|  |  | | **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 4-6  UTW -  • 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 13-18  or 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 turnip  Other 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 Ramsden  UTW -  • 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 1-12  HS - 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 | | |
| **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 | |

