.
- Identify and name a variety of common animals that are carnivores, herbivores and omnivores
- Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- I can explore and answer questions about animals and their habitats.
- I can take care and return animals from the local habitats.

Sticky Knowledge

There are many different animals with different characteristics.

Animals have senses to help individuals survive.

When animals sense things they are able to respond.

Animals need food to survive.

Animals need a variety of food to help them grow, repair their bodies, be active and stay healthy.

Block 3

Subject/Conceptual knowledge/skills: Everyday Materials (STEM Week)

LEAPS:

- I can distinguish between an object and material.
- I can name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.
- I can describe the simple physical properties of everyday materials.
- I can compare and group a variety of materials based on their properties.
- I can raise questions about everyday materials

Sticky Knowledge

There are many different materials that have different describable and measurable properties.

Materials that have similar properties are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass).

The properties of a material determine whether they are suitable for a purpose.

Key Questions

Which fabric would make the softest blanket?

What are the names of all the body parts?

Observation over time

How does my height change over the year?

Pattern Seeking

Do the tallest children have the biggest feet?

Do boys or girls have the longest arms?

Research

How does out tongue taste things?

Vocabulary:

Head, body, eyes, ears, mouth, teeth, leg, arm, hand, fingers, head, neck, foot, toes.

Big Question

What are animals like?

Key Questions

What do animals eat?

Do all animals eat the same food?

Which of our senses is the most accurate at identifying food?

Do all animals hunt?

Why are animals different colours and patterns?

Scientist

Chris Packham (Animal Conservationist)



Identify and Classify

How can we organise all of the zoo animals?

How have you sorted the animals?

Observation over time

How do birds create a nest?

Pattern Seeking

Do all animals have the same senses as humans?

Research

How does out tongue taste things?

Vocabulary:

Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves

The baby has spilt her drink, which material would absorb the drink the best?

Which material could make the best waterproof hat for the teacher at playtime?

Big Question

What are the things I use made from?

Comparative Tests

Which materials are the most flexible?

Which materials are the most absorbent?

Identify and Classify

We need to choose a material to make an umbrella. Which materials are waterproof?

Observation over time

What happens to materials over time if we bury them in the ground?

What happens to shaving foam over time?

Pattern Seeking

Is there a pattern in the types of materials that are used to make objects in school?

Research

How are bricks made?

Which materials can be recycled?

Scientist

William Addis - (Inventor of the toothbrush)

Vocabulary:

Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through

<p>Block 4 Subject/Conceptual knowledge/skills: Everyday Materials</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • I can distinguish between an object and material. • I can name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. • I can describe the simple physical properties of everyday materials. • I can compare and group a variety of materials based on their properties. • I can raise questions about everyday materials <p>Vocabulary: Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay, hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see through, not see through</p>	<p>Block 5 Subject/Conceptual knowledge/skills: Plants (trees)</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • I can identify a variety of evergreen and deciduous trees. • I can identify and describe the basic structure of a variety of common flowering plants including trees. • I can observe the growth of flowers and vegetables. <p>Sticky Knowledge Trees grow from seeds. Trees need light and water to grow and survive. Trees are important. Some trees lose their leaves while others don't.</p> <p>Key Questions How do plants grow? What do plants need to grow? Do all plants need water? Are all plants green? Why do seeds look different? Can plants grow as big in the shade? What is the biggest/smallest/smelliest (etc) tree/flower/plant on the planet?</p> <p>Scientist Beatrix Potter (Author & Botanist)</p> <p>Comparative tests Which tree has the biggest leaves?</p> <p>Identify and Classify How can we sort the leaves that we collected on our walk?</p> <p>Observation over time How does a tree change over the year? (Seasonal Changes)</p> <p>Pattern Seeking Do trees with bigger leaves lose their leaves first in autumn? (Seasonal Changes)</p> <p>Research What is the most common British tree?</p>	<p>Block 6 Subject/Conceptual knowledge/skills: Plants (flower/vegetables)</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • I can identify and name a variety of common plants. • I can identify and name a variety of wild plants. • I can identify and describe the basic structure of a variety of common flowering plants including trees. • I can observe the growth of flowers and vegetables. <p>Sticky Knowledge Plants grow from seeds/bulbs Plants need light and water to grow and survive. Plants are important. We can eat lots of plants.</p> <p>Big Question How many types of plants are there?</p> <p>Comparative tests Which type of compost grows the tallest sunflower?</p> <p>Identify and Classify Can I observe and identify different common and wild flowers?</p> <p>Observation over time How does a daffodil bulb change?</p> <p>Pattern Seeking Is there a pattern in where we find moss growing in the school grounds?</p> <p>Research What is the most common British plants and where can we find them?</p> <p>Vocabulary: Plants, Flowers, Petal, Leaf, Stem, Root, Petal, Seeds, Fruit, Bud, Bramble, Bush, Berry, Water, Sunlight, Soil</p>
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Vocabulary:

plants, trees, leaf, leaves, trunk, root, branch, bark,
blossom, water, sunlight, soil

Seasonal Changes (taught throughout the year)


- I can use my local environment throughout the year to observe how different plants grow.

Block 1
Subject/Conceptual knowledge/skills: Living things and their habitats.

LEAPS:

- I can identify that most living things live in habitats to which they are suited.
- I can describe how different habitats provide for basic needs of different animals and plants.
- I can identify and name a variety of plants and animals in their habitats, including micro-habitats.
- I can describe how animals obtain their food from plants and other animals.
- I can understand a simple food chain and identify different sources of food.

Key Questions
 How do animals eat?
 Do all animals eat the same thing?
 Which animals hunt, and which animals are hunted?
 Why?
 What animals live in our school environment?
 How are animals and plants 'adapted' to live in their habitats?
 Why do animals and plants like to live in different places?
 How do seasons affect our animals and plants?
 Which animals hibernate and why?
 Why do snails hibernate, but slugs do not?
 How do habitats change over our school year?

Scientist- Liz Bonnin (Biologist) 

Comparative tests
 Which pets are the easiest to look after?
Identify and Classify

Block 2
Subject/Conceptual knowledge/skills: Animals including humans.

LEAPS:

- I can notice animals, including humans have offspring which grow into adults.
- I can describe the importance for humans to exercise.
- I can describe the importance of eating the right amounts of different food.
- I can describe the importance of hygiene for humans.

Sticky Knowledge
 Animals move in order to survive.
 Different animals move in different ways to help them survive.
 Exercise helps keep animals and humans body healthy and increases the chances of survival.
 All animals eventually die.
 Animals and humans grow until maturity.
 Once at maturity animals and humans don't grow any larger.

Key Questions
 How long do or should pets live for?
 Do animals grow and live in the same way?
 Do bigger animals live longer?
 Why are we all different heights?
 How and why do we grow and change?

Big Question
 Do living things change or stay the same?

Scientist
 Robert Winston (Human Scientist)
 Steve Backshall (Biologist)

Block 3
Subject/Conceptual knowledge/skills: Everyday Materials

LEAPS:
Materials:

- I can identify and compare which everyday material can be used for a particular use. Wood, metal, plastic, rock, paper, cardboard.
- I can investigate how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.
- I can identify and discuss the uses of different everyday materials.
- I know that materials can be more than one thing. Metal - coins, cars, cans.
- I know that the same objects can be made from different materials i.e. spoon - plastic, wood, metal.

Working scientifically:

- I can perform simple tests.
- I can identify and classify.
- I can observe using simple equipment.
- I can gather and record data to answer questions.
- I can use observations and ideas to suggest answers to questions.

Vocabulary:
 opaque, transparent, translucent, reflective, flexible, rigid, waterproof, recyclable, material, natural, man-made, purpose

<p>How would you group these animals based on what habitat you would find them in?</p> <p>Observation over time</p> <p>How does our class pond change over the year?</p> <p>Pattern Seeking</p> <p>Do trees with bigger leaves lose their leaves first in autumn?</p> <p>Research</p> <p>What is the most common British tree?</p> <p>Vocabulary:</p> <p>Habitat, micro-habitats, shelter, suitable, basic needs, food, water, food chain, energy, pond, woodland, rainforest, meadow, desert</p>	<p>Comparative tests</p> <p>Do bananas make us run faster?</p> <p>Are amphibians more like reptiles or fish?</p> <p>Identify and Classify</p> <p>Which offspring belong to which animal?</p> <p>How can you group objects to show which are living, dead or have never been alive?</p> <p>Observation over time</p> <p>How does a tadpole change over time?</p> <p>How much food and drink do I have over a week?</p> <p>Pattern Seeking</p> <p>Which age group of children wash their hands the most in a day?</p> <p>Research</p> <p>What food do you need in a healthy diet and why?</p> <p>What do you need to do to look after a pet to keep it healthy?</p> <p>Vocabulary:</p> <p>Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves</p>	
<p>Block 4</p> <p>Continued from Block 4</p>	<p>Block 5</p> <p>Subject/Conceptual knowledge/skills: Plants</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • I can find out and describe how plants need water, light, and a suitable temperature to grow and stay healthy. • I can use my local environment throughout the year to observe how different plants grow. • I can observe and record with some accuracy, the growth of a variety of plants as they change over time from seed or bulb. • I can observe and describe how seeds and bulbs grow into mature plants. • I can observe similar plants during different stages of growth. <p>Working scientifically:</p>	<p>Block 6</p> <p>Subject/Conceptual knowledge/skills: Plants</p> <p>LEAPS:</p> <p>Plants:</p> <ul style="list-style-type: none"> • I can observe similar plants during different stages of growth. • I can set up comparative tests - plants need light and water to stay healthy. <p>Working Scientifically:</p> <ul style="list-style-type: none"> • I can gather and record data to answer questions. • I can perform simple tests. <p>Vocabulary:</p> <p>Light, temperature, water, soil, nutrients, seed, bulb, germinate, seedlings, growth, roots, stem, leaf, petal</p>

I can use observations and ideas to suggest answers to questions.

I can gather and record data to answer questions.

Vocabulary:

Light, temperature, water, soil, nutrients, seed, bulb, germinate, seedlings, growth, roots, stem, leaf, petal

Block 1

Subject/Conceptual knowledge/skills: Rocks and Soils

LEAPS:

- I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
- I can describe in simple terms how fossils are formed.
- I can explore how fossils are made and which types of animals would be found in sedimentary rock.
- I can recognise that soils are made from rock and organic matter.
- I can explore rocks and soils from the local environment.
- I can explore rocks and observe how they change over time.
- I can classify rocks based on if they have grains or crystals.
- I can explore different rocks and soils finding similarities and differences.
- I can investigate what happens to rocks when they have been rubbed together or change when in water.
- I can raise and answer questions about the way soils are formed.

Key Questions

Soils

- How are the soils different?
- Which do you think has best drainage?
- Which is more likely to lead to flooding?
- How many soil types have we found?
- Where might you find more?
- How might the soil be different in different countries?

Rocks

- What rock is best for a kitchen chopping board? What might be the issues with various materials and what they must withstand?
- What types of rocks are there?

Block 2

Subject/Conceptual knowledge/skills: Forces and Magnets

LEAPS:

- I notice that some forces need contact between two objects, but magnetic forces can act at a distance.
- I can observe how magnets attract or repel each other and attract some materials and not others.
- I can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
- I can describe magnets as having two poles.
- I can predict whether two magnets will attract or repel each other, depending on which poles are facing.
- I can observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary.
- I can explore the strength of magnets and finding a fair way to test them.
- I can sort materials into those that are magnetic and those that are not.

Sticky Knowledge

Magnets exert attractive and repulsive forces on each other.
 Magnets exert non-contact forces, which work through some materials.
 Magnets exert attractive forces on some materials.
 Magnet forces are affected by magnet strength, object mass, distance from object and object material.

Key Questions

- What are magnetic materials? How can we find out?
- Can I make a magnetic material non-magnetic?
- How far away does a magnet have to be before it attracts a magnetic material?

Block 3

Subject/Conceptual knowledge/skills: Light

LEAPS:

- Recognise that they need light in order to see things and that dark is the absence of light.
- I can notice that light is reflected from surfaces.
- I can recognise that light from the sun can be dangerous and should protect my eyes.
- I can recognise that shadows are formed when the light from a light source is blocked by an opaque object.
- I can find patterns in the way that the size of shadows change.

Scientist: Dr Willie Hobbs Moore



Vocabulary:

Light, light source, dark, absence of light, transparent, translucent, opaque, shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous.

<p>How do rocks change?</p> <p>Compost What would grow best in your soil? Why do you think worms are important to the creation of soil? How can we use composting to make our own soil? Does it currently look like real soil? How long do you think this process will take and why?</p> <p>Fossils How are fossils created? Why do fossils help us find out about historical events? If you could fossilise an object what would it be?</p> <p>Scientist: Mary Anning</p> <p>Comparative tests How does adding different amounts of sand to soil affect how quickly water drains through it? Which soil absorbs the most water?</p> <p>Identify and Classify Can you use the identification key to find out the name of each of the rocks in your collection?</p> <p>Observation over time How does tumbling change a rock over time? What happens when water keeps dripping on a sandcastle?</p> <p>Pattern Seeking Is there a pattern in where we find volcanos on planet Earth?</p> <p>Research Who was Mary Anning and what did she discover?</p> <p>Vocabulary Igneous, sedimentary, metamorphic, permeable, impermeable, granite, sandstone, marble, chalk, slate, limestone, concrete, brick, properties, fossils, ammonite, sediment, minerals, mould, cast</p>	<p>How far away can the magnetic attraction between two magnets be experienced? How is magnetic attraction or repulsion affected by materials? Are bigger magnets stronger?</p> <p>Big Question How can we move magnets?</p> <p>Scientist: William Gilbert (Theories of Magnetism)</p> <p>Comparative tests How does the mass of an object affect how much force is needed to make it move? Which magnet is stronger?</p> <p>Identify and Classify Which materials are magnetic?</p> <p>Observation over time If we magnetise a pin how long does it last?</p> <p>Pattern Seeking Does the size and shape of a magnet affect how strong it is?</p> <p>Research How does a compass work? How has your ideas about forces changed over time?</p> <p>Vocabulary: Push, pull, force, friction, magnet, magnetic pole, north, south, magnetic field, horseshoe magnet, bar magnet, ball magnet, super magnet, attract, repel</p>	
<p>Block 4 Subject/Conceptual knowledge/skills: Plants</p>	<p>Block 5 Subject/Conceptual knowledge/skills:</p>	<p>Block 6 Subject/Conceptual knowledge/skills: Animals Including Humans</p>

<p>LEAPS:</p> <ul style="list-style-type: none"> • I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. • I can explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. • I can investigate the way in which water is transported within plants • I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. • I can compare the effect of different factors on plant growth (the amount of light/fertiliser). • I can observe the plant life cycle. <p>Vocabulary: Flower, stem, roots, leaves, stigma, stamen, pollination, germination, nutrients, water, light,</p>	<p>LEAPS:</p> <p>Vocabulary:</p>	<p>LEAPS:</p> <ul style="list-style-type: none"> • I can identify that humans need the right types of nutrition. • I can identify that animals need the right types of nutrition. • I know that animals and humans cannot make their own food. • I can identify that humans get nutrition from what they eat. • I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. • I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. • I can identify that humans have muscles for support, protection and mainly movement. <p>Vocabulary: Nutrition, nutrients, healthy, skeleton, skull, ribs, spine, muscles, joints, vertebrate, invertebrate, support, protect, carbohydrates, protein, fats, vitamins, minerals, sugars</p>
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Science - Year 4		
<p>Block 1 Subject/Conceptual knowledge/skills: Sound</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • I can identify how sounds are made, associating some of them with something vibrating. • I can recognise that vibrations from sounds travel through a medium to the ear. 	<p>Block 2 Subject/Conceptual knowledge/skills: States of Matter</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • I can compare and group materials together, according to whether they are solids, liquids or gases. • I can observe that some materials change state when they are heated or cooled, and measure 	<p>Block 3 Subject/Conceptual knowledge/skills:</p>

- I can find patterns between the pitch of a sound and features of the object that produced it.
- I can find patterns between the volume of a sound and the strength of the vibrations that produced it.
- I can recognise that sounds get fainter as the distance from the sound source increases.
- I can investigate how pitch and volume can be altered in a variety of ways.

Key Questions

How can you change the volume of a sound?

How does the size of an ear trumpet affect the volume of sound detected?

How does the type of material affect how well it blocks a sound?

How does thickness of material affect how well it blocks a sound?

Which materials vibrate better and produce louder sounds?

Can we identify any patterns?

Which materials make the best string telephone components? (tin cans, paper cups, plastic cups, wire, cable, string, plastic or elastic – predict and test)

How does length of the tube (when making a straw oboe) affect the pitch and volume?

Can you predict the relative pitch of tuning forks from the patterns of ripples they make in the water?

Comparative tests

How does the volume of a drum change as you move further away from it? How does the length of a guitar string/tuning fork affect the pitch of the sound? Are two ears better than one?

Identify and Classify

Which material is best to use for muffling sound in ear defenders?

Observation over time

When is our classroom the quietest?

Pattern Seeking

or research the temperature at which this happens in degrees Celsius (°C)

- I can identify the part played by evaporation and condensation in the water cycle.
- I can associate the rate of evaporation with temperature.
- I can explore a variety of everyday materials and develop simple definitions (solids, liquids and gases)
- I can investigate water as a solid, liquid and gas.
- I can explore the effect of heat on butter or chocolate.

Working Scientifically:

- I can ask relevant questions and use different types of scientific enquiries to answer them.
- I can set up simple practical enquiries, comparative and fair tests.
- I can use straightforward scientific evidence to answer questions to support their findings
- I can identify differences, similarities or changes related to simple scientific ideas and processes
- I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.
- I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

Vocabulary: Solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle.

<p>Is there a link between how loud it is in school and the time of day? If there is a pattern, is it the same in every area of the school?</p> <p>Research Do all animals have the same hearing range?</p> <p>Scientists: Aristotle (Sound Waves) Galileo Galilei (Frequency and Pitch of Sound Waves) Alexander Graham Bell (Invented the Telephone)</p> <p>Working Scientifically:</p> <ul style="list-style-type: none"> • I can ask relevant questions and use different types of scientific enquiries to answer them. • I can identify differences, similarities or changes related to simple scientific ideas and processes • I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. • I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. <p>Vocabulary Sound, source, vibrate, vibration, travel, pitch (high, low), volume, faint, loud, insulation</p>		
<p>Block 4 Subject/Conceptual knowledge/skills: Animals including Humans</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • I can describe the simple functions of the basic parts of the digestive system in humans. • I can identify the different types of teeth in humans and their simple functions. • I can construct and interpret a variety of food chains, identifying producers, predators and prey. • I can compare teeth of carnivores and herbivores and suggest why they are different. 	<p>Block 5 Subject/Conceptual knowledge/skills: Electricity</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • I can identify common appliances that run on electricity. • I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. • I can identify whether or not a lamp will light in a simple series circuit, based on whether or 	<p>Block 6 Subject/Conceptual knowledge/skills: Living things and their habitats</p> <p>LEAPS:</p> <p>Vocabulary:</p> <ul style="list-style-type: none"> • I can recognise that living things can be grouped in a variety of ways. • I can identify a variety of living things from the local and wider environment. • I can use classification keys to help group a variety of living things from the local and wider

<ul style="list-style-type: none"> • I can find out what damages teeth and how to look after them. • I can compare teeth of carnivores and herbivores and suggesting why they are different. • I can find out what damages teeth and how to look after them. <p>Working Scientifically I can set up simple practical enquiries, comparative and fair tests. I can use straightforward scientific evidence to answer questions to support their findings I can identify differences, similarities or changes related to simple scientific ideas and processes I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. I can report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Vocabulary: Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain</p>	<p>not the lamp is part of a complete loop with a battery.</p> <ul style="list-style-type: none"> • I can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. • I can recognise some common conductors and insulators, and associate metals with being good conductors. • I can draw simple series circuits as a pictorial representation. <p>Working Scientifically: I can set up simple practical enquiries, comparative and fair tests. I can use straightforward scientific evidence to answer questions to support their findings Vocabulary: Electricity, electrical appliance/device, mains, plug, electrical circuit, complete circuit, component, cell, battery, positive, negative, connect/connections, loose connection, short circuit, crocodile clip, bulb, switch, buzzer, motor, conductor, insulator, metal, non-metal, symbol</p>	<p>environment. (animals, flowering plants and non-flowering plants).</p> <ul style="list-style-type: none"> • I can recognise that environments can change and sometimes pose dangers to living things. • I can raise and answer questions that help me to identify and study plants and animals in their habitats. • I can identify how habitats change throughout the year. <p>Key Vocabulary: Classification, classification keys, environment, habitat, human impact, positive, negative, migrate, hibernate</p>
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Science- Year 5		
<p>Block 1 Subject/Conceptual knowledge/skills:</p> <p>LEAPS:</p> <p>Vocabulary:</p>	<p>Block 2 Subject/Conceptual knowledge/skills: Earth and Space</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system. 	<p>Block 3 Subject/Conceptual knowledge/skills: Forces</p> <p>LEAPS:</p> <ul style="list-style-type: none"> • Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.

	<ul style="list-style-type: none"> • I can describe the movement of the Moon relative to the Earth. • I can describe the Sun, Earth and Moon and approximately spherical bodies. • I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. • I can explain day and night using models of the Sun and Earth. • I know that the Sun is a star at the centre of the solar system. • I know that the solar system has eight planets and can name them • I know that the moon is a celestial body. <p>Scientist: Dr Neil deGrasse Tyson</p> <p>Working scientifically:</p> <ul style="list-style-type: none"> • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Identifying scientific evidence that has been used to support or refute ideas or arguments. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Using test results to make predictions to set up further comparative and fair tests. <p>Vocabulary: Earth, Sun, Moon, (Mercury, Jupiter, Saturn, Venus, Mars, Uranus, Neptune) spherical, solar system, rotates, star, orbit, planets</p>	<ul style="list-style-type: none"> • Recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect. • I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces. • I can explore falling objects and raise questions about air resistance. • I experience forces that make things begin to get faster or slow down. • I can explore the effects of friction on movement. • I can explore the effects of levers, pulleys and simple machines on movement. • I can research the work of scientists such as Galilei and Isaac Newton. <p>Working scientifically:</p> <ul style="list-style-type: none"> • Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. • Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. • Identifying scientific evidence that has been used to support or refute ideas or arguments. • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations • Using test results to make predictions to set up further comparative and fair tests. <p>Vocabulary: Force, gravity, Earth, air resistance, water resistance, friction, mechanisms, simple machines, levers, pulleys, gears.</p>
Block 4	Block 5	Block 6

Subject/Conceptual knowledge/skills: Properties and changes of materials

LEAPS:

- I can compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.
- I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.
- I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.
- I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.
- I can demonstrate that dissolving, mixing and changes of state are reversible changes.
- I can explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.
- I can explore reversible and non-reversible changes.
- I can investigate how chemist create new materials

Working scientifically:

- Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

Subject/Conceptual knowledge/skills: Living things and their habitats

LEAPS:

- 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.
- I can study and raise questions about my local environment throughout the year.
- I can observe life cycle changes in a variety of things such as plants, flower border and animals.
- I can find out about the work of naturalists and animal behaviourists.
- I can find out about different types of reproduction including sexual and asexual reproduction in plants and sexual reproduction in animals.

Working scientifically:

- Children independently ask scientific questions. This may be stimulated by a scientific experience or involve asking further questions based on their developed understanding following an enquiry.
- Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms

Vocabulary:

Subject/Conceptual knowledge/skills: Animals including humans

LEAPS:

- I can describe the changes as humans develop to old age.
- I can draw a timeline to indicate the stages of growth and development in humans.
- I know about the changes experienced in puberty.
- I can research the gestation periods of other animals and compare them to humans.

Vocabulary:

Puberty: the vocabulary to describe sexual characteristics

<ul style="list-style-type: none">• Identifying scientific evidence that has been used to support or refute ideas or arguments.• Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations• Using test results to make predictions to set up further comparative and fair tests. <p>Vocabulary: Thermal/electrical insulator/conductor, change of state, mixture, dissolve, solution, soluble, insoluble, filter, sieve reversible/non-reversible change, burning, rusting, new material</p>	<p>Life cycle, reproduce, sexual, sperm, fertilises, egg, live young, metamorphosis, asexual, plantlets, runners, bulbs, cuttings.</p>	
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Block 1 - Circulatory System

Subject/Conceptual knowledge/skills:

Animals including Humans

LEAPS:

- I can identify and name the main parts of the human circulatory system.
- I can describe the functions of the heart, blood vessels and blood.
- I can recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.
- I can describe the ways in which nutrients and water are transported within animals, including humans.
- I can explore questions that I ask about the circulatory system.
- I can explore the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.

Key Questions

Why do we need oxygen?

How do we breathe?

Do fish and plants breathe?

Do all living things need oxygen?

How does the size of a person's lungs affect their lung capacity?

Are there ways to increase/decrease our lung capacity? Is lung capacity fixed?

Why do we have blood?

How does our heart work?

How does size of muscle affect our pulse rate?

How does exercise effect our pulse rate?

How might the circulatory system of an elephant, a hummingbird, or a polar bear differ?

Is the air you breathe out, the same as that you breathe in?

Comparative tests

Block 2 - Light

Subject/Conceptual knowledge/skills:

LEAPS:

- Recognise that light appears to travel in straight lines.
- I can use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.
- I can explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.
- I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
- I can investigate the use of mirrors i.e. rear view mirror in a car, a periscope.

Vocabulary:

Light, light source, dark, absence of light transparent translucent opaque, Shiny, matt, surface, shadow, reflect, mirror, sunlight, dangerous. straight lines, , light rays.

Block 3 - Electricity

Subject/Conceptual knowledge/skills:

LEAPS:

- Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.
- I can compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.
- I can use recognised symbols when representing a simple circuit in a diagram.
- I can construct simple series circuits to answers questions about different components.
- I can construct a simple series circuit to investigate real life circuits like burglar alarms.

Vocabulary:

Circuit, complete circuit, circuit diagram, circuit symbol
Cell, battery, bulb, buzzer, motor, switch, Voltage
Brightness, Volume, Danger, Electrical safety

<p>How does the length of time we exercise for affect our heart rate? Can exercising regularly affect your lung capacity? Which type of exercise has the greatest effect on our heart rate?</p> <p>Identify and Classify Which organs of the body make up the circulation system, and where are they found?</p> <p>Observation over time How does my heart rate change over the day? How much exercise do I do in a week?</p> <p>Pattern Seeking Is there a pattern between what we eat for breakfast and how fast we can run?</p> <p>Research How have our ideas about disease and medicine changed over time? How do our choices affect how our bodies work?</p> <p>Scientist: Leonardo Di Vinci (Anatomy)</p> <p>Vocabulary Heart, pulse, rate, pumps, blood, blood vessels transported, lungs, Oxygen, Carbon dioxide nutrients Water, muscles, cycle, circulatory system, diet Exercise, drugs, lifestyle</p>		
<p>Block 4 - STEM Week - Textiles and Electricity Evolution and Inheritance. Subject/Conceptual knowledge/skills:</p> <p>LEAPS:</p> <ul style="list-style-type: none"> I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 	<p>Block 5 - Living things and their habitats Subject/Conceptual knowledge/skills:</p> <p>LEAPS:</p> <ul style="list-style-type: none"> I can describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. I can give reasons for classifying plants and animals based on specific characteristics. I can classify different animals including invertebrates. I can research the work by Carl Linnaeus. 	<p>Block 6 - Animals Including Humans RSHE (SCARF) Subject/Conceptual knowledge/skills:</p> <p>Growing and Changing - SCARF</p> <p>LEAPS:</p> <ul style="list-style-type: none"> Recognise some of the changes they have experienced and their emotional responses to those changes; Suggest positive strategies for dealing with change; Identify people who can support someone who is dealing with a challenging time of change. Understand that fame can be short-lived; Recognise that photos can be changed to match society's view of perfect;

- I can research how living things have changed on Earth.
- I can understand that some characteristics are passed down to the offspring.
- I can research how a variation in offspring over time can make animals more or less likely to survive.
- I can research the work of Mary Anning and Charles Darwin or others.

Vocabulary:

Offspring, sexual reproduction, vary, characteristics suited, adapted, environment, inherited, species, fossils

- I can use a classification system or key to identify some animals and plants in the immediate environment.
- I can research unfamiliar animals and plants from a broad range of habitats.

Vocabulary:

Vertebrates, fish, amphibians, Reptiles, birds, mammals
 invertebrates, insects, spiders, snails, worms,
 flowering
 non-flowering

- Identify qualities that people have, as well as their looks.
- Define what is meant by the term stereotype;
- Recognise how the media can sometimes reinforce gender stereotypes;
- Recognise that people fall into a wide range of what is seen as normal;
- Challenge stereotypical gender portrayals of people.
- Understand the risks of sharing images online and how these are hard to control, once shared;
- Understand that people can feel pressured to behave in a certain way because of the influence of the peer group;
- Understand the norms of risk-taking behaviour and that these are usually lower than people believe them to be.
- Define the word 'puberty' giving examples of some of the physical and emotional changes associated with it;
- Suggest strategies that would help someone who felt challenged by the changes in puberty;
- Understand what FGM is and that it is an illegal practice in this country;
- Know where someone could get support if they were concerned about their own or another person's safety.
- Explain the difference between a safe and an unsafe secret;
- Identify situations where someone might need to break a confidence in order to keep someone safe.
- Identify the changes that happen through puberty to allow sexual reproduction to occur;
- Know a variety of ways in which the sperm can fertilise the egg to create a baby;
- Know the legal age of consent and what it means.
- Explain how HIV affects the body's immune system;
- Understand that HIV is difficult to transmit;
- Know how a person can protect themselves from HIV.

		<p>Vocabulary: Responsibility, change, family, emotional, physical, positivity, feelings, strategies, body image, bullying, growing, changing, media, peers, relationships, society, qualities, stereotypes, gender, internet safety, pressure online, puberty, menstruation, periods, FGM, safe/unsafe secrets, communication, sexual reproduction, conception, IVF, adoption, surrogacy, pregnancy, birth, consent, STI, HIV, stigma</p>
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