Lancasterian Primary School

A safe and welcoming learning community where:

- we all aim high;
- everyone is included;
- creativity is valued.

KS1/2 Curriculum Map

SCIENCE

Physics
Chemistry
Biology
Climate Change

	Y1	Y2	Y3	Y4	Y5	Y6
Wk1&2	• Plants – Biology • 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. Suggested Extended Abstract/Greater Depth Task: Identify similarities and differences between various local plants, including their structure	• Uses of everyday materials – Chemistry • 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. Suggested Extended Abstract/Greater Depth Task: Identify that some changes to shapes are permanent and others are temporary, and that this can influence their uses	• Animals including humans – Biology • 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 Suggested Extended Abstract/Greater Depth Task: Create a diet plan for an athlete (with additional nutritional requirements provided)	• States of matter – Chemistry • 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. Suggested Extended Abstract/Greater Depth Task: True or false: Salt and flour are both liquids because they can be poured?	• Forces – Physics • 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. Suggested Extended Abstract/Greater Depth Task: Identify ways in which friction may be useful (e.g. bicycle handlebar grips) or a nuisance (e.g. bicycle chain)	• Light – Physics • Recognise that light appears to travel in straight lines • 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. Suggested Extended Abstract/Greater Depth Task: Explore similarities and

						differences between how light and sound travels
Wk3&4	• Animals including humans – Biology • Animals including humans –Biology • 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. Suggested Extended Abstract/Greater Depth Task: Create a list of features (e.g. eyes) which are common across many or all animals	• Living things and their habitats - Biology • 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 microhabitats • Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different Suggested Extended Abstract/Greater Depth Task: Explain why there may be a limit as to how many of a certain living thing can live in a particular area	• Rocks – Chemistry • 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 • Recognise that soils are made from rocks and organic matter. Suggested Extended Abstract/Greater Depth Task: Research and explain how coal is formed • Light – Physics • 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 an opaque object • Find patterns in the way that the size of shadows change. Suggested Extended Abstract/Greater Depth Task:	• Sound – Physics • 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 Suggested Extended Abstract/Greater Depth Task: Compare the effectiveness of different materials in terms of their ability to transmit sound	• Earth And Space – Physics • 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. Suggested Extended Abstract/Greater Depth Task: True or false: the further out a planet is, the longer its orbit is around the Sun. Justify your answer	• Evolution and inheritance – Biology • 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 Suggested Extended Abstract/Greater Depth Task: Explain how selective breeding may result in offspring with certain features, e.g. pedigree dogs with a certain shape or colour

			Explain what happens when there is an eclipse of the sun			
Wk5	• Poaching – Climate Change • To explore, research and explain the impact of these current affairs on the world and our lives. ***See the separate Environmental curriculum documents in the science folder.*** Suggested Extended Abstract/Greater Depth Task: Debate which animals deserve the most protection	• Habitat Loss – Climate Change • To explore, research and explain the impact of these current affairs on the world and our lives. ***See the separate Environmental curriculum documents in the science folder.*** Suggested Extended Abstract/Greater Depth Task: Explain how we can work out whether habitats are being lost	• Plastic pollution – Climate Change • To explore, research and explain the impact of these current affairs on the world and our lives. ***See the separate Environmental curriculum documents in the science folder.*** Suggested Extended Abstract/Greater Depth Task: Create a product that is usually made from plastic by using an suitable alternative material (suggestions given from teacher for product)	• Global warming and extinction rebellion – Climate Change • To explore, research and explain the impact of these current affairs on the world and our lives. ***See the separate Environmental curriculum documents in the science folder.*** Suggested Extended Abstract/Greater Depth Task: Describe why people may be driven to extreme action in order to protest against government inaction on climate change	• Diet/Farming – Climate Change • To explore, research and explain the impact of these current affairs on the world and our lives. ***See the separate Environmental curriculum documents in the science folder.*** Suggested Extended Abstract/Greater Depth Task: Explore the main reasons why reducing and eliminating our meat intake benefits the planet	• Effects of Global warming – Climate Change • To explore, research and explain the impact of these current affairs on the world and our lives. ***See the separate Environmental curriculum documents in the science folder.*** Suggested Extended Abstract/Greater Depth Task: Imagine the planet in 2050; what might be different/the same in terms of effects of climate change? Can you design of a building that is adapted to these changes?
Wk6&7	• Everyday Materials – Physics • 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.	• Plants – Biology • 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. Suggested Extended Abstract/Greater Depth Task: Some plants live under the water- in ponds or oceans. How are their needs different to those plants that live on land?	• Forces and Magnets - Physics • 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 • Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet,	• Electricity – Physics • 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	• Properties and changes of materials – Chemistry • 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 • Know 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	• Animals including humans – Biology • 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 Suggested Extended Abstract/Greater Depth Task:

	Suggested Extended Abstract/Greater Depth Task: Compare the same object made from different materials in terms of its effectiveness		and identify some magnetic materials • Describe magnets as having two poles • Predict whether two magnets will attract or repel each other, depending on which poles are facing Suggested Extended Abstract/Greater Depth Task: Describe ways in which the attraction and repulsion of magnets is used in daily life (e.g. handbag clasps)	lights in a simple series circuit • Recognise some common conductors and insulators, and associate metals with being good conductors. Suggested Extended Abstract/Greater Depth Task: Explore why some appliances run on mains electricity whilst others run on battery	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 Suggested Extended Abstract/Greater Depth Task: Provide examples of when changes being irreversible are a good thing, e.g. making bricks, or not, e.g. non-biodegradable plastic bags	Predict what might happen to someone's organs if they only ever ate McDonalds food; which organs would be most affected and how? • Living things and their habitats – Biology • Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals • Give reasons for classifying plants and animals based on specific characteristics Suggested Extended Abstract/Greater Depth Task: Explain why other features are less useful as a basis for classification, such as colour
Wk8&9	• Seasonal Change – Physics • Observe changes across the four seasons • Observe and describe weather associated with the seasons and how day length varies Suggested Extended Abstract/Greater Depth Task: Make and test predictions relating to changing day length and weather patterns	• Animals including humans – Biology • 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) • Describe the importance for humans of exercise,	• Plants – Biology • 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	• Living things and their habitats – Biology • 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	• Living things and their habitats – Biology • 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. Suggested Extended Abstract/Greater Depth Task:	• Electricity – Physics • 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

		eating the right amounts of different types of food, and hygiene. Suggested Extended Abstract/Greater Depth Task: Suggest how the basic needs of different animals influences their choice of habitat	• 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. Suggested Extended Abstract/Greater Depth Task: Contrast the features of two very different plants (e.g. sunflower v ivy) and hypothesise as to why they may be this way	and that this can sometimes pose dangers to living things. Suggested Extended Abstract/Greater Depth Task: Devise own classification keys to group living things • Animals including humans – Biology • 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. Suggested Extended Abstract/Greater Depth Task: Debate and explain why humans have ended up at the top of the food chain	Consider why there are different forms of reproductive systems for animals such as egg laying, larvae and live young • Animals including humans – Biology • Describe the changes as humans develop to old age. Suggested Extended Abstract/Greater Depth Task: Explain how old age is – in many way – similar to early life (e.g. muscular strength)	the on/off position of switches • Use recognised symbols when representing a simple circuit in a diagram Suggested Extended Abstract/Greater Depth Task: Explain how the switch for a fridge light works. Draw the circuit.

IT Resources

LGFL - Busythings
LGFL – Virtual Experiments Years 1&2
LGFL – Virtual Experiments Years 3 & 4
LGFL – Virtual Experiments Years 5 & 6
LGFL – Switched On Science
LGFL – Space Adventures – Mission to the Moon KS2 resource
LGFL – Polar Explorations KS2 resource
Steam School Years 5 & 6

Textmarker
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