Little Leigh Primary School

Science Curriculum Map Key Stage 1 and 2

|  |  |  |
| --- | --- | --- |
| **As Scientists** | **Year 1** | **Year 2** |
| **Plants**(names and structure of plants)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.**STEM TEXTS****Jack and the Beanstalk****Ten Seeds** Ruth Brown**Jasper’s Beanstalk** Nick Butterworth**Animals, including humans** (skeletons)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) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.**STEM TEXTS****Little Red Riding Hood****The Wolf’s Story** – Toby Forward**Once there were giants –** Penny Dale**The Family Book –** Todd Parr**My First Book of Garden Birds** – RSPB**Gruffalo –** Julia Donaldson **Funnybones –** Janet and Allan Ahlberg**Quiet –** Paul Bright**Crocodiles don’t brush their teeth** Fancy & Wilson-Max**Everyday Materials**Distinguish between an object and the material from which it is made.Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials.Compare and group together a variety of everyday materials on the basis of their simple physical properties.**STEM TEXTS****Three Little Pigs****Kipper’s Rainy Day** Mick Inkpen**The Slimy Book** Babette Cole**Biscuit Bear** Grey & Cape**Seasonal Changes**Observe changes across the four seasons.Observe and describe weather associated with the seasons and how day length varies.**STEM TEXTS****One Year with Kipper –** Mick Inkpen**Wild Weather Book –** Fiona Danks and Jo Schofield**Alfie Weather –** Shirley Hughes**The Owl who was Afraid of the Dark** J Tomlinson**Moonbear’s Shadow** Frank Asch**Kipper’s Monster** Mick Inkpen**The Gruffalo’s Child** Julia Donaldson**SKILLS**Identify, group and sort objects or living things. Simple equipment to help me observe the world closely (e.g. hard lenses)Ask simple questions and understand they may have a number of different answers.  | **Living things and their Habitats (SDG 14/15)**(simple food chains/suitable habitats)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 and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. 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, and identify and name different sources of food.**STEM TEXTS****Little Red Riding Hood****The Wolf’s Story** – Toby Forward**My First Book of Garden Birds** – RSPB**Nature Detective Series –** Wayland**All Kinds of Nests** - Eun-Gyu Choi**Tadpole’s Promise –** Jeanne Willis and Tony Ross**Plants (conditions for growing)**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.**STEM TEXTS****Jack and the Beanstalk****Ben Plants a Butterfly Garden** Kate Petty & Alex Scheffler**Oliver’s Vegetables** Vivian French**Fran’s Flower** Lisa Bruce**Animals including Humans (Health and Growth) (SDG 3)**Identify 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).Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.**STEM TEXTS****Handa’s Surprise** – Eileen Brown**Tadpole’s Promise –** Jeanne Willis and Tony Ross**Selfish Crocodile –** Faustin Charles**Uses of Everyday Materials**Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.**STEM TEXTS****Three Little Wolves and the Big Bad Pig -** Eugene Trivisas**The Queen’s Knickers** Nicholas Allan**Traction Man is Here!** Grey & Cape**SKILLS**Use appropriate scientific language to communicate my ideas, what I have done and what I found out.Notice similarities, differences and patterns.Gather and record data to help answer questions.Use my observations and ideas to suggest answers to questions.Perform simple comparative tests. |
| ***‘The Secret of Black Rock’* – link animals to sea animals** | ***Bog Baby*  - Living Things and their Habitats – link in pond dipping activity.** ***The Night Gardener –* Plants (conditions for growing)*****Granddad’s Islands –* Uses of Everyday Materials – design a boat for granddad using the best materials which float.** **Habtats – Jungle Habitats – food chains.** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| **As Scientists** | **Plants**(names and structure of plants)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.Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal**STEM TEXTS****The story of Frog Belly Rat Bone** – Timothy Basil Ering**The Hidden Forest** – Jeannie Baker**George and Flora’s Secret Garden** – Jo ElworthyGeorge saves the world by lunchtime – Jo Elworthy**Stick Man** – Julia Donaldson & Axel Scheffler**Seeds of Change:Wangari’s Gift** **to the World** – Sonia Lynn Sadler**Dandelion Seed** – Joseph Anthon**Animals, including humans** (skeletons)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.**Rocks & Fossils*** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
* Describe in simple terms how fossils are formed when things that have lived are trapped within rock.
* I can recognise that soils are made from rocks and organic matter.
* **STEM TEXTS**

**A Pebble in My Pocket** – Meredith Hooper**\*Light &Shadows*** 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 their 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.
* **STEM TEXTS**

**The Firework Maker’s Daughter** – Phillip Pullman**Keesha’s Bright Idea** – Eleanor May**Can’t You Sleep, Little Bear?**  - Martin Waddell**The Owl Who Was Afraid of the Dark** - Gill Tomlinson**Night Monkey, Day Monkey** by Julia Donaldson**The Dark** by Lemony Snicket**\*\*Forces and Magnets** (friction/magnets)* Compare how things move on different surfaces.
* Notice that some forces need contact between two objects, but magnetic forces can act at a distance.
* Observe how magnets attract or repel each other and attract some materials and not others. Describe magnets as having two poles.
* Predict whether two magnets will attract or repel each other, depending on which poles are facing.
* Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
* **STEM TEXTS**

**Clockwork**  - Philip Pullman**Lighthouse Keepers Lunch**  - Ronda & David Armitage**Mr Archimedes’ Bath** – Pamela Allen**Egg Drop** – Mini Grey**Mrs Armitage Queen of the Road** – Quentin Blake**SKILLS**• Talk about criteria for grouping, sorting and classifying, and use a simple key. • Identify differences, similarities or changes to simple scientific ideas and processes. • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Gather, record, classify and present data in a variety of ways to help answer questions.**\*Texts****‘*Return’ Aaron Becker******‘Iron Man’ by Ted Hughes and Laura Carlin*** | **\*Living things and their Habitats (SDG 14/15)**(grouping and simple classifying/changes to habitats can pose dangers)* Recognise that living things can be grouped in a variety of ways.
* Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.
* Recognise that environments can change and that this can sometimes pose dangers to living things.
* **STEM TEXTS**

**Vanishing Rainforest –** Richard Platt**Dear Greenpeace** – Simon James**Dinosaurs & All That Rubbish** – Michael Foreman**Journey to the River Sea** – Eva Ibbotson**The Great Kapok Tree** – Lynne Cherry**Window** – Jeannie Baker**Where the Forest Meets the Sea** – Jeannie Baker**The Whale’s Song** – Dan Sheldon**The Morning I Met a While** – Michael Morpurgo**One World** – Michael Foreman**Flotsam and Jetsam** – Tanya Landman**Tidy** – Emily Gravett**Amazing Animal Journeys** – Chris Packlham**Animals, including humans**(teeth, eating and digestion) **(SDG 3)*** 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.

**STEM TEXTS****Demon Dentist** – David Walliams**Crocodiles Don't Brush Their Teeth** – Colin Fancy**Horrid Henry Tricks the Tooth** **Fairy**  - Francesca Simon**The Little Mole Who Knew it was none of his business** – Werner Holzworth**States of Matter**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.

**Sound** * 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.
* **STEM TEXTS**

***Polar Bear Polar Bear, What Do You Hear?*** – Eric Carle***Moonbird*** - Joyce Dunbar (Explores deafness & Communcation)***What the Jackdaw Saw*** - Julia Donaldson ( Explores sign language  - written by a group of deaf children in a workshop with Julia Donaldson)***Little Beaver and the Echo***  - Amy MacDonald***Dachy's Deaf*** - Jack Hughes**Electricity (SDG 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.

**SKILLS**Set up simple practical enquiries, comparative and fair tests • Report on findings from enquiries, including oral and written explanations, displays or presentations. • Use results to make simple conclusions, make predictions and suggest improvements. • Use simple scientific evidence to answer questions or to support my findings.**\*Texts****‘*The Whale’* by Vita Murrow****‘*Leaf*’ by Sandra Dieckman** | **Living things and their Habitats (SDG 14/15)**(life-cycles)* Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.
* Describe the life process of reproduction in some plants and animals.
* **STEM TEXTS**

**Tracy Beaker** – Jacqueline Wilson**Hetty Feather**  - Jacqueline Wilson**Mummy Laid an Egg** – Babette Cole**Hair in Funny Places** – Babette Cole**Animals, including Humans**(changes in humans as they grow, health and circulation) **(SDG 3)**Describe the changes as humans develop to old age.**Properties and Changes of Materials*** Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.
* Identify that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.
* Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.
* Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic
* Demonstrate that dissolving, mixing and changes of state are reversible changes.
* Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.
* **STEM TEXTS**
* **Itch –** Simon Mayo
* **Stormbreaker** – Anthony Horrowitz

**The Tale of the Two Bad Mice –** Beatrix Potter**Angela Sprocket’s Pockets –** Quentin Blake**Stormbreaker –** Anthony HorowitzYoung Bond - Steve Cole**Kensuke’s Kingdom –** Michael Morpurgo**Forces**(gravity, friction, air resistance, water resistance, levers, pulleys and gears)* Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object
* identify the effects of air resistance, water resistance and friction, that act between moving surfaces.
* Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.
* **STEM TEXTS**
* **Leonardo’s Dream \_** Hans de Beer
* **The Tin Snail –** Cameron McAllister

**Earth and Space*** Describe the movement of the Earth, and other planets, relative to the Sun in the solar system
* Describe the movement of the Moon relative to the Earth
* Describe the Sun, Earth and Moon as approximately spherical bodies.
* Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the sun across the sky.
* **STEM TEXTS**

**Fortunately The Milk** – Neil Gaiman**The Terrible Thing That Happened To Barnaby Rocket** – John Byne**The Voyage of Mae Jemison**- Susan Canizares**Baby Brains**  - Simon James**Zoo in the Sky** – Jacqueline Mitton**Man on the moon** ( A Day in the life of Bob)- Simon Bartram**Black Holes and Uncle Albert** – Russell Stannard**Q Pootle 5**  - Nick Butterworth**The Adventures of TinTin** - **Explorers on the Moon** - Herge**George’s Secret Key to the Universe** – Lucy and Stephen Hawking**SKILLS**Recognise which equipment to use for which investigation. • Plan different types of scientific enquiries to answer questions including recognising and controlling variables. • Use a range of scientific equipment to take measures and repeated readings. • Use scientific diagrams, labels, classification keys, tables, scatter graphs, bar and line graphs to record my data and results. • Make predictions using my test results to set-up comparative and fair tests. | **Living things and their Habitats (SDG 14/15)**(classifying including micro-organisms)* Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.
* Give reasons for classifying plants and animals based on specific characteristics.
* Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.
* Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.
* Describe the ways in which nutrients and water are transported within animals, including humans.

**STEM TEXTS****Beetle Boy -** M G Leonard**Skellig–** David Almond**Pig Heart Boy** – Malorie Blackman**Evolution and Inheritance*** Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
* Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.
* Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.
* **STEM TEXTS**

**Ravenwood –** Andrew Peter**The Arrival**  - Shaun Tan**Our Family Tree –** Lisa Westberg Peters**Dogs –** Emily Gravett**What Mr Darwin Saw –** Mick Manning & Brita Granstrom**Dear Olly  -** Michael Morpurgo**Amazing Animal Journeys  -** Chris Packham* **One Smart Fish –** Christopher Wormell

**Light*** Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.
* Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.
* Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

**Electricity (SDG 7)*** Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.
* Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.
* Use recognised symbols when representing a simple circuit in a diagram.

**STEM TEXTS****Blackout-** John Rocco**Hitler’s Canary** – Sandi Toksvig**Goodnight Mister Tom** – Michelle Magorian**SKILLS**• Use appropriate scientific language to explain, evaluate and communicate my methods and finding. Ask questions about the scientific topics I study, and select and plan the most appropriate way to answer these questions. • Report and present my findings in oral and Progression of Key Skills in Science (Y1-6) 3 written forms such as displays and other presentations (e.g. explaining and concluding my findings, and explaining the degree of trust in my results) • Recognise scientific evidence that can be used to support or refute ideas and arguments. |
| **Thematic Texts** | **‘S*een and Not Heard’* by Katie May Green****‘*Into the Forest’* by Anthony Browne** | ***‘Manfish’* Jacques Cousteau*****‘The Whale’* by Vita Murrow (strong art links)*****‘The Lost Happy Endings’* by Carol Ann Duffy** | ***‘FArTHER’* by Grahame Baker Smith*****‘The Errand’* by Leo Fleur****‘King Kong’ by Anthony Browne (link with ‘*The Man Who Walked Between the Towers’* by  Mordicai Gerstein****‘The Lost Book of Adventure *Unknown’* by Unknown Adventurer and Teddy Keen** | **‘*Hansel and Gretel’* by Neil Gaiman****‘*The Ways of the Wolf’* by Smriti Prasadam-Halls** |