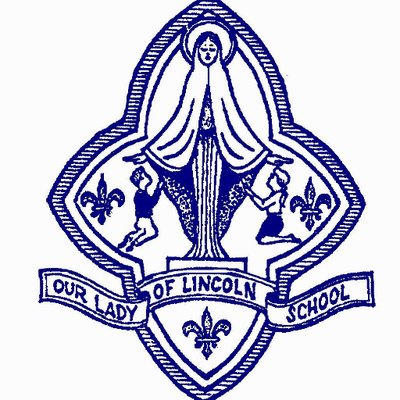
**Our Lady of Lincoln Catholic Primary School**

**Biology Curriculum**



**Biology Whole School Long Term Overview**

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| **Year 1** | **Plants**  Do we need plants in our world? | **Animals, including humans**  Are all animals the same? |  |  |
| **Year 2** | **Plants**  Can we grow the perfect plant? | **Animals, including humans**  Do humans need food to survive? | **Living Things and their Habitats**  Is everything alive? |  |
| **Year 3** | **Plants**  Can a plant live forever? | **Animals, including humans**  Is our skeleton important? |  |  |
| **Year 4** |  | **Animals, including humans**  Can humans survive without food? | **Living Things and their Habitats**  Does every living thing have a right to exist? |  |
| **Year 5** |  | **Animals, including humans**  Are humans less important as they grow older? | **Living Things and their Habitats**  Are animals as intelligent as humans? |  |
| **Year 6** |  | **Animals, including humans**  Can lifestyle choices we make affect how well our bodies work? | **Living Things and their Habitats**  Is Carl Linnaeus’ work important? | **Evolution and Inheritance**  Are we the same as our parents? |

**Plants**



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**Year 1 Science Programme of Study - Biology**

**Project:** Plants

**Question:** Do we **need** plants in our world?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **NB: Children should take part in practical activities throughout.**  **To know the basic parts of a plant / flower.**   * *stem, roots, leaves, pollen, nectar, stamen, petal, bud* * ***begin*** *to discuss what these parts do ( the stem anchors the plant and holds it up, leaves soak up sunlight and water,* * *When you read Hungry Caterpillar last year you learnt some parts of plants and know that fruits come from plants and caterpillars use leaves to lay eggs link to this*   **To know the parts of tree**   * *Trunk, branches, buds, roots,* * *Compare trees and plants and the different parts, some trees grow fruits.*   **To know some common wild and garden plants (Health)**   * *to identify some common and wild plants :look at daisies, poppies, raspberry bushes, birch trees, holly bushes, willow* * *to look at the plants in the nature garden and spot them, look at leaves, colour and sizes.*   **To know what changes occur with some plants and trees throughout the season ( particularly in the UK)**   * *study this ongoing throughout the year and track changes in their own environment, have photos with the trees seasonally, look out for leaves colours and changes* * *to know that some trees lose their leaves and some don’t*   **To know the differences between deciduous and evergreen tree**   * *link to RE and advent wreath- they are every green and don’t change like Jesus’ love* * *deciduous trees shed their leaves seasonally and evergreens don’t, ever green leaves stay the same and deciduous leaves fall and change seasonally.*   **To begin to know that trees and plants are important to our World. (Health, World Citizen)**   * ***t****rees produce oxygen which we use to breathe* * *Flowers produce pollen/ nectar which bees needs to produce honey* * *imagine a world without them ( think for a moment about this even at a basic level, think of all of the art and religious stories that use flowers, plants and trees.*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Explore the world around them and raise their own simple questions.  \* Use simple features to compare objects, materials and living things, and with help, decide how to sort and group them.  \*Observe closely using simple equipment with help, observe changes over time.    \*With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.  \* With guidance, they should begin to notice patterns and relationships.  \* Use their observations and ideas to suggest answers to questions.  \* Talk about what they have found out and how they have found it out. | **Core vocabulary:**  **Tier 3**  deciduous  evergreen  **Tier 2**  Seed  Root  Stem  Leaf  Branch  Flower  Trunk  Soil  Water  Harvest  Crops |
| **Curriculum threads to be covered:-**  **Reading** –   * Listening to and discussing non-fiction at a level beyond that at which they can read independently. * Being encouraged to link what they read or hear read to their own experiences. * Discussing word meanings, linking new meanings to those already known. * Drawing on what they already know or on background information and vocabulary provided by the teacher.   **Computing** –  **British Values** – To encourage students to accept responsibility for their behaviour, show initiative, and to understand how they can contribute positively to the lives of those living and working in the locality of the school and to society more widely- *raise awareness that plants help us and that we need to make responsible choices to ensure plant-life is respected and protected.*  **PSHE** – Living in the Wider World ˃Caring for the Community- CORAM Life Education- ***Around and About the School*** (Year 1) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Time looking at plants in year reception. Reading the very hungry caterpillar.  EYFS-ELG 13 The world | | |

**Year 2 Science Programme of Study - Biology**

**Project:**     Plants

**Question:**   Can we grow the perfect plant?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **NB: Children should take part in practical activities throughout.**  **To know what germination is.**   * *When seeds are planted they grow roots first* * *When the roots take hold a small plant begins to emerge and breaks through the soil so the seed has sprouted this is germination*   **To know the how seeds and bulbs grow into mature plants**   * *The seeds contain an embryo and a group of cells create the roots, stem and then leaves* * *Once the seed coat is moistened the embryo expands and bursts out* * *Bulbs are plants that grow from an underground mass of food storage like: tulips, daffodils and contain a complete miniature plant surrounded by fleshy scales.* * *The scales contain carbohydrates and they nourish the young plant.*   **To know that plants need water, light and a suitable temperature to grow  (Health)**   * *Plants need nutrients just like humans and animals* * *They need both water and nutrients to survive* * *Air and soil help a plant grow* * *Light and temperature are important and sunlight is needed* * *Plants also need enough space* * *Fertilizer can provide plants with nutrients and is usually given to plants when watering* * *Nitrogen is necessary for making green leaves and phosphorus is needed for making big flowers and strong roots* * *Potassium helps the plants to fight off disease*   **To begin to know how plants reproduce.**   * *Reproduction involves the production of male and female parts.*   **To know that plants are important to our health**   * *Plants provide oxygen for us to breathe* * *Plants are vegetables and fruits which we need as part of a healthy diet* * *The flower of some plants becomes the vegetable or the fruit*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Explore the world around them and raise their own simple questions.  \* Ask people questions and use simple secondary sources to find answers.  \* Carry out simple tests  \*Observe closely using simple equipment with help, observe changes over time.  \* Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data.  \*Record simple data.  \* With guidance, they should begin to notice patterns and relationships.  \* Use their observations and ideas to suggest answers to questions.  \* Talk about what they have found out and how they have found it out. | **Core vocabulary:**  **Tier 3**  Germination  Reproduce  embryo  **Tier 2**  Growth  Temperature  Mature |
| **Curriculum threads to be covered:-**  **Reading** –   * Listening to, discussing and expressing views about a wide range of non-fiction at a level beyond that at which they can read independently. * Discussing and clarifying the meanings of words, linking new meanings to known vocabulary. * Drawing on what they already know or on background information and vocabulary provided by the teacher. * Answering and asking questions. * Discussing the sequence of events in books and how items of information are related   **Computing** –  **British Values** – To encourage students to accept responsibility for their behaviour, show initiative, and to understand how they can contribute positively to the lives of those living and working in the locality of the school and to society more widely. *(Grow in awareness that a healthy environment is necessary for plants and humans – plants provide fresh air. Our actions can have an impact on their healthy growth).*  **PSHE** – Living in the Wider World ˃Caring for the Environment – CORAM Life Education -*How can we look after the Environment* (Year 2) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Plants year1 :  To know the basic parts of a plant / flower.  To know the parts of tree  To know some common wild and garden plants ( health- poisonous etc)  To know what changes occur with some plants and trees throughout the season ( particularly in the UK)  To know that some trees lose their leaves and some don’t  To know the differences between deciduous and evergreen trees( BELIEFS)  To begin to know that trees and plants are important to our World. Health, World Citizen)  Seasonal changes Year 1:  To know about the changes in each season and describe weather associated with the **seasons.**  EYFS-  EYFS-ELG 06 Health and self care             ELG 14 The world | | |

**Year 3 Science Programme of Study - Biology**

**Project:**     Plants

**Question:**   Can living things live forever?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **NB: Children should take part in practical activities throughout.**  **To know the functions of the different parts of flowering plants:**   * *The roots absorb water and nutrients* * *The stem and trunk anchors the plant* * *Leaves soak up water and sunlight and term this into food, photosynthesis* * *Flowers attract bees, butterflies, humming birds, bats*   **To know what plants need to survive and how this varies from plant to plant: (world citizen)**   * *Plants need sunlight, air, water, room to grow and nutrients* * *This can vary depending on the plant* * *Different plants from around the world need different conditions like cactus etc*   **To know that water is transported in a flower through the stem and the leaves.**   * *Water diffuses from inside the root hairs then up into the root, then the stem*   **To know the life cycle of a flowering plant**   * *A seed starts as a seed which germinates and grows into a plant over time* * *The mature plant produces flowers* * *The flowers are fertilised and produce fruit or a pod* * *The plant dies and leaves seeds to germinate*   **To know how seeds are formed**   * *The formation of seeds is the reproduction in plants* * *This starts with the flowers and pollination* * *There is a seed coat and the ovule*   **To know what pollination is and the different stages.**   * *Pollination is transferring pollen grains from male anther from a male flower to the female stigma* * *They can then make seeds* * *Bees aid pollination*   **To know the different types of seed dispersal**   * *There are 5 main types of seed dispersal* * *Gravity can make seeds disperse* * *Wind can make seeds move and travel* * *Seeds can be dispersed in water* * *Seed dispersal can happen when they are eaten by animals or animals brush against them* * *Ballistic is very specific and when the plant ejects seeds*   **To know that trees and plants are important to our World. (Health, World Citizen)**   * *to understand that trees help produce oxygen* * *charities plant trees to help the planet*     **To know the work of a leading Scientist in Botany – Joseph Banks who voyaged with Captain Cook and brought back tropical plants;**  **(Aspiration)**   * *Joseph Banks was a famous Botanist and he brought back plants from around the world.* * *By sending botanists around the world to collect plants, he made Kew the world's leading*[*botanical gardens*](https://en.wikipedia.org/wiki/Botanical_gardens)*. He is credited for bringing 30,000 plant specimens home with him; amongst them, he discovered 1,400.* * *He is credited with bringing eucalyptus and acacia to the Western world.*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Should be given a range of scientific experiences including different types of Science enquiries to answer questions.  \* Start to make their own decisions about the most appropriate type of Scientific enquiry they might use to answer questions.  \* Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.  \* Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them.  \* Take accurate measurements using standard units.  \* With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions. | **Core vocabulary:**  **Tier 3**  Photosynthesis  Cell  Pollination  Seed dispersal  **Tier 2**  Plant  Root  Stem  Diffuse  Transported  Travels |
| **Curriculum threads to be covered:-**  **Reading** –   * Listening to and discussing a wide range of non-fiction and reference books or textbooks. * Identifying how language, structure, and presentation contribute to meaning. * Participate in discussion about both books that are read to them and those they can read for themselves, taking turns and listening to what others say.   **Computing** –  **British Values –**   * **To encourage students to accept responsibility for their behaviour, show initiative, and to understand how they can contribute positively to the lives of those living and working in the locality of the school and to society more widely.** (Grow in awareness of care for the plant environment; grow in awareness that healthy plant life has positive impact on our well-being and vice versa).   **PSHE** – Living in the Wider World ˃Caring for the Environment- CORAM Life Education- ***Harold’s Environment Project*** (Year 3) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Plants Year 2:  To know what germination is.  To know the how seeds and bulbs grow into mature plants  To know that plants need water, light and a suitable temperature to grow (health)  To begin to know how plants reproduce.  To know that plants are important to our health  EYFS-ELG 14 The world | | |

**Animals including Humans**



**Year 1 Science Programme of Study - Biology**

**Project:**     Animals Including Humans

**Question:**  Are all animals the same?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **To know a variety of common animals including fish, amphibians, reptiles, birds and mammals.**   * *Sharks are fish as are gold fish, eels, salmon, carp and clown fish* * *Mammals; tigers, lions, seals, whales, bats, dogs, cats, hippos* * *Birds; penguins, owls, eagles, magpies, sparrow, blue tits* * *Reptiles: snakes, turtles, lizards, crocodile, chameleons* * *Amphibians: frogs, toads, salamanders, newts,*   **To know that types of animals can be categorised into carnivores, herbivores and omnivores.**   * *Carnivores are meat eaters* * *Herbivores are plant eaters* * *Omnivores eat plant and meat too* * *Children should sort animals into these groupings.*   **To know the structure of a variety of common animals.**   * *Count arms and legs on animals.* * *Identify tails on animals.* * *Difference between feet and claws* * *Fins, beaks, trunks, tusks, feathers, tentacles etc.*   **To know, name, draw and label basic parts of the human body**   * *Name the head, neck, arm, leg, knees, face, ears, eyes, hair, mouth and teeth in humans and some common animals*   **To know about the human senses (Communication)**   * *We hear with our ears, taste through our tongue, see with our eyes, smell with our nose and feel with our fingers.*   **To know the work of scientist/ naturalist Chris Packham who studies animals (Aspiration)**   * *Chris Packham studies animals and the different species in their natural environment*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Explore the world around them and raise their own simple questions.    \* Begin to recognise ways in which they might answer scientific questions.  \* With guidance, they should begin to notice patterns and relationships.  \* Use their observations and ideas to suggest answers to questions.  \* Talk about what they have found out and how they have found it out. | **Core vocabulary:**  Tier 3  fish, amphibians, reptiles,  birds  mammals.  carnivores, herbivores omnivores.  Tier 2  Structure  Senses  Groupings  Common |
| **Curriculum threads to be covered:-**  **Reading** –   * Listening to and discussing a wide range of non-fiction at a level beyond that at which they can read independently. * Being encouraged to link what they read or hear read to their own experiences. * Discussing word meanings, linking new meanings to those already known * Drawing on what they already know or on background information and vocabulary provided by the teacher. * Participate in discussion about what is read to them, taking turns and listening to what others say.   **Computing** –  **British Values** – To encourage respect for other people- *Each person is unique, how we communicate respect using our bodies.*  **PSHE** – Health and Wellbeing ˃ Healthy Lifestyles- CORAM Life Education- *Eat Well,* - Growing and Changing- CORAM Life Education- *Inside My Wonderful Body!* (Year 1) | | |
| **Previous learning which will support the learning and skill development in this topic:**  EYFS-ELG 13 People and communities  ELG 14 The world | | |

**Year 2 Science Programme of Study - Biology**

**Project:**     Animals Including Humans

**Question:**   Do humans need food to survive?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **To know the that animals and humans have offspring which grow into adults**   * *Reproduction is when animals and humans produce offspring* * *Animals need to reproduce to survive* * *Reproduction is growth*   **To know the basic needs of humans for survival**   * *Humans for basic survival need water, food and air*   **To know the importance of exercise in humans (Health)**   * *Exercise improves health and well being. How can we exercise and improve our lifestyles?*   **To know the importance of eating the right amounts of foods and food types in humans**   * *Proteins, carbohydrates, fats and sugars are importance* * *Food types must be balanced*   **To know the importance of hygiene in humans (Health)**   * *Hygiene is about keeping clean and fresh* * *Humans need to wash daily with soap and water* * *Humans need to brush their teeth twice a day* * *Finger nails need to be trimmed* * *Hair should be washed*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Begin to recognise ways in which they might answer scientific questions.  \* Use simple features to compare objects, materials and living things, and with help, decide how to sort and group them.  \*Observe closely using simple equipment with help, observe changes over time.  \* Use their observations and ideas to suggest answers to questions.  \* Talk about what they have found out and how they have found it out. | **Core vocabulary:**  **Tier 3**  Offspring  reproduction    **Tier 2**  Exercise  Hygiene  Survival  frequent |
| **Curriculum threads to be covered:-**  **Reading** –   * Listening to, discussing and expressing views about a wide range of non-fiction at a level beyond that at which they can read independently. * Discussing and clarifying the meanings of words, linking new meanings to known vocabulary. * Drawing on what they already know or on background information and vocabulary provided by the teacher. * Answering and asking questions. * Being introduced to non-fiction books that are structured in different ways.   **Computing** –  **British Values** – **To enable students to develop their self-knowledge, self-esteem and self-confidence** *(growing in awareness of healthy choices and its impact on their own self-esteem and self-confidence)*  **PSHE** – Health and Wellbeing ˃Healthy Lifestyle- CORAM Life Education- **My** **Day** , **Harold’s Bathroom**, **Harold’s Postcard**, (Year 2) **Super Sleep** (Year 1) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Animals Inc Human Year 1:  To know and identify different types of animals and their structures. To know parts of the human body.  To know a variety of common animals including fish, amphibians, reptiles, birds and mammals.  To know that types of animals can be categorised into carnivores, herbivores and omnivores.  To know the structure of a variety of common animals.  To know, name, draw and label basic parts of the human body  To know about the human senses (communication)  To know the work of scientist/ naturalist Chris Packham who studies animals  EYFS-ELG 06 Health and self care             ELG 13 People and communities             ELG 14 The world | | |

**Year 3 Science Programme of Study - Biology**

**Project:**     Animals Including Humans

**Question:**   Is our skeleton important?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **To know that animals and humans need the right types of nutrition (Health)**   * *Humans can’t make their own food* * *The humans get nutrition from food* * *Some foods are not nutritious* * *Types of food: fats, protein, sugar, carbohydrates*   **To know the main parts of a skeleton**   * *The skull, rib cage, jaw, vertebrates, pelvis, spinal cord, fibula, femur, tibia, humerus*   **To know humans and some animals have skeletons and muscles for support, protection and movement. (Health)**   * *Human and animal skeletons are made up of bones* * *Bones contain calcium and it makes them strong* * *Skeletons develop from baby, child, adult, elderly person* * *Key function of the skeleton is to protect muscles and organs*   **To know how humans can keep their bones healthy and strong.**  **To know the work of Wilhelm Rontgen and the impact of his discovery.**   * *He discovered the use of X-Ray pictures* * *Before the use of X-Ray doctors had ‘felt’ and used ‘best guess’ to diagnose broken bones.* * *He won the first Nobel Prize in Physics in 1901.*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**    \* Make systematic and careful observations.  \* Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used.  \* Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help make decisions about how to analyse this data. | **Core vocabulary:**  **Tier 3**  Nutrition  skull, rib cage, jaw, vertebrates, pelvis, spinal cord, fibula, femur, tibia, humerus  fats  sugars  carbohydrate  proteins  **Tier 2**  Bones  x-ray  functions  protection  movement  healthy  skeleton |
| **Curriculum threads to be covered:-**  **Reading** –   * Listening to and discussing a wide range of non-fiction and reference books or textbooks. * Retrieve and record information from non-fiction. * Participate in discussion about both books that are read to them and those they can read for themselves, taking turns and listening to what others say.   **Computing** –  **British Values** –  **To enable students to develop their self-knowledge, self-esteem and self-confidence** (to become aware of impact of healthy life choices on their own physical well-being)  **To encourage respect for other people** (to become aware of skeletal differences in different age groups and i’s impact on their physical abilities)  **PSHE** – Health and Wellbeing ˃Healthy Lifestyles- CORAM Life Education- ***Derek Cooks a Dinner!*** , ***Body Team Work***  (Year 3) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Animals Inc Humans Year 2:  To about animals and human nutrition and about human and animal skeletons  To know the that animals and humans have offspring which grow into adults  To know the basic needs of humans for survival  To know the importance of exercise in humans( mental health and happiness)  To know the importance of eating the right amounts of foods and food types in humans  To know the importance of hygiene in humans ( health)  EYFS-ELG 06 Health and self care             ELG 13 People and communities             ELG 14 The world | | |

**Year 4 Science Programme of Study - Biology**

**Project:**     Animals Including Humans

**Question:**   Can humans survive without food?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **To know the simple functions of the parts of the digestive system in humans (Health)**   * *Know the major parts: mouth, salivary glands, pharynx, oesophagus, stomach,  small intestine, large intestine, rectum, gall bladder* * *The mouth chews up the food* * *The salivary glands produce saliva which breaks down food so it can be digested easier* * *The stomach receives food from the oesophagus and the stomach uses acids, enzymes  and muscles to digest the food and it is absorbed into the blood* * *Large intestine is where water is absorbed and the remaining waste as faeces* * *Small intestine uses bile and pancreatic juices to digest food.* * *Rectum is the end of the large intestine and anus where waste comes out*   **To know the different human teeth and their simple functions (Health)**   * *Incisors – how you bite food* * *Canines – sharp and they tear food* * *Premolars – tearing and crushing food* * *Molars – grind, tear and crush food* * *Know the importance of looking after teeth and what the effects are if they are not well looked after.*   **To know how to construct and interpret food chains.**   * *To know that producers are organisms that make their own nutrients* * *Predators = is an animal that hunts and eats other animals* * *Consumers = they get energy by consuming others.* * *Prey = gets eaten by the predator*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \*Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.  \* Set up simple practical enquiries, comparative and fair tests.  \* Make systematic and careful observations.  \* Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help make decisions about how to analyse this data.  \*Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for difference audiences, including oral and written explanations, displays or presentations of results and conclusions. | **Core vocabulary:**  **Tier 3**  salivary glands, pharynx, oesophagus, stomach,  small intestine,  large intestine, rectum,  digestion  ingestion  excretion  secretion  molar  acids  enzymes  molars  premolars  canines  incisors  **Tier 2**  function  organ  digest  absorbed |
| **Curriculum threads to be covered:-**  **Reading-**   * identify how language, structure and presentation contribute to meaning (use labelled diagrams for the children to see how these help them understand more than if information was just in a written paragraph) * identify main ideas drawn from more than one paragraph and summarise these. * listen to and discuss a wide range of non-fiction and reference books or textbooks.   **Computing** –  **British Values** –   * **To enable students to develop their self-knowledge, self-esteem and self-confidence** (grow in awareness of how healthy food and life choices have an impact on their digestive system). * **To encourage respect for other people** (grow in awareness of dietary implications on other people- food intolerance and its impact on their food and lifestyle choices).   **PSHE**   * Health and Wellbeing ˃Keeping Safe –CORAM Life Education- ***Know the Norms*** (Year 4) | |
| **Previous learning which will support the learning and skill development in this topic:**  Animals Inc Humans: Year 3:  To know that animals and humans need the right types of nutrition  To know humans and some animals have skeletons and muscles for support, protection and movement.  To know the main parts of a skeleton    EYFS-ELG 06 Health and self care  ELG 14 The world | |

**Year 5 Science Programme of Study - Biology**

**Project:**     Animals, including humans.

**Question:**   Are humans less important as they grow older?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: C**ommunication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **To know the seven stages of human development.**   * *pre natal, infancy, childhood, adolescence, early adulthood, middle adulthood, old age* * *key features / milestones of each stage e.g. puberty in adolescen, worklife in early / middle adulthood*   **To know the changes that occur in the body during puberty (Health, Communication)**   * *Boys – growth spurt, facial and pubic hair, sweat more, greasier skin, voice deepens, more muscular, penis and testicles develop.* * *Girls – growth spurt, pubic and body hair, sweat more, greasier skin, breasts grow, menstruation starts.* * *Hormones – testosterone, oestrogen and progesterone.* * *Specfic focus on hormones on moods and mental health*   **To know what gestation means and the gestation periods of different animals.**   * *The process or period of developing inside the womb between   conception and birth.* * *To explore if there’s a link between the size of mammal and the gestation period.*   **To know how a foetus develops in the womb (Health)**   * *the size of a foetus at different stages of pregnancy* * *key foetal development milestones* * *understand a pregnancy as 40 weeks*   *\* the role of the placenta and umbilical cord.*  **To know what is meant by life expectancy and factors which may affect this.(Health, World Citizen)**   * *understand life expectancy as the average time an organism is expected to live.* * *factors which may increase or decrease life expectancy of a human e.g. health services,  housing, health habits e.g. diet/drug use,  environmental factors and where you live in the world* * *utilise data from different countries to compare life expectancy.*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Talk about how Scientific ideas have developed over time.  \* Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.  \* Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.  \* Look for different causal relationships in their data and evidence that refutes or supports the ideas.  \*Identify scientific evidence that has been used to support or refute ideas or arguments.  \* Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.  \* Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results. | **Core vocabulary:**  **Tier 3**  Testosterone  Oestrogen  Progesterone  Adolescence  Pre-natal  Foetus  Gestation  Conception  Puberty  Menstruation  **Tier 2**  Development  Health  Moods  Pregnancy  Milestones  Expectancy  Factors  Average |
| **Curriculum threads to be covered:-**  **Reading -**   * Discuss their understanding and explore the meaning of words in context. * Distinguish between statements of fact and statements of opinion. * Continuing to read and discuss an increasingly wide range of non-fiction and reference books or textbooks.   **Computing –**  **British Values –**   * **To enable students to develop their self-knowledge, self-esteem and self-confidence** (grow in awareness of changes in body in both boys and girls and how healthy lifestyle choices contribute to support these changes). * **To enable students to acquire a broad general knowledge of and respect for public institutions and services in England** (share knowledge about support systems (through institutions) for young adults to encourage positive choices through these changes (Eg: DARE, SRE programmes) * **To encourage respect for other people** (aware of differences in boys and girls and its impact on their physical and mental well-being).   **PSHE**   * Health and Wellbeing ˃Growing and Changing- CORAM Life Education- ***Help! I’m a Teenager- Get me out of Here!*** (Year 5) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Animals Inc Humans: Year 4:  To know the simple functions of the parts of the digestive system in humans (Health)  To know the different human teeth and their simple functions (Health)  To know how to construct and interpret food chains.  Living Things : Year 4:  To know that there are vertebrates and invertebrates and be able to classify them  To know what keys are and classify animals with them  To know how to classify groups of animals in more detail  EYFS-ELG 13 People and communities             ELG 14 The world | | |

**Year 6 Science Programme of Study - Biology**

**Project:**     Animals, including humans.

**Question:**   Can lifestyle choices we make affect how well our bodies work?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **To know the main parts of the human circulatory system**   * *This is made up of heart, blood and blood vessels*   **To know the function of the heart, blood vessels and blood.**   * *Your heart plays a key role and needs to be healthy – touch on the work of Dr Marie Daly who discovered the link between high cholesterol and heart problems which led to a better understanding of the cause of heart attacks.* * *The heart keeps the blood flowing in your circulatory system* * *Blood helps oxygen get around your body*   **To know the impact of diet, exercise, drugs and lifestyle on how the bodies function ( to build on work from year 2) (Health Beliefs)**   * *Drugs can effect health and exercise* * *Diet can effect exercise* * *Find out which type of exercise best suits; sprinting, strength, endurance, mental health*   **To know how nutrients and water are transported in animals and humans.**   * *Part of the circulatory system* * *Nutrients transported in blood through capillaries* * *Arteries and veins are used* * *Nutrients, oxygen and waste all pass in and out of your blood through the capillary wall.*   **To know about Daniel Hale Williams and the impact of his work and beliefs. (Aspiration Beliefs)**   * *He performed the first successful heart surgery in 1893.* * *In 1913 he was the first African American to be inducted into the American College of Surgeons.* * *He was determined that Chicago should have a hospital where both black and white doctors could study and where black nurses could train. After months of hard work, he opened Provident Hospital and Training School for Nurses on May 4, 1891, the country's first interracial hospital and nursing school.*   **Refer back to the project question at the end of the unit** | **Working Scientifically skills from progression document**  \* Use their Science experiences to explore ideas and raise different kinds of questions.  \* Talk about how Scientific ideas have developed over time.  \* Select and plan the most appropriate type of scientific enquiry to use to answer Scientific questions.  \* Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.  \* Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.  \*Use their results to make predictions and identify when further observations, comparative and fair tests might be needed. | **Core vocabulary:**  **Tier 3**  Blood vessel  Capillaries  Circulatory system  Arteries  Veins  oxygen  **Tier 2**  Effect  Impact  nutrients  Transported  Function |
| **Curriculum threads to be covered:-**  **Reading**   * explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary * provide reasoned justifications for their views.   **Computing** –  **British Values –**   * **To enable students to develop their self-knowledge, self-esteem and self-confidence** (grow in awareness of impact of healthy lifestyle choices on our health and well-being) * **To encourage respect for other people (grow in awareness that varying health conditions contribute to additional health support facilities in other people** (Eg: Pace makers, monitoring devices).   **PSHE**   * Health and Wellbeing ˃Keeping Safe- CORAM Life Education- ***What sort of Drug is..?*** / ***Alcohol- What is normal?*** (Year 6) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Animals Inc Humans: Year 2:  To know the importance of exercise in humans( mental health and happiness)  To know the importance of eating the right amounts of foods and food types in humans  To know the importance of hygiene in humans ( health)  Animals Inc Humans: Year 5:  To know the seven stages of human development.  To know the changes that occur in the body during puberty (Health, Communication)  To know what gestation means and the gestation periods of different animals.  To know how a foetus develops in the womb.  To know what is meant by life expectancy and factors which may affect this.(Health, World Citizen)  To know the work of a leading Scientist in the area of child / human development. (Beliefs, Aspiration)  EYFS-ELG 06 Health and self care             ELG 13 People and communities             ELG 14 The world | | |

**Living Things and their Habitats**

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**Year 2 Science Programme of Study - Biology**

**Project:**     Living things and their habitats

**Question:**   Is everything alive?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **NB: Children should take part in practical activities throughout.**  **To know the difference between what is living, dead and have never lived.**   * *Trees, animals, insects, fish and people are alive* * *Dry leaves on the ground are dead but were once part of a living tree* * *Bones were once part of a living animal or person but are now dead* * *Anything plastic, metal or stone has never been alive*   **To know that most living things live in habitats to which they are suited and describe how this provides basic needs**   * *Look at a desert, ice, woodland, rain forest, sea, beach,  habitat* * *Animals adapt to their environment*   **To know how animals suit to their habitats**   * *All living organisms need food to survive* * *Plants make their own food*   **To know what a micro- habitat is and explore one**   * *Micro – habitat could be a bug hotel or worms in the school grounds*   **To know simple food chains**   * *Plants make their own food* * *Plants are eaten by other animals* * *Animals become food for other animals* * *Animals that eat others are carnivores*   **To know about the work of David Attenborough and how he studies animals in their habitats (Aspiration)**   * *Attenborough studies animals in their natural environment - identify what he has helped us learn more about.*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Explore the world around them and raise their own simple questions.  \* Experience different types of science enquiries, including practical activities.  \* Begin to recognise ways in which they might answer scientific questions.  \* Ask people questions and use simple secondary sources to find answers.  \* Use their observations and ideas to suggest answers to questions.  \* Talk about what they have found out and how they have found it out. | **Core vocabulary:**  **Tier 3**  Food chains  Key  Producer  Consumer  Prey  predator  carnivores  adaptation  **Tier 2**  Living  environment  Habitat |
| **Curriculum threads to be covered:-**  **Reading** –   * Listening to, discussing and expressing views about a wide range of non-fiction at a level beyond that at which they can read independently. * Discussing and clarifying the meanings of words, linking new meanings to known vocabulary. * Drawing on what they already know or on background information and vocabulary provided by the teacher. * Answering and asking questions. * Participate in discussion about books, poems and other works that are read to them and those that they can read for themselves, taking turns and listening to what others say   **Computing –**  **British Values** – **To encourage students to accept responsibility for their behaviour, show initiative, and to understand how they can contribute positively to the lives of those living and working in the locality of the school and to society more widely** *(grow in awareness that a healthy environment: plants and animals has a healthy impact on humans too- our actions can have an impact on nature and vice versa).*  **PSHE** – Health and Wellbeing ˃ Healthy Lifestyles- CORAM Life Education- ***My Body Needs***… (Year 2) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Animals Inc Human Year 1:  To know and identify different types of animals and their structures. To know parts of the human body.  To know a variety of common animals including fish, amphibians, reptiles, birds and mammals.  To know that types of animals can be categorised into carnivores, herbivores and omnivores.  To know the structure of a variety of common animals.  To know, name, draw and label basic parts of the human body  To know about the human senses (communication)  EYFS-ELG 14 The world | | |

**Year 4 Science Programme of Study - Biology**

**Project:**     Living Things and their Habitats

**Question:**  **Does every living thing have a right to exist?**

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **To know that there are vertebrates and invertebrates and be able to classify them**   * *Vertebrates have a spine and invertebrates don’t*   **To know what keys are and classify animals with them**   * *To use key as a classification tool* * *Trees can be identified using a classification key* * *There can be newly classified species up to the present day*   **To know how to classify groups of animals in more detail**   * *Plants can be categorised too* * *MRS GREN characterisations: movement, reproduction, sensitivity, nutrition, excretion, respiration, growth,* * *Scientists use similarities and differences as a basis for organising animals*   **To know that our world is changing and the causes of this.(World Citizen)**   * *The polar ice caps are melting due to global warming.* * *There is a plastic pollution crisis.*   **To know what extinction and the endangerment of animals is (World Citizen)**   * *WWF map of endangered species* * *There are many reasons why the animals are endangered or even extinct and this can be down to adaptation.* * *Bees are important as explorers and pollinators Fera organisation has reasons why the bees are endangered.*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Raise their own relevant questions about the world around them.  \* Should be given a range of scientific experiences including different types of Science enquiries to answer questions.  \* Talk about criteria for grouping, sorting and classifying; and use simple keys.  \* Make systematic and careful observations.  \* With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions.  \*Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for difference audiences, including oral and written explanations, displays or presentations of results and conclusions. | **Core vocabulary:**  **Tier 3**  classification  extinction  endangered  vertebrates  invertebrates  movement, reproduction, sensitivity, nutrition,  excretion, respiration,  ,  **Tier 2**  animals  plants  variety  change  living  human  growth  environment  Pollution |
| **Curriculum threads to be covered:-**  **Reading-**   * Listening to and discussing a wide range of non-fiction and reference books or textbooks. * Asking questions to improve their understanding of the text. * Retrieve and record information from non-fiction.   **Computing –**  **British Values –**   * **To encourage students to accept responsibility for their behaviour, show initiative, and to understand how they can contribute positively to the lives of those living and working in the locality of the school and to society more widely** (grow in awareness of impact of human choices on the environment). * **To enable students to acquire a broad general knowledge of and respect for public institutions and services in England** (grow in knowledge of valuable services by public institutions to support and protect animals; aware of how we can support them through our daily life choices).   **PSHE -**   * Living in the Wider World ˃Caring for the Environment- CORAM Life Education- ***Logo Quiz*** (Year 4) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Plants: Year 3:  To know what plants need to survive and how this varies from plant to plant: ( world citizen)  Animals Inc Humans: Year 3:  To know that animals and humans need the right types of nutrition  To know humans and some animals have skeletons and muscles for support, protection and movement.  To know the main parts of a skeleton  EYFS-ELG 08 Making relationships             ELG 13 People and communities             ELG 14 The world | | |

**Year 5  Science Programme of Study - Biology**

**Project:**     Living Things and their Habitats

**Question:**   Are animals as intelligent as humans?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **NB: Children should take part in practical activities throughout.**  **To know about asexual and sexual reproduction in plants**   * *Key sexual structure of a flowering plant* * *Amazonian water lilies trap insects* * *Male and female parts of the flowering plant* * *Seeds, pollinate, stamen, petal, pistil , fertilize*   **To know about sexual reproduction in mammals(Health)**   * *They need and male and female* * *They create offspring together* * *Some lay eggs and some give birth to live young*   **To know the work of a leading Scientist Jane Goodall who studied chimpanzees and what they could do in relation to humans (Aspiration) (World Citizen)**   * *Jade Goodall is a naturalist or animal behaviourist* * *She studied chimps in Africa in the 1960s.* * *Total of 40 years studying them* * *She made lots of discoveries such as they could use tools, and hunted for meat and ate it, previously it was believed they only ate meat.* * *They developed personalities*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact.  \* Make their own decisions about what observations to make, what measurements to use and how long to make them for.  \* Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate.  \* Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results.  \*Use their results to make predictions and identify when further observations, comparative and fair tests might be needed. | **Core vocabulary:**  **Tier 3**  Reproduction  Asexual  sexual  Pollinate  Stamen  Petal  Pistil  Fertilize  offspring  **Tier 2**  Cycle  Studied | |
| **Curriculum threads to be covered:-**  **Reading**   * explain and discuss their understanding of what they have read, including through formal presentations and debates, maintaining a focus on the topic and using notes where necessary * provide reasoned justifications for their views.   **Computing** –  **British Values –**   * **To enable students to develop their self-knowledge, self-esteem and self-confidence**. * **To encourage students to accept responsibility for their behaviour, show initiative, and to understand how they can contribute positively to the lives of those living and working in the locality of the school and to society more widely** (explore understanding that humans depend on a healthy plant-life environment for a healthy lifestyle and therefore our choices (which have an impact on plant life) need to be exercised responsibly.   **PSHE**   * Health and Wellbeing ˃Growing and Changing- CORAM Life Education- ***Different Skills*** (Year 5) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Living things: Year 4:  To know that there are vertebrates and invertebrates and be able to classify them  To know what keys are and classify animals with them  To know how to classify groups of animals in more detail  To know that our world is changing and the environment is.(World Citizen)  To know what extinction and the endangerment of animals is (World Citizen)  To know the work of a leading Scientist David Attenborough according to plastic pollution and climate change in particular (World Citizen)  Animals Inc Humans: Year 4:  To know the simple functions of the parts of the digestive system in humans (Health)  To know the different human teeth and their simple functions (Health)  To know how to construct and interpret food chains.  EYFS-ELG 14 The world | | |

**Year 6 Science Programme of Study - Biology**

**Project:**     Living Things and their Habitats

**Question:**   Is Carl Linnaeus’ work important for finding out about living things?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **To know that living things are classified into groups using observable characteristics**   * *Know where to research and find unusual animals and plant* * *Know what is in our natural environment* * *Evolutionary taxonomy is the most modern way of classifying living things. Smaller groups are classified as taxonomic groups.*   **To know about micro organisms and how to classify them**   * *Use knowledge of vertebrates and invertebrates* * *Reasons like body parts, skeletons, features and habitats should be used*   ***To know about reasons given for classifying plants and animals***   * *Introduce to the idea that broad groupings, such as micro-organisms, plants and animals can be subdivided. Through direct observations where possible, they should classify animals into commonly found invertebrates (such as insects, spiders, snails, worms) and vertebrates (fish, amphibians, reptiles, birds and mammals). They should discuss reasons why living things are placed in one group and not another.*     ***To know the work of a leading Scientist Carl Linnaeus (Aspiration)***   * *He was a botantist* * *He spent much of his life collecting and naming plants and animals* * *He came up with a modern method of classifying living things by grouping similar species together* * *He gave everything a name made up of 2 latin words*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why.  \* Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.  \* Make their own decisions about what observations to make, what measurements to use and how long to make them for.  \* Choose the most appropriate equipment to make measurements with increasing precision and explain how to use it accurately. Take repeat measurements where appropriate.  \* Decide how to record data and results of increasing complexity from a choice of familiar approaches: scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.  .  \*Identify scientific evidence that has been used to support or refute ideas or arguments. | **Core vocabulary:**  **Tier 3**  Species  Botanist  **Tier 2**  Search  Modern  Key  Research  Scientist  Unusual  Natural  observations  Classifying  Environment |
| **Curriculum threads to be covered:-**  **Reading**   * continuing to read and discuss an increasingly wide range of non-fiction and reference books or textbooks * reading books that are structured in different ways and reading for a range of purposes   **Computing –**  **British Values –**   * To encourage students to accept responsibility for their behaviour, show initiative, and to understand how they can contribute positively to the lives of those living and working in the locality of the school and to society more widely (exploring knowledge of classification of plants and animals).   **PSHE**   * Health and Wellbeing ˃ Healthy Lifestyles- CORAM Life Education- ***We have more in common than not*** (Year 6) | | |
| **Previous learning which will support the learning and skill development in this topic:**  Living things: Year 4:  To know that there are vertebrates and invertebrates and be able to classify them  To know what keys are and classify animals with them  To know how to classify groups of animals in more detail  To know that our world is changing and the environment is.(World Citizen)  To know what extinction and the endangerment of animals is (World Citizen)  To know the work of a leading Scientist David Attenborough according to plastic pollution and climate change in particular (World Citizen)  Living things: Year 5:  To know about asexual and sexual reproduction in plants  To know about sexual reproduction in humans (Health)  To know the work of a leading Scientist Jane Goodall who studied chimpanzees and what they could do in relation to humans (Aspiration) (World Citizen)  EYFS-ELG 12 Shape, space and measures             ELG 13 People and communities             ELG 14 The world | | |

**Evolution and Inheritance**



**Year 6 Science Programme of Study - Biology**

**Project:**     Evolution and inheritance

**Question:**   Are we the same as our parents?

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| **Curriculum aims**: Be positive, Be respectful, Be resilient, Be independent, Be knowledgeable, Be ambitious, Be confident. | | |
| **Curriculum drivers**: **Communication, Health, World Citizen, Beliefs, Aspiration** | | |
| **Key Knowledge (the non-negotiable facts)**  **To know statements:-**  **Ask the project question at the start of the unit:**  **To know that living things change overtime**   * *Living things all link together and they are classified by how they look, what they eat, where they live etc ( link to living things topic) but there are changes due to environment. Animals are bred selectively for different purposes and to get the best of a species such as cattle and dogs.*   **To know that fossils provide evidence about living things that inhabited the Earth millions of years ago ( links to Rocks in year 3)**   * *There are creatures that have died out such as woolly mammoths, dinosaurs, dodos, sabre tooth tigers and there are skeletons that have been found and show that these creatures existed but died out. These animals were either over hunted or climates changed which caused them to die out. Many of these creatures link to animals that we have now such as the woolly mammoth and the elephant.* * *Archeologists study the bones and uncover new theories. This is all about science and the tests, DNA and studying living things.*   **To know that living things produce offspring and these vary from the parents.**   * *Living things produce similar offspring but we are not identical. Humans and animals can have identical twins or multiple births but the character and person will ultimately be different. ( this objective links directly to year 5 humans topic)*   **To know that animals and plants are adapted to suit their environment in different ways and that adaption may lead to evolution.**   * *Humans and animals and all living things adapt to suit the environment which they live in. Highland cattle such as cows developed a thick coat over time be able to survive in such terrible weathers. There are many flightless birds such as the ostrich, why is that?*   **To know that as Catholics and Christians we believe that God created all living things. (Belief)**   * *When scientists had theories such as Charles Darwin the churches became angry but there is space in the world for science and religion. God created all to be wise and to love the world in which we live in. In the book of Genesis he created man and woman to look after the world and everything in it.*   **To know the work of Charles Darwin in the area of evolution and the studies he made.**   * *Charles Darwin studied creatures on the Galapagos Islands and how they had changed over time.* * *Create your own animal and suggest reasons for wings etc.* * *Also look at famous palaeontologist Mary Anning who developed ideas about fossils and evolution.*   **Refer back to the project question at the end of the unit:** | **Working Scientifically skills from progression document**  \* Use their Science experiences to explore ideas and raise different kinds of questions.    \* Talk about how Scientific ideas have developed over time.  \* Use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.  \* Make their own decisions about what observations to make, what measurements to use and how long to make them for.  \*Identify scientific evidence that has been used to support or refute ideas or arguments.  \* Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas.  \* Use oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations of degree of trust in results. | **Core vocabulary:**  **Tier 3**  Breeding  Evolution  DNA  Archaeologists  Palaeontologist  Offspring  **Tier 2**  Creatures  Identical  Vary  Similar  Adapt  skeletons  Classification  Selective  Environment  Fossils  Existence | |
| **Curriculum threads to be covered:-**  **Reading** –  **Computing** –  **British Values –**   * **To enable students to develop their self-knowledge, self-esteem and self-confidence** *(explore pupils own unique inherited and adapted traits; explore personal beliefs linked with evolution).*   **PSHE** – | | |
| **Previous learning which will support the learning and skill development in this topic:**  Living things: Year 5:  To know about asexual and sexual reproduction in plants  To know about sexual reproduction in humans (Health)  To know the work of a leading Scientist Jane Goodall who studied chimpanzees and what they could do in relation to humans (Aspiration) (World Citizen)  Living things: Year 6:  To know that living things are classified into groups using observable characteristics  To know about reasons given for classifying plants and animals  To know the work of a leading Scientist Carl Linnaeus ( world citizen)  Rocks: Year 3:  To know how to describe fossils in simple terms and how they are formed when things have lived have been trapped within rock.  To know the work of a leading Scientist Mary Anning ( aspirations)  Mary Anning was a famous English fossil hunter. She found a full Ichthyosaurus a marine reptile  EYFS-ELG 13 People and communities  ELG 14 The world | | |

