Curriculum Coverage By Subject in Year 3- Based on LPDS National Curriculum Assessment Materials

Art and Design
End of Year Expectations

Year 3	▶ Choose their own starting point from a range of ideas e.g. a visit to an art gallery, an artefact, digital images, experiences. ▶ Begin to record their thoughts and experiences in a sketch book / 'ideas journal'. ▶ Explain the reasons for their ideas, and discuss and answer questions about how their ideas have developed. ▶ Show confidence and independence when working creatively e.g. with a range of media on different scales.	▶ Discuss the styles of artists, craft makers or designers and use this to inform their own work. ▶ Begin to understand the historical and/or cultural significance of a chosen artist /art form.	▶ Beginning to use learnt techniques in drawing, painting, sculpture and other art, craft and design in different contexts, e.g. work on different scales both independently and collaboratively. ▶ Demonstrate control of chosen tools and materials to create a desired effect, e.g. carve a design into a printing block.	▶ Compare ideas, methods and approaches in their own and others' work, e.g. talk about the features they like in a piece of art work. ▶ Use sketch book / 'ideas journal' to adapt their work as their ideas develop, and discuss this with others.

Design and Technology
End of Year Expectations

Year 3	▶ Develop more than one design or adaptation of an initial design. ▶ Plan a sequence of actions to make a product. ▶ Think ahead about the order of their work and decide upon tools and materials. ▶ Propose realistic suggestions as to how they can achieve their design ideas.	▶ Select from a range of tools for cutting, shaping, joining and finishing. ▶ Use tools with accuracy. ▶ Select from materials according to their functional properties. ▶ Use appropriate finishing techniques.	▶ Investigate similar products to the one to be made to give starting points for a design. ▶ Research needs of user. ▶ Decide which design idea to develop. ▶ Consider and explain how the finished product could be improved. ▶ Discuss how well the finished product meets the user's design criteria. ▶ Investigate key events and individuals in design and technology.	▶ Use an increasingly appropriate technical vocabulary for tools materials and their properties. ▶ Understand seam allowance. ▶ Prototype a product. ▶ Sew on buttons and make loops. ▶ Strengthen frames with diagonal struts. ▶ Measure and mark square section, strip and dowel accurately to 1cm. ▶ Incorporate a circuit into a model. ▶ Use electrical systems such as switches bulbs and buzzers. ▶ Use ICT to control products. ▶ Use linkages to make movement larger or more varied.	▶ Follow instructions / recipes. ▶ Join and combine a range of ingredients. ▶ Begin to understand the food groups on the *Eatwell Plate*.

Geography
End of Year Expectations

Year 3	▶ Name and locate a wider range of places in their locality, the UK and wider world.	▶ Use geographical language to describe some aspects of human and physical features and patterns. ▶ Make observations about places and features that change over time.	▶ Ask and answer more searching geographical questions when investigating different places and environments. ▶ Identify similarities, differences and patterns when comparing places and features.	▶ Observe, record, and name geographical features in their local environments.	▶ Use a range of sources including digital maps, atlases, globes and satellite images to research and present geographical information. ▶ Use the eight compass points and recognise some Ordnance Survey symbols on maps.	▶ Express their opinions on environmental issues and recognise how people can affect the environment both positively and negatively. ▶ Communicate geographical information through a range of methods including the use of ICT.

History
End of Year Expectations

Year 3	▶ Use some dates and historical terms when ordering events and objects. ▶ Demonstrate awareness that the past can be divided into different periods of time. ▶ Explore trends and changes over time.	▶ Describe and compare some of the characteristic features and achievements of the earliest civilisations including where and when they appeared. ▶ Describe and give reasons for some of the changes in Britain from the Stone Age to the Iron Age. ▶ Demonstrate more in-depth knowledge of one specific civilisation e.g. Ancient Egypt.	▶ Use sources to address historically valid questions. ▶ Recognise that our knowledge of the past is constructed from different sources of evidence. ▶ Recognise that different versions of past events may exist. ▶ Describe some of the ways the past can be represented.	▶ Discuss some historical events, issues, connections and changes. ▶ Select and organise historical information to present in a range of ways. ▶ Use relevant historical terms and vocabulary linked to chronology.

Music
End of Year Expectations

Year 3	▶ Sing songs (also imitating melody patterns as an echo), speak chants and rhymes in unison, with clear diction, control of pitch and musical expression presenting performances with an awareness of the audience. ▶ Play tuned and untuned instruments with increasing control and rhythmic accuracy, responding through gestures or movement to changes in the speed of the beat.	▶ Listen with extended concentration and begin to express their opinion on a range of live and recorded music. ▶ Explain their ideas and feelings about music using movement, dance and expressive language. ▶ Begin to understand how music can be organised to communicate different moods and effects (e.g. listening to loud and fast music will create a different feeling to slow and quiet). ▶ Determine upwards and downwards direction in pitch when listening and reviewing music.	▶ Begin to improvise and develop rhythmic and melodic material when composing, improving their own and others' work in relation to its intended effect. ▶ Begin to create and combine a variety of the inter-related dimensions when composing (e.g. composing using both dynamics and tempo).	▶ Explore and compare sounds of groups of musical instruments, identifying the differences between them, e.g. strings, woodwind, orchestra, rock band etc. ▶ Begin to explore the history of music, understanding that time and place can influence how and why music is created, performed and heard. ▶ Explore music from a culture different to their own.	▶ Understand that dynamics means volume and can recognise various different levels. ▶ Understand that texture refers to the difference between thick (*many sounds*) and thin (*few*) layers of sounds. ▶ Experience how music can be produced in different ways, including through ICT, and described through relevant established and invented notations.

Physical Education
End of Year Expectations

Year 3	▶ Master most fundamental skills and start to develop sport specific skills. Develop throwing and catching skills using different sports and activities. ▶ Perform using a number of sending and receiving skills with some accuracy. ▶ Travelling - change direction easily. ▶ Perform travelling, rolling, jumping and balancing skills. ▶ Perform freely, translating ideas from a stimulus into movement using dynamic, rhythmic and expressive qualities clearly and with control. ▶ Plan routes around obstacles (e.g. PE apparatus, table / chairs in classroom). ▶ Begin to work cooperatively with others to solve challenges.	▶ Examples of developing sport specific skills may include: ○ Chest pass, bounce pass, swing pass, catching. ○ Dodging and swerving. ○ Underarm bowl. ○ Throwing overarm. ○ Strike a ball with implement. ○ Travelling on hands and feet, balance on large and small body parts.	▶ Develop simple attacking skills in a 3V1 invasion game. ▶ Apply skills and tactics in a range of other games such as net / wall or striking / fielding type activities.	▶ Create and perform sequences of actions (4-6) smoothly in a range of activities such as gymnastic activities and dance. ▶ Share and create dance phrases with a partner and in a small group; repeat, remember and perform these phrases in a dance.	▶ Identify what they do best and what they find difficult. ▶ Make simple assessments of performance based on simple criteria given by the teacher.

Computing
End of Year Expectations

Year 3	▶ Use technology safely and respectfully and have an understanding of how to keep information secure. ▶ Realise the importance of reporting any concerns they have using the internet and other communication technologies, and know some ways in which they can do it. ▶ Develop an understanding of what is acceptable and unacceptable online behaviour. ▶ Realise that not all information on the internet is trustworthy and there is a need to verify its reliability.	▶ Use a variety of software and devices to create digital assets such as programs, graphs and multimedia content for a defined purpose. ▶ Develop their search strategies further by refining their use of keywords and starting to use appropriate key phrases and questions. ▶ Use more complex simulations and understand the effects of changing variables.	▶ Plan and write algorithms and programs using sequence and repetition and further develop their computational thinking strategies to solve problems and errors in their algorithms and programs. ▶ Have knowledge and experience of using a range of different inputs and outputs. ▶ Describe some of components of a computer network and some of the ways in which computer networks can be used.

Languages
End of Year Expectations

Year 3	▶ Identify the meanings of simple words and phrases they hear by matching to an object / picture/ person etc.	▶ Understand a few familiar spoken words and phrases and respond to simple questions e.g. What's your name? How are you? etc. and others depending on topics covered. ▶ Say or repeat some familiar words and short simple phrases Year 3.	▶ Identify the meanings of simple words and phrases they see by matching to an object / picture/ person etc. ▶ Recognise and read out a few familiar words and phrases and are starting to notice the sound spelling patterns.	▶ Write or copy a few simple words or symbols accurately. ▶ Be aware that symbols e.g. accents, umlauts exist and what they do (also capital letters in German).	▶ Understand some basic aspects of language structure e.g. gender, definite and indefinite articles, singular and plural, nouns, adjectives.

Science
Scientific Knowledge and Conceptual Understanding: Year 3 Expectations

Material Properties and Changes – States of Matter	Animals - Health/Nutrition	Animals - Skeletons and Movement
▪ 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). ▫ Solids, liquids and gases can be identified by their observable properties. ▫ Solids have a fixed size and shape (the size and shape can be changed but it remains the same after the action). ▫ Liquids can pour and take the shape of the container in which they are put. ▫ Liquids form a pool not a pile. ▫ Solids in the form of powders can pour as if they were liquids but make a pile not a pool. ▫ Gases fill the container in which they are put. ▫ Gases escape from an unsealed container. ▫ Gases can be made smaller by squeezing/pressure. Liquids and gases can flow.	▪ 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. ▪ An adequate and varied diet is beneficial to health (along with a good supply of air and clean water). ▪ Regular and varied exercise *from a variety of different activities* is beneficial to health (focus on *energy in versus energy out*. Include information on making informed choices).	▪ Identify that humans and some other animals have skeletons and muscles for support, protection and movement. ▪ Identify animals (vertebrates) which have a skeleton which supports their body, aids movement & protects vital organs (e.g. name and locate skull, backbone, ribs, bones for movement/limbs, pelvis and be able to name some of the vital organs protected). ▪ Identify animals without internal skeletons/backbones (invertebrates) and describe how they have adapted other ways to support themselves, move & protect their vital organs. ▫ Know how the skeletons of birds, mammals, fish, amphibians or reptiles are similar (backbone, ribs, skull, bones used for movement) and the differences in their skeletons. ▫ Know that muscles, which are attached to the skeleton, help animals move parts of their body. ▫ Explore how humans grow bigger as they reach maturity by making comparisons linked to body proportions and skeleton growth – e.g. do people with longer legs have longer arm spans? ▫ Recognise that animals are alive; they move, feed, grow, use their senses and reproduce.

Material Properties - Rocks	Animals – Teeth, Eating and Digestion	Forces and Magnets
▪ 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 ▫ Recognise that rocks and soils can feel and look different. ▫ Recognise that rocks and soils can be different in different places/environments.	▪ 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 *(NB Link with types of teeth and eating in this unit but this concept could be developed further in the yr4 Environment / habitats unit).* Describe how teeth and gums have to be cared for in order to keep them healthy.	▪ Compare how some 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, and identify some magnetic materials. ▪ Describe magnets as having two poles (like and unlike poles). ▪ Predict whether two magnets will attract or repel each other, depending on which poles are facing.

Science
Year Group Expectations for Working Scientifically Skills (Grid 1)

Year 3	▪ Observe and record relationships between structure and function (linked to Y3 PoS). ▪ Observe and record changes /stages over time (linked to Y3 PoS). ▪ Explore / observe things in the local environment / real contexts and record observations (linked to Y3 PoS) – see 'Communicating' section also re links to vocabulary.	▪ Decide ways and give reasons for sorting, grouping, classifying, identifying things / objects, living things, processes or events based on specific characteristics. ▪ Compare and contrast and begin to consider the relationships between different things *(e.g. structures of plants, functions of plant parts, diets, skeletons of humans and other animals, changes over time, etc.).* ▪ Record similarities as well as differences *(e.g. what do all skeletons have? as well as the differences between skeletons.*	▪ Explore their own ideas about 'what if….?' scenarios e.g. humans did not have skeletons. ▪ Ask questions such as 'What if we tried….? or 'What if we changed…?' ▪ Begin to understand that some questions can be tested in the classroom and some cannot. ▪ Within a group suggest questions that can be explored, observed, tested or investigated further. ▪ Within a group suggest relevant questions about what they observe and about the world around them.	▪ Find things out using a range of secondary sources of information *(e.g. books, photographs, videos and other technology).*	▪ Act out or make a model of something to represent something in the real world using appropriate scientific vocabulary verbally.	▪ Begin to make some decisions about an idea within a group from a list of choices *(e.g. let's put them all in a pile first OR I think we should try…).* ▪ With help; support, listen to and acknowledge others in the group *(e.g. Yes. I prefer that one too).* ▪ Build on / add to someone else's idea. *(e.g. we could use x as well as y).* ▪ Begin to understand that it is okay to disagree with their peers and offer a reason for their opinion.

Science
Year Group Expectations for Working Scientifically Skills (Grid 2)

Year 3	▪ Help to decide about how to set up a simple **fair test** and begin to recognise when a test is not **fair**. ▪ Make a **prediction** based on everyday experience. ▪ With support / as a group, set up simple practical enquiries including comparative and **fair tests** e.g. make a choice from a list of a things (variables) to change when conducting a **fair test**. *(e.g. choose which magnets to compare and which method to use to test their strength).* ▪ As a group, begin to make some decisions about the best way of answering their questions. ▪ Find / suggest a practical way to compare things *e.g. rocks, magnets.*	▪ Collect data from their own observations and measurements using notes / simple tables / standard units. ▪ Help to make some decisions about what observations to make, how long to make them for, the type of simple equipment that might be used and how to work safely. ▪ Make simple **accurate** measurements using whole number standard **units**, using a range of equipment. ▪ Gather data in a variety of ways to help in answering questions. ▪ Use equipment **accurate**ly to improve the detail of their measurements / observations *(e.g. microscopes, measuring syringes, measuring cylinders, hand lenses).*	▪ Record and present findings using simple scientific language and vocabulary from the Y3 PoS. *including discussions, oral and written explanations, notes, annotated drawings, pictorial representations, labelled diagrams, simple tables, bar charts (using scales chosen for them), displays or presentations.* ▪ With scaffold / support record, and present data in a variety of ways to help in answering questions. ▪ Communicate their findings in ways that are appropriate for different audiences. (linked to Y3 PoS).	▪ With scaffold / support, describe and compare the effect of different factors on something *(e.g. we noticed that larger magnets are not always stronger).* ▪ With help, look for changes and simple patterns in their observations, data, chart or graph. ▪ Use their results to consider whether they met their **predictions**.	▪ Use their experience and some **evidence** or results to draw a simple **conclusion** to answer their original question. ▪ Write a simple explanation of why things happened (using the word 'because') and using simple scientific language and vocabulary from the Y3 PoS.	▪ Say whether what happened was what they expected and notice any results that seem odd. ▪ Begin to recognise when a test is not **fair** and suggest improvements.

Curriculum Coverage By Subject in Year 4- Based on LPDS National Curriculum Assessment Materials

Art and Design

End of Year Expectations

Year 4	▶ Investigate different starting points for their work, and choose which idea to develop further. ▶ Record their thoughts and experiences in a sketch book / 'ideas journal', and begin to annotate these. ▶ Explain how they are developing their ideas as they work, and are beginning to use language appropriate to the chosen style of art. ▶ Use creative thinking to begin to adapt an initial idea, e.g. experiment with alternative colour palette.	▶ Discuss and analyse the styles of artists, craft makers or designers and use this to inform their own work. ▶ Understand the historical and / or cultural significance of the work of a chosen artist / art form.	▶ Use learnt techniques in drawing, painting, sculpture and other art, craft and design in different contexts and with a variety of materials, e.g. use knowledge of weaving to create a willow sculpture. ▶ Demonstrate control of a range of tools and materials to create desired effects, e.g. when drawing use different grades of pencil to create variations in tone.	▶ Compare ideas, methods and approaches in their own and others' work, e.g. talk about the features they like and the changes they would make to a piece of art work. ▶ Use sketch book / 'ideas journal' to adapt their work as their ideas develop; make annotations in their books to describe how they might develop their work further.

Design and Technology
End of Year Expectations

Year 4	▶ Record the plan by drawing using annotated sketches. ▶ Use prototypes to develop and share ideas. ▶ Consider aesthetic qualities of materials chosen. ▶ Use CAD where appropriate.	▶ Prepare pattern pieces as templates for their design. ▶ Select from techniques for different parts of the process.	▶ Draw / sketch existing products in order to analyse and understand how products are made. ▶ Identify the strengths and weaknesses of their design ideas in relation to purpose / user. ▶ Consider and explain how the finished product could be improved. ▶ Investigate key events and individuals in design and technology.	▶ Use an increasingly appropriate technical vocabulary for tools materials and their properties. ▶ Understand seam allowance. ▶ Prototype a product. ▶ Sew on buttons and make loops. ▶ Strengthen frames with diagonal struts. ▶ Measure and mark square section, strip and dowel accurately to 1cm. ▶ Incorporate a circuit into a model. ▶ Use electrical systems such as switches bulbs and buzzers. ▶ Use ICT to control products. ▶ Use linkages to make movement larger or more varied.	▶ Make healthy eating choices – use the *Eatwell plate*. ▶ Understand seasonality. ▶ Know where and how ingredients are reared and caught. ▶ Prepare and cook using different cooking techniques.

Geography
End of Year Expectations

Year 4	▶ Name and locate a wider range of places in their locality, the UK and wider world including some globally significant features.	▶ Use geographical language to identify and explain some aspects of human and physical features and patterns. ▶ Describe how features and places change and the links between people and environments.	▶ Ask and respond to more searching geographical questions including 'how?' and 'why?' ▶ Identify and describe similarities, differences and patterns when investigating different places, environments and people.	▶ Observe, record, and explain physical and human features of the environment.	▶ Use a range of sources including digital and Ordnance Survey maps, atlases, globes and satellite images to research geographical information. ▶ Recognise Ordnance Survey symbols on maps and locate features using four-figure grid references.	▶ Express their opinions on environmental issues and recognise that other people may think differently. ▶ Communicate geographical information through a range of methods including digital maps, plans, graphs and presentations.

History
End of Year Expectations

Year 4	▶ Use dates and historical terms when ordering events and objects. ▶ Identify where people and events fit into a chronological framework. ▶ Explore links and contrasts within and across different periods of time.	▶ Describe some aspects of Britain's settlement by Anglo-Saxons and Scots. ▶ Describe some aspects of the Roman Empire and recognise its impact on Britain. ▶ Demonstrate knowledge of aspects of history significant in their locality.	▶ Use sources to address historically valid questions and hypotheses. ▶ Recognise how sources of evidence are used to make historical claims. ▶ Recognise why some events happened and what happened as a result. ▶ Identify historically significant people and events in different situations.	▶ Discuss significant aspects of, and connections between, different historical events. ▶ Select and organise relevant historical information to present in a range of ways. ▶ Use relevant and appropriate historical terms and vocabulary linked to chronology.

Music
End of Year Expectations

Year 4	▸ Sing solo songs demonstrating call and response form, speak chants and rhymes in unison with clear diction, control of pitch, a sense of phrase and musical expression. ▸ Identify contrasting sections of a song, such as the verse and refrain (chorus).	▸ Review their own ideas and feelings about music using art, movement, dance, expressive language and musical vocabulary. ▸ Understand that time and place can influence how and why music is created, performed and heard. Listen to and review music from a culture different to their own.	▸ Improvise and develop rhythmic and melodic material when composing. ▸ Experiment with gestures to show the overall contour of the pitch of a melody as it moves upwards, downwards or stays the same. ▸ Combine a variety of musical elements when composing using staff and other musical notations.	▸ Explore and compare sounds from the different instrumental families (percussion, woodwind, brass, string), name a variety of instruments. ▸ Hear in a piece of music, refer to and compare the different sounds instruments make as their tone colour such as brassy, wooden and metallic. ▸ Sequence various famous composers on a timeline.	▸ Identify through gestures such as clapping or using percussion, the strong / first beat whilst singing. ▸ Keep a steady beat and maintain rhythmic accuracy holding their own beat against another contrasting part. ▸ Recognise pitch movement by step, leaps or as repeats.

Physical Education
End of Year Expectations

Year 4	▸ Master fundamental movement skills and start to develop sport specific skills. Develop a broader range of skills using different sports and activities. ▸ Perform using a number of sending and receiving skills with consistency and accuracy. Travel with an object i.e. running or dribbling a ball with / without equipment. ▸ Perform movements, shapes and balances that are matched and / or mirrored. ▸ Perform dances clearly and fluently, show sensitivity to the dance idea and the accompaniment. ▸ Orientate a map consistently and accurately. Follow a simple star orienteering course and simple point to point orienteering course on school grounds recording controls. ▸ Work cooperatively with others to solve challenges.	▸ Examples of developing sport specific skills may include: ○ Chest bounce pass, swing pass, catching. ○ Bouncing a ball, running with a ball. ○ Underarm bowl. ○ Throwing overarm. ○ Strike a ball with implement. ○ Matched and mirrored balances.	▸ Develop attacking skills in a 4V2 invasion game. ▸ Apply skills and tactics in a range of other games such as net / wall or striking / fielding type activities.	▸ Create and perform sequences of actions (6) with control and precision in a range of activities such as gymnastic activities. ▸ Use simple motifs and movement patterns to structure dance phrases on their own and with a partner.	▸ Describe what is successful in their own performances. ▸ Identify aspects of their game that needs improving and say how they could go about improving them.

Computing
End of Year Expectations

Year 4	▸ Use technology respectfully, responsibly and safely, knowing how to keep their information and passwords secure. ▸ Know different ways of reporting concerns about content and contact involving the internet and other communication technologies. ▸ Have a greater understanding of what is acceptable and unacceptable online behaviour. ▸ Start to develop strategies to verify the reliability and accuracy of information on the internet and develop an awareness of copyright.	▸ Use and combine a variety of software and devices with increasing independence, to create a range of digital assets such as programs, databases, systems and multimedia content. ▸ Understand how Boolean operators can change searches and select appropriate information for their tasks. ▸ Use models and simulations to produce graphs and explore patterns and relationships.	▸ Design and write more complex algorithms and programs using sequence, repetition and selection. ▸ Further develop their computational thinking to help debug their programs and design and solve problems and tasks. ▸ Have a simple understanding of how search engines work. ▸ Develop their understanding of inputs and outputs further, demonstrating how they can use programs to control external devices such as sensors, motors and robots. ▸ Understand the difference between the internet and World Wide Web.

Languages
End of Year Expectations

Year 4	▸ Understand a range of familiar spoken phrases e.g. classroom instructions.	▸ Ask and answer simple questions and give basic information (including a simple negative statement) based on topics covered in Y4. ▸ Take part in a simple conversation and their pronunciation and confidence is improving. ▸ Observe social conventions when speaking to someone i.e. formal and informal greetings and use of 'you').	▸ Understand simple written phrases and match sounds to familiar written words as they become more aware of spelling patterns.	▸ Write simple, familiar phrases accurately using a writing frame or scaffold.	▸ Understand some basic aspects of language structure e.g. question words, how to use the negative, the position of the adjective in a sentence and an awareness of word order.

Science
Scientific Knowledge and Conceptual Understanding: Year 4 Expectations

Environment – Living Things and Their Habitats	Light and Astronomy – Light, reflections and shadows
▪ Recognise that living things can be grouped in a variety of ways.	▫ Recognise that they need light in order to see things and that dark is the absence of light.

▪ 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. ▫ Use and make identification keys for plants and animals.		▫ 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 can change.
Plants – Functions and Parts of a Plant	**Sound**	**Electricity**

▪ Identify, locate 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.
  ▫ Roots grow downwards and anchor the plant.
  ▫ Water, taken in by the roots, goes up the stem to the leaves, flowers and fruit.
  ▫ Nutrients (not food) are taken in through the roots.
  ▫ Stems provide support and enable the plant to grow towards the light.
  ▫ Plants make their own food in the leaves using energy from the sun.
  ▫ Flowers attract insects to aid pollination.
  ▫ Pollination is when pollen is transferred between plants by insects, birds, other animals and the wind.
  ▫ Seeds are formed after the flowers are pollinated.
  ▫ Many flowers produce fruits which protect the seed and/or aid seed dispersal.
  ▫ Seed dispersal, by a variety of methods, helps ensure that new plants survive.
Plants need nutrients to grow healthily (either naturally from the soil or from fertiliser added to soil).
	Vibrations
	▪ 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 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.
	  ▫ Recognise that sounds can be made in a variety of ways (pluck, bang, shake, blow) using a variety of things (instruments, everyday materials, body).
	  ▫ Sounds travel away from their source in all directions.
	  ▫ Vibrations may not always be visible to the naked eye.
	Pitch
	▪ Find patterns between the pitch of a sound and features of the object that produced it.
	  ▫ Sounds can be high or low pitched.
	  ▫ The pitch of a sound can be altered.
	  ▫ Pitch can be altered either by changing the material, tension, thickness or length of vibrating objects or changing the length of a vibrating air column.
	Muffling/blocking sounds
	▪ Recognise that vibrations from sounds travel through a medium to the ear.
	  ▫ Sounds are heard when they enter our ears (although the structure of the ear is not important key learning at this age phase).
	  ▫ Sounds can travel through solids, liquids and air/gas by making the materials vibrate.
	  ▫ Sound travel can be reduced by changing the material that the vibrations travel through.
	  ▫ Sound travel can be blocked.
		▪ 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.
		  ▫ Electricity can be dangerous.
		  ▫ Electricity sources can be mains or battery.
		  ▫ Batteries 'push' electricity round a circuit and can make bulbs, buzzers and motors work.
		  ▫ Faults in circuits can be found by methodically testing connections.
		  ▫ Drawings, photographs and diagrams can be used to represent circuits (although standard symbols need not be introduced until UKS2).

Science
Year Group Expectations for Working Scientifically Skills (Grid 1)

Year 4	▪ Suggest their own ideas on a concept and compare these with what they observe / find out. ▪ Use observations to suggest what to do next. ▪ Discuss ideas and develop descriptions from their observations using relevant scientific language and vocabulary (from Y4 PoS). ▪ Observe and record relationships between structure and function or between different parts of a processes (linked to Y4 PoS). ▪ Observe and record changes / stages over time (linked to Y4 PoS).	▪ Make a simple guide to local living things. ▪ Use guides or simple keys to classify / identify [animals, flowering plants and non-flowering plants]. ▪ Use their observations to identify and classify. ▪ Begin to give reasons for these similarities and differences. ▪ Record similarities as well as differences and / or changes related to simple scientific ideas or processes or more complex groups of objects / living things / events *(e.g. evaporation and condensation, different food chains, different electrical circuits).*	▪ Ask / raise their own relevant questions with increasing confidence and independence that can be explored, observed, tested or investigated further. ▪ Ask questions such as 'What will happen if…?" or 'What if we changed…? (linked with Y4 PoS). ▪ Choose / select a relevant question that can be answered [by research or experiment / test].	▪ Make decisions about which information to use from a wide range of sources and make decisions about how to present their research. ▪ Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.	▪ Make a visual representation or a model of something to represent something they have seen or a process that is difficult to see. ▪ Suggest their own ideas on a concept and compare these with models or images.	▪ Make some decisions about an idea within a group *(e.g. I think we should find out by testing…)* ▪ Increasingly support, listen to and acknowledge others in the group. ▪ Build on / add to someone else's idea to improve a plan. ▪ Understand that it is okay to disagree with their peers and offer reasons for their opinion.

Science
Year Group Expectations for Working Scientifically Skills (Grid 2)

Year 4	▪ Carry out simple **fair tests** with increasing confidence investigating the effect of something on something else (linked to Y4 PoS). ▪ Start to make their own decisions about the most appropriate type of science enquiry they might use to answer scientific questions *(is a fair test the best way to investigate their question?)* ▪ Make a **prediction** based on the knowledge acquired from previous explorations / observations and apply it to a new situation. ▪ Explain their planning decisions and choices. ▪ Make some of the planning decisions about what to change and measure / observe. ▪ Begin to recognise when a **fair test** is necessary.	▪ Begin to identify where patterns might be found and use this to begin to identify what data to collect. ▪ Make more of the decisions about what observations to make, how long to make them for and the type of equipment that might be used. ▪ Recognise obvious risks and how to keep themselves and others safe. ▪ Learn how to use new equipment, such as data loggers and measure temperature in degrees Celsius (°C) using a thermometer. ▪ Collect data from their own observations and measurements, using notes / simple tables / standard **units**. ▪ Make **accurate** measurements using standard **units** [and more complex units and parts of units] using a range of equipment and scales.	▪ Record findings using relevant scientific language and vocabulary (from Y4 PoS), including discussions, oral and written explanations, notes, drawings (annotated), pictorial representations, labelled diagrams, tables and bar charts [where intervals and ranges agreed through discussion], displays or presentations. ▪ Begin to select the most useful ways to collect, record, classify and present data from a range of choices. ▪ Make decisions on how best to communicate their findings in ways that are appropriate for different audiences.	▪ Notice / find patterns in their observations and data. (Describe the effect of something on something else). *(e.g. as I lengthen the ruler I notice that the pitch gets lower).* ▪ With some independence, analyse results / observations by writing a sentence that matches the **evidence** i.e. deciding the important aspect of the result and summarising in a **conclusion** *(e.g. metals tend to be good conductors of electricity).*	▪ Begin to develop their ideas about relationships and interactions between things and explain them. ▪ Use relevant scientific language and vocabulary (from Y4 PoS) to begin to say / explain *why* something happened.	▪ Use results to suggest improvements, new questions and / or predictions for setting up further tests. ▪ Compare their results with others and give reasons why results might be different.