Tywardreath School

# Science Overview
## Key Knowledge, Skills and Vocabulary
## Year B

What makes Tywardreath Curriculum unique? A clear focus on local, national and global communities, raising multi-cultural awareness, highlighting aspirational role models, developing skills for life, promoting a respect for our environment, celebrating responsible citizens and providing opportunities to debate and reflect.

| | EYFS | Year 1 and 2 | Year 3 and 4 | Year 5 and 6 |
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| Autumn 1 | Marvellous Me!<br>Celebrations | Explorers Through Time | Who You Going To Call? | A Child's War |
| | | Materials (Y1) | Electricity (Y4) | Light (Y6) |
| National Curriculum Objectives | Development Matters<br>To become an **Exceptional Explorer** who can show curiosity about the world around them.<br>To become a **Compassionate Citizen** who can help look after their community and care for the environment. | -distinguish between an object and the material from which it is made<br>-identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, rock<br>-describe the simple physical properties of a variety of everyday materials<br>-compare and group together a variety of everyday materials on the basis of their simple physical properties | Pupils should be taught to:<br>-identify common appliances that run on electricity<br>-construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers<br>-identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery<br>-recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit<br>-recognise some common conductors and insulators, and associate metals with being good conductors | Pupils should be taught to:<br>-recognise that light appears to travel in straight lines<br>-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<br>-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<br>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them |
| Assessment | Tapestry | **TAPS:** Ask Questions and Plan Enquiry (floating and sinking) | **TAPS:** Ask Questions and Plan Enquiry (conductors) | **TAPS:** Ask Questions and Plan Enquiry (investigating shadows) |
| Working Scientifically | Pupils should be taught to:<br>-choose the resources they need for their chosen activities and say when they do or don't need help | Pupils should be taught to:<br>--ask simple questions and recognise that they can be answered in different ways | Pupils should be taught to:<br>-ask relevant questions and use different types of scientific enquiries to answer them<br>set up simple practical enquiries, comparative and fair tests | Pupils should be taught to:<br>-Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary |

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| **Key Knowledge** | Look at pictures of themselves and talk about changes that have happened | Identify and name materials in our classroom, school grounds etc.<br>Know the difference between an object and what it is made from<br>Name some properties of everyday materials.<br>Know what floating and sinking means and predict whether an object will float or sink depending on the material it is made from. | -Know how to identify electrical and nonelectrical appliances.<br>-Explain, with support, how a circuit works.<br>-Able to name at least two electrical conductors and insulators.<br>-Able to create a simple series circuit both with and without a switch | -Know light travels in straight lines.<br>-Describe and explain how light enables us to see.<br>-Understand reflection as light bouncing off a surface.<br>-Identify some effects of refraction and know that it is light bending or changing direction<br>-Identify the visible spectrum.<br>-Explore colours using light and know that colours are a result of light reflecting off an object<br>-Know that Isaac Newton discovered information about light and colour<br>Know that Ibn-al Haytham was the first scientist to find out that light travels in straight lines and from this discovered how our eyes work. |
| **Sequence of Learning** | Led by children's interests and ongoing AFL. Sequenced to build upon prior knowledge with a clear end point. | Prior Learning: Materials from EYFS<br>1.Can I identify and name materials in our classroom?<br>2.Can I explore the difference between an object and what it is made from?<br>3.Can I describe the properties of different materials?<br>4.Can I group materials according to their properties?<br>5.Can I investigate objects floating and sinking? | Prior knowledge (own as first time taught)<br>1. Can I identify a range of common electrical appliances?<br>2. Can I explain how a circuit works? Can I construct a simple electrical circuit?<br>3. Can I explain the purpose of switches?<br>4. Can I construct a simple series circuit with and without a switch?<br>5. Can I describe electrical conductors and insulators? | Prior Learning: Y3/4 Light<br>1.Can I explain how light travels?<br>2.Can I explore the angles of incidence and reflection?<br>3.Can I explore the visible spectrum?<br>4.Can I investigate how light enables us to see colours?<br>5.Can I explore shadows? |
| **Key Vocabulary** | question, answer, explore, test, experiment, investigate, predict, sort, group, record, compare, describe, life-cycle, body parts, baby, adult,human, | Object, material, hard, soft, stretchy, shiny, dull, rough, smooth, bendy, waterproof, absorbent, transparent, opaque | Appliances, electricity, electrical circuit, cell, wire, bulb, buzzer, danger, electrical safety, sign, insulators, wood, rubber, plastic, glass, conductors, metal, water, switch, open, closed | Light, light source, reflection, incident ray, reflected ray, the law of reflection, refraction, visible spectrum, prism, shadow, transparent, translucent, opaque |

| | EYFS | Year 1 and 2 | Year 3 and 4 | Year 5 and 6 |
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| Autumn 2 | Marvellous Me!<br>Celebrations | Where is our Kingdom? | Where Can We Go? | Is There Anybody Out There? |
| | | **Plants (Y1)**<br>Name plants and structure | **Living Things and their Habitats (Y4)** | **Earth and Space (Y5)** |
| National Curriculum Objectives | Development Matters<br>To become an **Exceptional Explorer** who can show curiosity about the world around them.<br>To become a **Compassionate Citizen** who can help look after their community and care for the environment. | Pupils should be taught to:<br>-identify and name a variety of common wild and garden plants, including deciduous and evergreen trees<br><br>-identify and describe the basic structure of a variety of common flowering plants, including trees | Pupils should be taught to:<br>-recognise that living things can be grouped in a variety of ways<br>-explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment<br>-recognise that environments can change and that this can sometimes pose dangers to living things | Pupils should be taught to:<br>-describe the movement of the Moon relative to the Earth<br>-describe the Sun, Earth and Moon as approximately spherical bodies<br>-use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky |
| Assessment | **Tapestry** | **TAPS:** Set Up Enquiry | **TAPS:** Set Up Enquiry<br>(local survey) | **TAPS:** Set Up Enquiry<br>(craters) |
| Working Scientifically | Pupils should be taught to:<br>choose the resources they need for their chosen activities and say when they do or don't need help | Pupils should be taught to:<br>Perform simple tests | Pupils should be taught to:<br>-set up simple practical enquiries, comparative and fair tests | Pupils should be taught to:<br>-use test results to make predictions to set up further comparative and fair tests |
| Key Knowledge | -Learn how to look after our body<br>-Oral hygiene<br>-Importance of eating fruit and vegetables | -Say the names of parts of trees. --<br>Match leaves they have collected to pictures of a leaf.<br>Identify some garden plants that they see in photographs.<br>Name some garden plants from memory.<br>Identify some common plants in the wild. (found on school field during Autumn/Winter: clover, brambles, holly, ivy, daisy? dandelion? ) | -Generate criteria to use to sort living things.<br>-Sort living things into a Venn<br>-Sort living things into a Carroll diagram.<br>-Use questions to sort animals using a key.<br>-Use the characteristics of living things to sort them using a classification key.<br>-Create a classification key. | -Know that the Sun, Earth and Moon as spherical.<br>-Name the planets in the solar system independently.<br>-Distinguish between heliocentric and geocentric ideas of planetary movement.<br>-Explain that day and night is due to rotation of the Earth.<br>-Support the idea that different places on Earth experience night and day at different times with evidence. |

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| | | Know the leaves of the eucalyptus (staff car park), conifers (needles and scales), oak, hawthorn<br>Label the parts of a plant.<br>Sort leaves into groups of deciduous and evergreen.<br>Collect information on a Wild Plant Hunt | | -Explain how the Moon moves relative to the Earth<br>-Know about the achievements of Tim Peake |
| Sequence of Learning | Led by children's interests and ongoing AFL. Sequenced to build upon prior knowledge with a clear end point. | Prior Learning from EYFS: Know plants grow from a seed, know plants need soil, water and sun to grow, talk about plants and their features<br>1. Can I name and draw a range of fruit and vegetables that grow in our garden?<br>2. Can I name the wild flowers that grow in our environment?<br>3. Can I name trees by recognising their leaves?<br>4. Can I sketch and label parts of a vegetable, flower and tree?<br>5. Can I begin to describe the similarities and differences between deciduous and evergreen trees? | Prior Learning from Y1/2: difference between living and non-living things, basic classification (fish, mammals, amphibians, insects, birds) , herbivore, omnivore, carnivore<br>1. Can I sort living things in a variety of ways?<br>2. Can I explore and use a classification key?<br>3. Can I create a classification key?<br>4. Can I make observations in local habitats to record and classify living things?<br>5. Can I recognise positive and negative changes to our local environment? | Prior Learning: what do children already know about space?<br>1. Can I explore the idea of spherical bodies?<br>2. Can I name and describe features of the planets in our solar system?<br>3. Can I explain how planets move in our solar system?<br>4. Can I explore night and day?<br>5. Can I explore the phases of the moon?<br>6. Can I recall key events from 'The Space Race'? |
| Key Vocabulary | question, answer, explore, test, experiment, investigate, predict, sort, group, record, compare, describe,force, magnetic, non-magnetic, freeze, melt, boil, change, sink, float, plant, grow, flower, tree, soil, roots, stem, stalk, leaves, petals, trunk, branches, seed, bud, blossom, life-cycle, body parts, baby, adult,human, wood, metal, plastic, glass, rock, hard, rough, smooth | Wild plants, garden plants, weed, deciduous, evergreen, roots, stem, leaves, flowers, petals, fruit, seed, bulb | habitat, environment, endangered species, extinct, classification, vertebrates, invertebrates, classification key, group, sort | Sun, star, moon, planet, sphere, spherical bodies, satellite, orbit, rotate, axis, geocentric model, heliocentric model, astronomer, |

| | EYFS | Year 1 and 2 | Year 3 and 4 | Year 5 and 6 |
|---|---|---|---|---|
| Spring 1 | Our Wonderful World<br>Let's Go On An Adventure | Traps, Trams and Trains | Davy Shines the Light! | Ancient Egyptians – Original Farmers? |
| | | **Everyday Materials (Y2)**<br>Identify and Compare Materials | **Light (Y3)** | **Electricity (Y6)** |
| National Curriculum Objectives | <u>Development Matters</u><br>To become an **Exceptional Explorer** who can show curiosity about the world around them.<br>To become a **Compassionate Citizen** who can help look after their community and care for the environment. | Pupils should be taught to:<br>-identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses<br>- find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching | Pupils should be taught to:<br>-recognise that they need light in order to see things and that the dark is the absence of light<br>-notice that light is reflected from surfaces<br>-recognise that light from the sun can be dangerous and that there are ways to protect their eyes<br>-recognise that shadows are formed when the light from a light source is blocked by a solid object<br>-find patterns in the way that the size of shadows changes | Pupils should be taught to:<br>- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit<br>- 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<br>- use recognised symbols when representing a simple circuit in a diagram. |
| Assessment | **Tapestry** | **TAPS:** Observe and Measure<br>(Reflection tests) | **TAPS:** Observe and Measure<br>(making shadows) | **TAPS:** Observe and Measure<br>(bulb brightness) |
| Working Scientifically | Pupils should be taught to:<br>-know about similarities and differences in relation to places, objects, materials and living things<br>-make observations | Pupils should be taught to:<br>-Observe closely, using simple equipment | Pupils should be taught to:<br>-Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers | Pupils should be taught to:<br>-take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate |
| Key Knowledge | Changes of State - ice | -Identify and name everyday materials in our classroom and school grounds<br>-Describe simple properties of everyday materials. | -Identify light sources<br>-Understand that we need light to see<br>-Know what light travels in a straight line | Recap learning Y3/4 Electricity<br>-Explain how our understanding of electricity has changed over time<br>-Know the main circuit symbols and use these to draw circuit diagrams |

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| | | -Distinguish between an object and the material it is made from<br>-Identify and name materials used to make transport and give reasons for usage<br>-Begin to know which materials are most suitable for different modes of transport | -Identify reflective surfaces<br>-Know that the Sun can damage their eyes<br>-Know how to protect their eyes from the Sun<br>-Identify some parts of the eye<br>-Understand that a shadow is formed when a solid object blocks light<br>-Know how shadows change size | - Draw circuit diagrams using the correct symbols and label the voltage correctly<br>-Explain the effect of increasing or decreasing the voltage on different parts of a circuit<br>-Explain the difference between series and parallel circuits |
| Sequence of Learning | Led by children's interests and ongoing AFL. Sequenced to build upon prior knowledge with a clear end point. | Prior Learning: Can I name different materials and say what material an object is made from?<br>Can I describe the properties of everyday materials?<br>1.Can I say what materials different transport is made from?<br>2.Can I discuss the suitability of materials?<br>3.Can I discover how to change materials?<br>4.Can I say what materials are reflective? | Prior Learning what do children know about light?<br>1.Can I explain how light is needed to see?<br>2.Can I investigate which surfaces reflect light?<br>3.Can I explain how mirrors work?<br>4.Can I explain why light from the sun can be dangerous? *(ref to some parts of the eye)*<br>5.Can I investigate which materials block light to form shadows? | Prior Learning (Y4 Electricity)<br>1.Can I explain how our understanding of electricity has changed over time?<br>2.Can I explore circuit diagrams?<br>3.Can I use symbols to represent a circuit?<br>4.Can I investigate circuits?<br>5.Can I explore series and parallel circuits? |
| Key Vocabulary | question, answer, explore, test, experiment, investigate, predict, sort, group, record, compare, describe, force, magnetic, non-magnetic, freeze, melt, boil, change, sink, float, | Object, material, hard, soft, stretchy, shiny, dull, rough, smooth, bendy, waterproof, not waterproof, absorbent, not absorbent, transparent, opaque | Light, light source, dark, reflection, reflect, reflective, ray, pupil, retina, shadow, opaque, translucent, transparent | cells, wires, bulbs, switches, buzzers, battery, circuit, series, conductors, insulators**,** amps, volts, parallel, series |

| | EYFS | Year 1 and 2 | Year 3 and 4 | Year 5 and 6 |
|---|---|---|---|---|
| Spring 2 | Our Wonderful World<br>Let's Go On An Adventure | A Land Down Under! | How Mighty are Mountains? | Who Lives in Rio? |
| | | **Plants (Y2)**<br>Growth and Needs | **Animals including Humans (Y3)**<br>Skeletons and muscles for protection, support, movement | **Living Things and Habitats (Y5)**<br>Lifecycles |
| National Curriculum Objectives | <u>Development Matters</u><br>To become an **Exceptional Explorer** who can show curiosity about the world around them.<br>To become a **Compassionate Citizen** who can help look after their community and care for the environment. | Pupils should be taught to:<br>-observe and describe how seeds and bulbs grow into mature plants<br>-find out and describe how plants need water, light and a suitable temperature to grow and stay healthy | Pupils should be taught to:<br>-identify that humans and some other animals have skeletons and muscles for support, protection and movement | Pupils should be taught to:<br>-describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird<br>-describe the life process of reproduction in some plants and animals |
| Assessment | **Tapestry** | **TAPS:** Record<br>(compare growth) | **TAPS:** Record<br>(skeletons) | **TAPS:** Record<br>(invertebrate research) |
| Working Scientifically | Pupils should be taught to:<br>-explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function<br>-select and use technology for particular purposes | Pupils should be taught to:<br>-Gather and record data to help in answering questions | Pupils should be taught to:<br>-Gather, record and classify and present data in a variety of ways to help in answering questions<br>-Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables | Pupils should be taught to:<br>-record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs |
| Key Knowledge | Sort toys according to material | -Explain that plants need water, light and a suitable temperature to grow well. -Follow instructions to plant a seed and a bulb.<br>-Order and describe the life cycle of a plant.<br>-Suggest how to care for a plant so it grows well.<br>-Name and identify common wild plants growing in Australia and make comparisons to the UK plants. | -Know some of the main parts of a human skeleton<br>-Know that not all animals have an internal skeleton and that the presence of this is important in classifying them.<br>-Name similarities and differences and spot patterns between different skeletons<br>-Know that a skeleton is needed for support, protection and movement. | -Know the function of the parts of a flower.<br>-Know the differences between sexual and asexual reproduction.<br>-Identify the features of plants pollinated by insects or the wind.<br>-Describe ways plants can be pollinated.<br>-Describe ways to grow new plants other than from seed. |

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| | | -Name the basic structure of plants | -Know that muscles work in pairs to allow movement and posture | -Describe the stages of sexual reproduction in plants.<br>-Describe the differences between mammalian, bird, amphibian and insect lifecycles.<br>-Know about Jane Goodall<br>-Describe the stages of the life cycles of mammals, birds, insects and amphibians.<br>-Identify similarities and differences between the life cycles of different plants and animals |
| Sequence of Learning | Led by children's interests and ongoing AFL. Sequenced to build upon prior knowledge with a clear end point. | Prior Learning: Plants Y1 (names of a variety of plants, basic structure)<br>1.Can I follow instructions to plant a seed/bulb?<br>2.Can I suggest what a plant needs to grow well?<br>3.Can I label the basic structure of plants?<br>4.Can I name and identify some Australian Plants and compare with UK plants?<br>5.Can I order the lifecycle of a plant? | Prior Learning: what do children know about skeletons and muscles<br>1. Can I name the main parts of a human skeleton?<br>2. Can I sort skeletons into groups?<br>3. Can I explain how skeletons support movement?<br>4. Can I explain how bones and muscles work together to create movement? | Prior Learning: Plants Y1/2, Y3/4 (function of different parts, requirements to grow)<br>1.Can I identify the reproductive parts of flowering plants?<br>2.Can I describe methods of pollination?<br>3.Can I explain the lifecycles of different mammals?<br>4.Can I compare life cycles of amphibians and insects?<br>5.Can I describe the work of some famous naturalists? |
| Key Vocabulary | question, answer, explore, test, experiment, investigate, predict, sort, group, record, compare, describe,force, magnetic, non-magnetic, freeze, melt, boil, change, sink, float, plant, grow, flower, tree, soil, roots, stem, stalk, leaves, petals, trunk, branches, seed, bud, blossom, life-cycle, body parts, baby, adult,human, wood, metal, plastic, glass, rock, hard, rough, smooth | Sunlight, water, temperature, nutrition, germination, sprout, shoot, seed dispersal, Plants, growth , (names of common plants in UK and Australia) Flower, leaf, stem, root, food, Oxygen, Carbon dioxide | bone, skeleton, skull, ribcage, pelvis, femur, muscles, joints, tendons, contract, relax, biceps, triceps | Asexual reproduction, fertilise, gestation, life cycle, metamorphosis, pollination, reproduction, sexual reproduction, stamen, style, ovule, stigma, anther,, carpel, sepal, pollination, germination, seed dispersal |

| | EYFS | Year 1 and 2 | Year 3 and 4 | Year 5 and 6 |
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| Summer 1 | The Great Outdoors<br>Fun at the Seaside | The Unsinkable Ship? | What Did the Greeks Do For Us? | Stone Age- Carving the Way Forward? |
| | | **Living Things and their Habitats**<br>Oceans | **Animals Including Humans (Y4)**<br>(digestive system, teeth) | **Properties and Changes in Materials (Y5)**<br>Solids, liquids, gases, reversible changes |
| National Curriculum Objectives | <u>Development Matters</u><br>To become an **Exceptional Explorer** who can show curiosity about the world around them.<br>To become a **Compassionate Citizen** who can help look after their community and care for the environment. | Pupils should be taught to:<br>-identify that most living things live in habitats to which they are suited and describe how different habitats provide the basic needs of different kinds of animals and plants, and how they depend on each other<br>-identify and name a variety of plants and animals in their habitats, including micro-habitats<br>-describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food | Pupils should be taught to:<br>-describe the simple functions of the basic parts of the digestive system in humans<br>-identify the different types of teeth in humans and their simple functions<br><br>- | Pupils should be taught to:<br>-know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution<br>-use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating<br>-demonstrate that dissolving, mixing and changes of state are reversible changes<br>-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 |
| Assessment | **Tapestry** | **TAPS:** Interpret and Report (habitats) | **TAPS:** Interpret and Report (Teeth in liquids) | **TAPS:** Interpret and Report (invertebrate research) |
| Working Scientifically | Pupils should be taught to:<br>represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories | Pupils should be taught to:<br>-identify and classify, using scientific language to communicate ideas | Pupils should be taught to:<br>-report on findings from enquiries, including oral and written explanations, displays or presentations and conclusions<br>-identify differences, similarities or changes related to simple scientific ideas and processes | Pupils should be taught to:<br>Report and present findings from enquires, including conclusions and casual relationships, in oral and written forms such as displays and other presentations, using appropriate scientific language |

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| **Key Knowledge** | - Understand the key features of the life cycle of a plant or animal (plant, frog, butterfly) | -Know what is different about things that are living, dead or have never been alive.<br>-Identify some of the plants and animals in a familiar habitat.<br>-Name the microhabitats on the beach e.g. rock pool, shoreline, dunes, wet sand, rocks, sea<br>-Name the animals that live there.<br>-Know why they are suitable for them.<br>-Know what these animals eat.<br>-Explore and order food chains of local animals using appropriate scientific vocabulary | - Know about the first stage of digestion and the function of the teeth.<br>-Know how to identify a herbivore, carnivore by its teeth<br>-Know about the basic parts of our digestive system<br>-Know the basic functions of the oesophagus, stomach, small intestine, large intestine, rectum<br>-Know that scientists can learn about animal diets through studying their poo. | -Explain the uses of thermal and electrical conductors and insulators.<br>-Order materials according to their electrical conductivity.<br>-Explain and investigate dissolving.<br>-Explain the processes used to separate mixtures. -Explain irreversible changes.<br>- Know about Professor Brian Cox's work and watch him showing- real world sewage filtration |
| **Sequence of Learning** | Led by children's interests and ongoing AFL. Sequenced to build upon prior knowledge with a clear end point. | Prior Learning: Living Things and Habitats<br>1.Can I identify some plants and animals in the local environment?<br>2.Can I describe microhabitats of mini beasts?<br>*(Beach Trip?)* 3.Can I describe microhabitats on the beach?<br>Can I name plants and animals that live there?<br>4.Can I order a food chain? | Prior Learning: what do children know about teeth and digestion?<br>1.Can I explain the function of the teeth?<br>2.Can I suggest what type of diet an animal has by studying their teeth?<br>3.Can I investigate tooth decay?<br>3.Can I name the basic parts of the digestive system?<br>4.Can I describe the functions of the different parts of the digestive system? | Prior Learning Y1/2 (Everyday Materials – suitability, properties)<br>Y3/4 Changing State<br>1.Can I explain the uses of thermal and electrical conductors and insulators?<br>2.Can I order materials according to their electrical conductivity?<br>3.Can I explain and investigate dissolving?<br>4.Can I explain the processes used to separate mixtures?<br>5.Can I explain irreversible changes? |
| **Key Vocabulary** | question, answer, explore, test, experiment, investigate, predict, sort, group, record, compare, describe,plant, grow, flower, tree, soil, roots, stem, stalk, leaves, petals, trunk, branches, seed, bud, blossom, life-cycle, body parts, baby, adult,human | Habitat, microhabitat, living, dead, never living, life processes, food sources, food chain, basic needs, producer, consumer | Digestive system, nutrition, mouth, teeth, saliva, oesophagus, stomach, small intestine, large intestine, duodenum, rectum, anus, faeces | Properties, hardness, solubility, transparency, electrical conductor, thermal conductor, response to magnets, dissolve, solution, separate, separating, solids, evaporation, filtering, sieving, melting, irreversible, burning, chemists, insulation |

| | EYFS | Year 1 and 2 | Year 3 and 4 | Year 5 and 6 |
|---|---|---|---|---|
| Summer 2 | The Great Outdoors<br>Fun at the Seaside | My Ocean, Your Ocean, Our Ocean? | Can We Live Anywhere? | Can the Rainforest Be Saved? |
| | | **Animals including Humans (Y1)**<br>Name, Identify, Classification | **Plants (Y3)**<br>Function of different parts + requirements to grow | Living things and Habitats (Y6)<br>Classification |
| National Curriculum Objectives | Development Matters<br>To become an **Exceptional Explorer** who can show curiosity about the world around them.<br>To become a **Compassionate Citizen** who can help look after their community and care for the environment. | Pupils should be taught to:<br>-identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals<br>-identify and name a variety of common animals that are carnivores, herbivores and omnivores<br>-notice that animals, including humans, have offspring which grow into adults | Pupils should be taught to:<br>-identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers<br>-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 | Pupils should be taught to:<br>-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<br>-give reasons for classifying plants and animals based on specific characteristics |
| Assessment | **Tapestry** | **TAPS:** Evaluate<br>(animal classification) | **TAPS:** Evaluate<br>(stem function) | **TAPS:** Evaluate<br>(outdoor keys) |
| Working Scientifically | Pupils should be taught to:<br>-talk about the features of their own immediate environment and how environments might vary from one another<br>-explain why some things occur and talk about changes | Pupils should be taught to:<br>-Use their observations and ideas to suggest answers to questions | Pupils should be taught to:<br>-Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions<br>, Use straightforward scientific evidence to answer questions or to support their findings | Pupils should be taught to:<br>Explain degree of trust in results<br>Identify and evaluate scientific evidence (their own and others) that has been used to support or refute ideas and arguments |
| Key Knowledge | - Comment on what they notice about the environment where they live and understand the effect of the changing seasons on the natural world around them.<br>Describe what they see, hear, and feel outside | -Know that animals can be grouped and classified.<br>-Begin to group and classify local animals.<br>-Name animals which live in our local environment and why. | -Know the functions of different parts of flowering plants<br>-Know what plants require for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant | - Know about the work of scientists such as Carl Linnaeus (first introduced in Y2)<br>-Know that classification systems group according to similarities and differences.<br>-Build on knowledge from Y4. |

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| | Explore the natural world around them by taking part in weekly forest school inspired 'Nature School' sessions and making observations and drawing pictures of animals and plants.<br>Understand the need to respect and care for the natural environment and all living things | -Know the differences and similarities between carnivores, herbivores and omnivores and make links to local animals.<br>-Know that animal have offspring and match appropriately.<br>-Classify animals of the oceans | - Know that scientists are working to develop new crops that can grow in today's changing climate<br>-more resistant to extreme weathers<br>-know about the work of Joanne Chory | -Know that the broad groupings of micro-organisms, plants and animals can be subdivided.<br>-Know how to classify animals into commonly found invertebrates and vertebrates<br>-Discuss reasons why living things are placed in one group and not another. |
| Sequence of learning | Led by children's interests and ongoing AFL. Sequenced to build upon prior knowledge with a clear end point. | Prior Learning: Y2 children – ways to classify, names of animals in our local environment<br>1.Can I describe how animals can be grouped and classified?<br>2.Can I begin to group and classify animals in our local environment?<br>3.Can I explain the difference between a carnivore, herbivore and omnivore?<br>4.Can I classify animals of the oceans?<br>5.Can I match offspring to parent animal? | Prior Learning from Y1/2: identify and name a variety of common plants, describe basic structure, know what plants need to grow<br>1. Can I name and label different parts of flowering plants? *(including function)*<br>2. Can I describe what different plants require for life and growth?<br>3. Can I investigate how water is transported through the stem to other parts of the plant?<br>4. Can I discuss how scientists are working to develop new crops? (why might it be necessary to create new crops that can grow in today's changing climate –link to Joanne Chory) | Prior Learning Y3/4 what is classification, how can living/non living things be classfificed<br>1. Can I classify different types of animals?<br>2. Can I explore the classification of plants and animals that live in the rainforest?<br>3. Can I explore the Linnaean System?<br>4. Can I investigate micro-organisms?<br>5. Can I record observations of micro-organisms? |
| Key Vocabulary | question, answer, explore, test, experiment, investigate, predict, sort, group, record, compare, describe,force, magnetic, non-magnetic, freeze, melt, boil, change, sink, float, plant, grow, flower, tree, soil, roots, stem, stalk, leaves, petals, trunk, branches, seed, bud, blossom, life-cycle, body parts, baby, adult,human, wood, metal, plastic, glass, rock, hard, rough, smooth | fish, amphibians, reptiles, birds and mammals, carnivores, herbivores and omnivores, offspring | Roots, flowering plants, stem, trunk, leaves, flower, air, light, water, nutrients from the soil, room to grow, little fertiliser | Micro-organisms, plants, animals, classification, classify, invertebrates, vertebrates,<br>, kingdom, phylum, class, order, family, genus, species, Linnaeus, classification key, opinion, similarities, differences, group, observations, support, refute |