|  |  | **Science Long Term Plan** **2023 - 2024** |  |  |
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| **Year group**  | **Autumn 1**  | **Autumn 2**  | **Spring 1**  | **Spring 2**  | **Summer 1**  | **Summer 2**  |
| **Foundation**  | All About Me / Family - PLAN Matrices and SS lesson 4-6UTW - • Use all their senses in hands-on exploration of natural materials.• Begin to make sense of their own life-story and family’s history.• Understand the key features of the life cycle of a plant and an animal. | Physics – Light, Space, Electricity and Movement SS lessons 13-18or PLAN matrices UTW - •Use all their senses in hands-on exploration of natural material. • Explore collections of materials with similar and/or different properties. • Talk about the differences between materials and changes they notice.Our Changing World - What’s happening to the trees? (Autumn) What’s the weather like today? (Winter) | Chemistry – Objects and materials SS lessons 7,9,10,11,12(7 - link to ‘Who Can Help Us / Superheroes - children build their own homes for animals.9 - link to ‘Supertato’10 & 11 - links to Bakers and Builders and ‘People Who Can Help Us’. 12 - links to Pharmacists as ‘People Who Can Help Us’. UTW - • Explore different materials freely, in order to develop their ideas about how to use them and what to make.• Develop their own ideas and then decide which materials to use to express them.• Join different materials and explore different textures. | What’s happening to the trees? (Spring) What can I grow for my dinner? SS lesson 24 and PLAN Matrices: Food -> Living things and their habitats Links to Traditional Tales:Traditional tales• Jack and the beanstalk• The giant turnipOther stories:• Jim and the Beanstalk by Raymond Briggs• Titch by Pat Hutchins• Oliver’s Vegetables by Alison Bartlett & Vivian French• We Planted a Pumpkin by Rob RamsdenUTW - • Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties. • Plant seeds and care for growing plants. • Understand the key features of the life cycle of a plant and an animal. • Begin to understand the need to respect and care for the natural environment and all living things. | Ready Steady Grow/ Biology: Animals and Plants -PLAN Matrices / SS lessons 1-6•Use all their senses in hands-on exploration of natural materials.• Explore collections of materials with similar and/or different properties.• Begin to understand the need to respect and care for the natural environment and all living things.  | Our Changing World - What’s happening to the trees? (Summer)  Holidays - What’s the weather like today? (Summer) UTW (Holidays) • Use all their senses in hands-on exploration of natural materials.• Explore collections of materials with similar and/or different properties.• Talk about the differences between materials and changes they notice.UTW (Weather)• Explore the natural world around them.• Describe what they see, hear and feel whilst outside.• Understand the effect of changing seasons on the natural world around them. |
| **Year 1**  | **Everyday Materials**(Pearl Agyakwa)SS lessons 1-12HS - Looking at Animals *Distinguish between an object and the material from which it is made* *describe the simple physical properties of everyday materials* *compare and group together a variety of everyday materials on the basis of their simple physical properties*WS - using senses to observe closely -identifying, naming and sorting materials (group and classify them using separate and overlapping sorting rings, simple tables and Carroll diagrams)- compare the properties of different materials- design and carry out simple tests to make fair comparison- record findings in a variety of ways and use the evidence from the tests to classify and sort materials according to their properties  | **Looking at Animals**(Jemma Dias)SS lessons 1,2,5,6 & EL1*Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals* *identify and name a variety of common animals that are carnivores, herbivores and omnivores* *describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)*WS - making careful observations- gathering and recording data to help them to answer question*s.* | **Using our Senses**(Cliona Kelly)SS lessons 1-5*identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense*-carry out a variety of comparative tests and identifying and classifying enquiries- communicate learning in different ways, including orally, and using talk tools to help them to record their responses- organise any data that they collect using tables and tally charts as appropriate, and look for simple patterns, for example, about their likes and dislikes.  | Our Changing World(Jemma Dias recap) | **Plants**(Angie Burnett) SS lessons 1,4 & 5*identify and name a variety of common wild and garden plants, including deciduous and evergreen trees* *identify and describe the basic structure of a variety of common flowering plants, including trees*WS -making careful observations- grouping and comparing evidence from the natural world- orally using talk tools to record their thinking, in drawings, writing, simple tables and charts | **Plant Detectives** SS lessons 1,3,4 & 5 *identify and name a variety of common wild and garden plants, including deciduous and evergreen trees* *identify and describe the basic structure of a variety of common flowering plants, including trees*WS- observing closely-identifying and classifying -comparing and contrasting - use simple vocabulary to describe their observations -identify similarities and differences -group the evidence they collect in different ways |
| **Sensing Seasons** SS lessons 1,3,4,5*observe changes across the four seasons* *observe and describe weather associated with the seasons and how day length varies*WS- making careful observations-asking answering questions -gathering and interpreting data | **Animal Antics** SS lessons 1 & EL1*identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals* *identify and name a variety of common animals that are carnivores, herbivores and omnivores* *describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)*WS - making careful observations- collecting evidence -identifying patterns in the data that they collect |
| Sensing Seasons (Seasonal Change – weather walks at the end of each term and National Curriculum coverage through SS lessons in Summer 1) |
| **Year 2**  | **Materials – Good Choices**(Dr Magdalena Wajrak)SS lessons 2,3,4,5,8 & EL2*identify and compare the suitability of a variety of everyday materials for particular uses*WS - classifying materials- carrying out comparative tests for different properties- using the results of their tests to suggest suitable (good) choices for a particular purpose | **Materials – Shaping Up**(Kathryn Waring)SS lessons 1-6*find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching*WS - carry out identifying and classifying enquiries and comparative tests- record using photographs, labelled drawings, Venn diagrams, tables and bar chart - measure using non-standard or standard measures - compare their findings with those of other children | **Growing Up**(Danielle Johnson)SS lessons 1-EL1*notice that animals,**including humans, have**offspring which grow**into adults**find out about and**describe the basic needs**of animals, including**humans, for survival**(water, food and air)*WS - finding out information from secondary sources* observing changes over time
* identifying and classifying
* noticing patterns
 | **Take Care** (-)SS lessons 1-EL1*describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene*WS - identifying and classifying food* using tables, and Venn and Caroll diagrams
* make observations and collect data while carrying out exercises
* use their observations and ideas to suggest answers to questions
 | **What is your Habitat?** (Emma Dunne)SS lessons 1-3*explore and compare the differences between things that are living, dead, and things that have never been alive* *identify that most living things live in habitats to which they are suited*  *describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on* *each other*WS - making careful observations over time, using simple equipment - recording observations in a range of different ways- use data to suggest answers to questions | **Our Changing World** (-)SS lessons 1-4 *identify and name a variety of plants and animals in their habitats, including micro-habitats* *describe how animals obtain their food from plants and other animals, using the idea of a simple food chain**identify and name different sources of food*WS- WS - making careful observations over time, using simple equipment - recording observations in a range of different ways- use data to suggest answers to questions  | **The Apprentice Gardener**(Dr Kelsey Byers)SS lessons 1,2,3,4,7,8 & 9*observe and describe how seeds and bulbs grow into mature plants**find out and describe how plants need water, light and a suitable temperature to grow and stay healthy*WS - observing changes over time * conducting comparative tests
* identifying and classifying
* pattern finding
* research using secondary sources (videos)
* recording observations
* collecting and presenting data
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| **Year 3**  | **Rock Detectives**(Anjana Khatwa)SS lessons 1,2,3,6,8,9 & 10*compare and group together different kinds of rocks on the basis of their appearance and simple physical properties* *recognise that soils are made from rocks and organic material* *describe in simple terms how fossils are formed when things that have lived are trapped within rock*WS - carry out tests to establish the hardness and permeability of different kinds of rocks- make comparisons and draw conclusions based on their observations | **The Power of Forces**(Rafsan Chowdury)SS lessons 1-7*compare how things move on different surfaces notice that some forces need contact between two objects**observe how magnets attract or repel each other and attract some materials and not others* *compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet**identify some magnetic materials*  *predict whether two magnets will attract or repel each other depending on which poles are facing*WS - compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet.- carry out comparative and fair tests to investigate the strength of magnets and how objects move on different surfaces- make predictions as to whether two magnets will attract or repel each other, depending on which poles are facing | **Light – Can you see me?**(Professor Colin Webb)1,2,5,6,7 & 8*recognise that they need light in order to see things and that dark is the absence of light* *notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect eyes* *recognise that shadows are formed when the light from a light source is blocked by a solid object* *find patterns in the way that the size of shadows change*WS - ask and answer their own questions about light and shadow as well as investigate how some materials block more light than others* sorting objects according to how much light they block
* conduct simple shadow investigations
* develop the idea of explaining their judgements
 | **Amazing Bodies** Dr Amy Pickering 1,2,4,6 & 7*identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat* *identify that humans and some other animals have skeletons and muscles for support, protection and movement*WS - ask and answer their own questions about the human body and diet through classifying, pattern-seeking investigations and by carrying out research using secondary sources- have opportunities to gather data and record and present these in a range of ways | **Our Changing World**(-)3,5,6,7 & 8*identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers**explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant* *investigate the way in which water is transported within plants*WS - ask and answer their own questions about plants through classifying, observing over time, conducting fair test investigations and using secondary sources. - make and record detailed observations using labelled and annotated diagrams. | **How does your Garden Grow?**(Dr Ben Woodcock)1,2,3,4,6,7 & 10*explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal*WS - make careful observations of plants, leaves, seeds, fruits, berries and flowers.  - use observations to identify how plants change throughout the year- observe changes that take place over time, noticing patterns in the measurements and observations they make, as they grow sunflower seeds and plants through a complete growth cycle |
| **Year 4**  | **Good Vibrations**(Caroline Riggs)SS lessons 1-7*identify how sounds are made, associating some of them with something vibrating* *recognise that vibrations from sounds travel through a medium to the ear* *find patterns between the pitch of a sound and features of the object that produced it* *find patterns between the volume of a sound and the strength of the vibrations that produced it* *recognise that sounds get fainter as the distance from the sound source increases*WS- look for patterns between the volume of a sound and the strength of the vibrations that produced it-explore the pitch of a sound and ways in which it can be changed -investigate how to make and change the sounds produced -set up simple comparative and fair tests, take measurements, including using data loggers, and report on their findings | **Human Impact** (Anwar Khan) SS lessons 1-4*recognise that environments can change and that this can sometimes pose dangers to living things*WS -plan and carry out a litter survey, using a tally chart to record datA-group items into categories-present findings by constructing and labelling pictograms and bar charts-present information as oral and written reports, posters -Gather information forms secondary sources | **Our Changing World** (-)SS lessons 1-3*explore and use classification keys to help group* *identify and name a variety of living things in their local and wider environment*WS-make careful observations -classify leaves  | **In a State**(Candy Jiang)SS lessons 1,2,3,5,6,8,9 & 11*compare and group materials together, according to whether they are solids, liquids or gases* *observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)* *identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature*WS - identify patterns in the data and use these to answer their investigation questions-use thermometers and data loggers, applying their mathematical knowledge of the measurement of temperature in degrees Celsius and learning to interpret a line graph (data logger trace) of temperature and time. | **Who am I?**(Ahna Skop)SS lessons 1,3 & 4*Identify and classify animals*  *identify characteristics of the main vertebrate groups and some of the common invertebrate groups*WS - Make detailed observations and learn which features are useful for identification and classification- present information in labelled diagrams, lists, sorting diagrams and keys-interpret information presented in a key | **Where Does All the Food Go?** (-)SS lessons 2,4,5,6,7 & 8*describe the simple functions of the basic parts of the digestive system in humans* *identify the different types of teeth in humans and their simple functions* *construct and interpret a variety of food chains, identifying producers, predators and prey*WS - ask and answer questions about teeth, digestion and food chains by carrying out research using secondary sources- group and classify teeth by their function and relate this to diet -carry out comparative and fair tests on different types of toothpaste and to record and present data in a range of ways | **Switched On**(Erusa Alizie)SS lessons 1-7*identify common appliances that run on electricity construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers* *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* *recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit* *recognise some common conductors and insulators, and associate metals with being good conductors*WS- make observations and describe how circuits work using scientific language- communicate using labelled and annotated drawings-.plan and carry out a classifying enquiry, recording findings using tables, Venn and Carroll diagrams- recognise that generalisations cannot be made from small amounts of evidence  |
| **Year 5 (2024/2025)** | **The Earth & Beyond**(Dr Karen Aplin)SS lessons 1-8 | **All Change** (Dr Raquel Prado)SS lesson 1-5  | **Everyday Materials**(-)SS lessons 1-4 | **Feel the Force**(Jyoti Sehdev)SS lessons 1,2,3,4,5 & 9  | **Reproduction in Plants & Animals**(Dr Kelsey Byers)SS lessons 1-6  | **Circle of Life**(Dr Kelly Blacklock)SS lessons 1-7  | **Marvellous Mixtures**(Dr Zoe Myers)SS lessons 1-4 | **Get Sorted** **(-)**SS lessons 1-3 |
| **Year 6 (taught to Year 4/5 2023/2024)** | **Everything Changes**(Laura Benson) SS lessons 1,2,4,6,7,9 & 10 | **Body Pump and Body Health**(Letizia Delle Vedove)SS lessons (Body Pump - 1,2,4,6 & 7 and Body Health – 3,5 & 7 | **The Nature Library**(Dr Anastasia Aliferi)SS lessons 1,2,3,4,6 & 7 | **Our Changing World**(Emma Dunne)SS lessons 1-5 | **Light up your World**(Professor Colin Webb)SS lessons 1-9  | **Danger – Low Voltage**(Daniel Azahan)SS lessons 1-4 |

