Grove Lea Primary Science Progression Skill Grid

EYFS	22-36 months	30-50 Months	40-60 Months	ELG
Understanding the world: The World.	I enjoy playing with small world models such as farm, a garage or a train track?	I listen to stories about people, animals and places such as the zoo or the beach.	I can comment and ask questions about the place I live and the natural world around me.	I can talk about similarities and differences in relation to places, objects, materials and living things
	I notice detailed features of objects in my environment.	I can investigate the natural world around me. Such as how the rain makes puddles, when it is cold it can snow and how the wind blows and moves things such as bubbles.	I can ask about some of the things I have observed such as plants, animals , natural and found objects	I can talk about the features of my own immediate environment and how environments might vary from one another
		I can develop an understanding of growth, decay and changes over time.	I can talk about why things happen or how they work.	I can make observations about animals and plants and explain why some things occur and talk about changes
		I can show care and concern for living things and the environment.	Can I look closely at similarities and differences, patterns and change?	

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Science	Y1	Y2	Y3	Y4	Y5	Y6
Knowledge Biology	**By the end of Y1 we should know…**	**By the end of Y2 we should know…**	**By the end of Y3 we should know**	**By the end of Y4 we should know…**	**By the end of Y5 we should know…**	**By the end of Y6 we should know…**
	Animals They can identify and name a variety of common animals including, fish, amphibians, reptiles, birds and mammals. They can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) They can identify and name a variety of common animals that are carnivores, herbivores and omnivores ***Greater Depth*** *They can create a guide to show their understanding about different animals.* *They can prove if it is true that carnivores*	**Animals and Habitats** They can explore and compare the differences between things that are living, dead, and things that have never been alive. They can 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. They can identify and name a variety of plants and animals in their habitats, including microhabitats in and around the school grounds. They can describe how animals obtain their food from plants and other animals,	**Food and Nutrition** They can 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 ***Greater Depth*** *Investigate malnutrition and what causes it.* *Suggest a range of foods to help someone suffering with a vitamin C deficiency.* **Tier 3 Vocab** Biology Nutrition Nutrients Carbohydrates Protein Diary Fats Fibre Water Vitamins Minerals Balanced Diet	**Animals and the Ecosystem** They recognise that living things can be grouped in a variety of ways. They explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. They recognise that environments can change and that this can sometimes pose dangers to living things. They construct and interpret a variety of food chains, identifying producers, predators and prey. ***Greater Depth*** *Classify animals and plants in a way that they can be in one or more group. Explaining why.*	**Human Changes and Life Cycles** They describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. They describe the life process of reproduction in some plants and animals. They describe the changes as humans develop to old age. ***Greater Depth*** *Make generalisations about the relationship between age and changes in humans.* *Explore questions such as 'True or false? All young offspring look like smaller versions of their adult parents.* *Always, sometimes or never? Eggs are common to the life cycle of mammals,*	**Evolution and Classification of Living Things** They recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. They recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. They identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. They describe how living things are classified into broad groups according to common observable characteristics and

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	are not hunted by other carnivores. They show *evidence of how a reptile could not be confused with a mammal.* **Tier 3 vocab** Biology Fish Amphibians Mammals Birds Reptiles Pets Herbivore Carnivore Plants Meat **My Body** They can identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. ***Greater Depth*** *They are able to explain how we could adapt the classroom or school to make it I more suitable for a blind or deaf person.*	using the idea of a simple food chain, and identify and name different sources of food. ***Greater Depth*** *Have the knowledge to explain why something such as a glass bottle has never been alive* *Suggest reasons why something such as a cactus or a polar bear could not survive in different conditions.* *Create an ideal microhabitat and prove that it is successful.* *They are able to take what they know to prove if food chains always end with a carnivore.* **Tier 3 Vocab** Living/Alive Dead Never lived Habitat Microhabitat Food Food Chain Sun	**The Skeleton** They can identify that humans and some other animals have skeletons and muscles for support, protection and movement. ***Greater Depth*** *Able to recommend a variety of exercises that use each main muscle in the body.* **Tier 3 Vocab** Biology Skeleton Bones Joints (ball, socket, hinge, gliding) Endoskeleton Exoskeleton Vertebrate Invertebrate Muscles Contract Relax **Plants** They can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers They can explore the requirements of plants	*Construct your own classification key to sort groups of plants and animals.* *How are predators affected by changes in the natural environment?* *Able to suggest reasons why a growth in sparrow hawks may cause a reduction in song birds and too many insects.* *Explain what is being done by humans to try and preserve habitats.* **Tier 3 Vocab** Biology (KMRM Animal classification Amphibians, Reptiles, Birds, Fish, Mammals) Vertebrates Invertebrates Classification Human Impact Population Deforestation Climate Temperature Environment Predator Prey Herbivore	*amphibians, insects and birds.* *Relate the reproduction of plants to your knowledge of the life cycle of insects.* **Tier 3 Vocab** Biology (KMRM Reptile, Mammal, Bird, Fish, Amphibian, Insect) Vertebrate Invertebrate Exoskeleton Life Cycle Puberty Reproduce Gestation Foetus Fertilisation Life Expectancy Adolescence Adulthood Childhood Sexual Asexual Germination Pollination Seed Formation Seed Dispersal Plantlets Runners Stamen Stigma Prehistoric	based on similarities and differences, including micro-organisms, plants and animals. They give reasons for classifying plants and animals based on specific characteristics. ***Greater Depth*** *Explain the concept of inheritance.* *Research some of the investigations that scientists are doing about inherited conditions from parents.* *Investigate the conditions in which life on earth survived millions of years ago.* *True or false? Investigate how whales once walked on land? How do we know this?* *Explore the question: True or false animals would not survive if they could not adapt?*

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	Tier 3 Vocab Biology Senses Tongue Mouth Taste Sweet Sour Hot Cold Spicy Eyes Sight Vision Colours Nose Smell Ears Hearing Sound Loud Quiet Body Head Face Hair Neck Arms Legs Hands Feet Back Stomach Hips Wrist Ankle Knees Elbow	Grass Human Animal Bushes Pond Woodland Meadow Garden Forest Desert Rainforest Ocean Seashore Environment Conditions Hot/Warm/Cold Dry/Damp/Wet Bright/Shade/Dark **Changes** Notice that animals, including humans, have offspring which grow into adults ***Greater Depth*** *Suggest ways in which offspring both human and animal depend on their parents.* **Tier 3 Vocab** Biology Offspring Grow Reproduce Pregnancy Egg	for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant (grow a range of different plants and make observations about their similarities and differences) They can explain how leaves are important in creating food for a plant (Investigate to prove) They can investigate the way in which water is transported within plants They can experiment with food colouring to show how water is transported through a plant. They can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **Greater Depth** *They are able to prove or disprove that roots*	Carnivore Omnivore Producer Consumer Food Chain **The Digestive System** They describe the simple functions of the basic parts of the digestive system in humans. They identify the different types of teeth in humans and their simple functions. ***Greater Depth*** *Able to suggest some reasons why humans may suffer from digestion problems.* *How diet can be linked to the health of human teeth.* **Tier 3 Vocab** Biology Digestion Mouth Teeth (Incisors Canines, Molars, Pre Molars, Wisdom) Rip, Tear, Chew, Grind Saliva	Animal Naturalist – David Attenborough Animal Behaviourist – Jane Goodall.	*Explain and give examples of the best ways animals and plants show adaptation.* *Give reasons as to whether you think it would be possible for a litter of cocker spaniel puppies from two parents of the same colour can vary in colour?* **Tier 3 Vocab** Biology Evolution Adaptation Inherited Traits Adaptive Traits Natural Selection Inheritance Charles Darwin Alfred Wallace DNA Genes Variation Parent Offspring Fossil Environment Habitat Fossilisation Classify Classification Compare Linnea Carl Linnaeus

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	Plants They identify and name a variety of common wild and garden plants, including deciduous and evergreen trees They identify and describe the basic structure of a variety of common flowering plants, including trees. They identify similarities and difference between plants. They are able to sort plants and flowers in different ways. ***Greater Depth*** *They can think of their own ways to categorise plants.* *They can design a garden with drawings and labels for someone who likes privacy and bright Autumn colours.*	Baby Toddler Child Teenager Elderly Cub Kitten Calf Foal Lamb Chicken Hatchling Joey Cygnet Duckling Life Cycle Caterpillar Pupa Butterfly Frogspawn Tadpole Froglet Frog Move Grow Feed Live Young **Keeping Healthy** Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for	*act like straws sucking up water for the plant.* *Prove and make conclusions if for example you can change the colour of celery?* *Create a planting plan for a flower bed for plants and flowers which will look good all year.* *Explain why flowering plants grow in places such as rooftops and gutters even though humans did not plant them.* *They are able to explain if they agree or disagree and why. "Animals are a flowering plants best friend?"* **Tier 3 Vocab** Biology (KMRM Parts of a plant) Germination Seed Dispersal Photosynthesis Chlorophyll Pollination Nutrients	Enzymes Acid Oesophagus Stomach Small Intestine Large Intestine Absorbs Vitamins Colon Liver Pancreas Kidneys Gall Bladder		Domain Kingdom Species Class Order Family Genus Characteristics Phylum Vertebrates Invertebrates (arachnid, mollusc, insect, crustacean) Microorganisms Organisms Bacteria Fungi **My Heart and the Circulatory System** They 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

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	They can explain if roots are always at the bottom of plants and why? **Tier 3 Vocab** Biology Plants Wild (Buttercup, Daisy, Dandelion, Daffodil, Nettle) Garden (Tulips, Roses, Pansies, Sunflower, Snap Dragon, Marigold the names of fruits and vegetables) Plants Flowers Trees Deciduous Evergreen Trunk Branches Leaf Root Stem Bulb Seed Fruit Vegetable Sunlight Water Soil	humans of exercise, eating the right amounts of different types of food, and hygiene. ***Greater Depth*** *Create a weekly menu and exercise programme for keeping healthy.* *Show an understanding of the importance of different food groups.* *Why is it so important for humans to have clean water?* **Tier 3 Vocab** Biology Water Food Air Shelter Exercise Hygiene Nutrition Healthy Unhealthy Food Groups Diary Fats and Sugars Protein Carbohydrates Energy Oxygen Heat Beat	Minerals Fertilisation Temperature			within animals, including humans.. ***Greater Depth*** *Relate information about blood pressure to diet and lifestyle.* *Discover how coronary arteries may become blocked and cause heart attacks.* *Argue the statement 'You re what you eat'* *Explore if it would be possible keep someone dancing for 24 hours.* *Relate the transportation of water un humans and animals to your knowledge of plants,* **Tier 3 Vocab** Biology Human Organs Heart Lungs Circulatory System Liver Kidney Brain Skeletal Skeleton

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		Pulse Move Grow Feed Medicine **<u>Plants</u>** Observe and describe how seeds and bulbs grow into mature plants. They know some similarities and differences in the growth of seeds and bulbs. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy (Growing plants in different conditions) ***<u>Greater Depth</u>*** *Say how we might be able to record information about the growth or seeds and bulbs.* *Prove that plants need certain conditions to grow.*				Muscle Muscular Digest Digestion Digestive Impact Blood Vessels Nutrients Exercise Drugs Life Style Alcohol Substances

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		Tier 3 Vocab Biology Plants Shoot Wild Seedling Garden Suitable Flowers Temperature Trees Cold/Warm/Hot Wet/Dry Light/Dark Deciduous Sunlight Evergreen Fruit Trunk Vegetable Branches Leaf Water Root Soil Bud Germination Blossom Stem Stem Petal Bulb Seed				

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Knowledge Physics	**Seasonal Change** They can observe changes across the 4 seasons. They can observe and describe weather associated with the seasons and how day length varies. ***Greater Depth*** *Explain if it is always warm and dry during the summer.* *Plan an activity which is suited to each season*. **Tier 3 Vocab** Physics Season Spring Summer Autumn Winter Day Night Light Dark Weather Sun Rain Rain Gauge Hot Cold Warm Wind		**Forces and Magnets** They can compare how things move on different surfaces by planning their own investigations. Looking at cars on a ramp with different surfaces, thinking about variables and fair testing. Does the force behind them make a difference? (KMRM push, pulls, gravity, friction). They notice that some forces need contact between 2 objects, but magnetic forces can act at a distance. They observe how magnets attract or repel each other and attract some materials and not others. They 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.	**Sound** They identify how sounds are made, associating some of them with something vibrating They recognise that vibrations from sounds travel through a medium to the ear They find patterns between the pitch of a sound and features of the object that produced it They find patterns between the volume of a sound and the strength of the vibrations that produced it. They recognise that sounds get fainter as the distance from the sound source increases. ***Greater Depth*** *Suggest ways in which we can protect our ears from loud sounds. Which materials would be best? How do you know?*	**Earth and Space** They can describe the movement of the Earth, and other planets, relative to the Sun in the solar system. They can describe the movement of the Moon relative to the Earth. They can describe the Sun, Earth and Moon as approximately spherical bodies They use the idea of the Earth's rotation to explain day and night, and the apparent movement of the sun across the sky. They explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object ***Greater Depth*** *Explore questions such as 'True or false a year is always 365 days no matter where*	**Light and Electricity** They recognise that light appears to travel in straight lines. They 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 They 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 They use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them They associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit They compare and give reasons for variations in how components function,

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	Snow Hail Sleet Fog Mist Temperature Thunder Lightning **Floating and Sinking** They can distinguish which materials float and which materials will sink. They can compare and group together a variety of materials based on their properties for floating or sinking. **Tier 3 Vocab** Float Sink Heavy Light Surface Materials *Also see materials list		They describe magnets as having 2 poles. They can predict whether 2 magnets will attract or repel each other, depending on which poles are facing. ***Greater Depth*** *They are able to use what they know to devise a way to slow toy cars on a ramp.* *Answer questions like – True or False 'The surface on which a toy car rolls affects its speed"* *Explain if heavy and light things move differently.* *Explain the difference in the movement of a helicopter drone and a remote control car.* *Research and explain how magnets are useful in everyday life*. *Explain the concept of a magnetic field and prove that they exist*	*Explain how we can show the relationship between vibration and pitch.* *Explore true or false questions like 'higher notes are louder than lower notes?'* *Suggest reasons why whales and dolphins can communicate over long distances.* *Explain what you think about statements such as 'Air is not a very good medium for transmitting sounds.'* *Relate your understanding of pitch to musical instruments.* *Use a thunderstorm to explain why we see lightning before we hear the thunder and why thunder may sound louder to some people than others.* **Tier 3 Vocab** Physics Vibrate Vibration	*you are in the solar system.* *Can they explain how time zones are related to the earth's movement relative to the sun?* *Explain the concept of a leap year.* *At night sundials do not work. Suggest or investigate others ways to tell the time using the night sky.* **Tier 3 Vocab** Physics Earth Sun Moon Planets Stars Solar System Mercury Venus Mars Jupiter Saturn Uranus Neptune Pluto Rotate Aristotle Ptolemy Galileo Copernicus	including the brightness of bulbs, the loudness of buzzers and the on/off position of switches They use recognised symbols when representing a simple circuit in a diagram. **Greater Depth** *Investigate if light can ever bend around corners and if so, how?* *Explain if blocking light proves that it travels in straight lines?* *Prove or disprove that light is visible.* *Find out if it is possible that a shadow can be formed smaller than the object that created it?* *Investigate why objects, such as a straw appears to bend in water.* *Suggest why a bulb or buzzer may stop*

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			by making them visible. Explain why we call parts of the earth north and south poles. Is it possible to make a magnet? **Tier 3 Vocab** Physics Force Push Pull Magnet (Bar, Ring, Button, Horseshoe) Magnetic Magnetic Poles Magnetic Field North South Attract Repel Metal (Iron, steel, zinc, copper) **Light and Shadows** They recognise that they need light in order to see things and that dark is the absence of light. They notice that light is reflected from surfaces.	Vibrating Sound Waves Medium Pitch (high low) Frequency Volume (loud, quiet, faint) Outer, Inner, Middle Ear Ear Drum Ossicles Cochlear Neurons Tuning Fork Instruments (string, percussion, woodwind, brass) Insulate Magnify Decibels **Electricity** They identify common appliances that run on electricity. They construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. They can identify whether or not a lamp will light in a simple series circuit, based on whether or not the	Brahe Galaxy Milky way Alhazen Spherical Heliocentric Geocentric Hemisphere Season Sundial Astronomical clocks **Forces** They identify the effects of air resistance, water resistance and friction that act between moving surfaces. They recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect. ***Greater Depth*** *Relate the size of a drag force to the object which is acting on it.* *Explain which will reach earth first if dropped from the same height 1kg of*	*working when the voltage is increased.* *Explore if it is possible to make your own resistor.* **Tier 3 Vocab** Physics Light Travels Straight Reflect Reflection Light Source Rainbow Spectrum Periscope Incident Ray Filter Shadow Translucent Opaque Transparent Mirrors Voltage Watts Volume Switches Series Circuit Bulb Buzzer Motor Symbols Current Resistance Terminal Conduct Insulate

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			They recognise that light from the sun can be dangerous and that there are ways to protect their eyes. They recognise that shadows are formed when the light from a light source is blocked by a solid object . They can find patterns in the way that the size of shadows change. ***Greater Depth*** *Understand and explain if it is true or false the brighter the source of light the easier it is to see.* *True or false - explain if the moon is a source of light.* *Explain why we have night and day, light and dark.* *True or false? The sub us the only natural source of light in our solar system?* *Explore questions such as: Always, sometimes or never?*	lamp is part of a complete loop with a battery They can recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit They recognise some common conductors and insulators, and associate metals with being good conductors. ***Greater Depth*** *Explain if electrical appliances always, sometimes or never need batteries or mains electricity to power them.* *Able to diagnose and repair different broke circuits.* *Explain the concept of a series circuit.* *Answer questions such as, true or false? If there are 5 switches in a circuit only one*	*feathers or 1kg of steel?* *Prove or disprove if a rotary motion be changed into a linear one?* *Make generalisations between the relationship between forces and effect.* **Tier 3 Vocab** Physics Gravity Air Resistance Water Resistance Friction Forces Effect Surface Movement Accelerate Decelerate Mechanism Pulley Gear Spring Gravitation Isaac Newton Galileo Galilei Rotary Linear	

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			Dark surfaces do not reflect light as well as those that are light? *Explain your thoughts. True or false? Night time is a shadow?* *What is the relationship between the height of a light source and the object causing the shadow?* **Tier 3 Vocab** Physics Light Sunlight Dark Shadow Reflect Reflective Surface Natural Artificial Source of light Lamp, Sun, Moon, Candle, Torch, Star. Transparent Translucent Opaque	*has to be switched on to complete the circuit.* *Can children relate the idea of switches to the Morse code?* *Explore the question: 'Is it true or false that everything on earth (including humans) either conducts or insulated electricity?* **Tier 3 Vocab** Physics Electrical Battery Mains Cell Appliance Circuit Wire Bulb Buzzer Motor Switch Dangerous Output (heat, sound, movement, light) Positive Negative Connection		

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Knowledge Chemistry	**Everyday Materials** They can distinguish between an object and the material from which it is made. They can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock They can describe the simple physical properties of a variety of everyday materials They can compare and group together a variety of everyday materials on the basis of their simple physical properties. ***Greater Depth*** *They can answer and explain if for example some fleece jackets start as a plastic bottle.* *They can identify which objects started as a plant.* *They are able to design an item of*	**Uses of Materials** They can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for different uses. They can compare how things move on different surfaces, including what gravity is and how friction works. (Toys can be used for this, shoes on different surfaces with various grips on the bottom, visit a park or think about the places in a park which require more or less friction to move. *Do not do cars on a ramp as this is the progression in year 3). They can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (applying a force)	**Rocks and Soils** They can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. They describe in simple terms how fossils are formed when things that have lived are trapped within rock. They recognise that soils are made from rocks and organic matter. ***Greater Depth*** *Explain whether it would be true or false that the colour of a rock helps you to identify it?* *Explain answers to questions starting 'is it always, sometimes or never that . . .rocks that sparkle have a high quartz content?* *Explain whether it would be possible for fossils to be found in igneous rocks?*	**States of Matter** They compare and group materials together, according to whether they are solids, liquids or gases They 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) They identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. ***Greater Depth*** *Explore and answer true or false questions such as – Solids keep their shape all the time or liquids always take the shape of their container.* *Explore: always, sometimes or never – Gases are lighter than solids.*	**Properties and Changes of Materials** They can 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 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	

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	clothing to keep them warm and dry in the winter. *Create a 'Guess the Material' game based on the properties.* **Tier 3 Vocab** Chemistry Material Wood Metal Plastic Glass Water Brick Fabric Paper Card Foil Elastic Properties Hard/Soft Shiny/Dull Stretchy/Stiff Bendy Waterproof Absorbent	***Greater Depth*** *They can explain if or why for example the shape of wood can or can't be changed by squashing, bending, stretching etc.* *Understand and explain why some materials would not be suitable for different uses. Answers should inc the properties of materials. Could we have a chocolate tea pot or a paper window?* *Create a park which has friction in the right places.* *Investigate the design of car tyres and connect this to your understanding of fiction.* **Tier 3 Vocab** Chemistry Material Wood Metal Plastic Glass Water Brick Rock	*Recommend plants which can grow in different soils.* *Investigate the flooding of the River Nile in the Egyptian times and how this relates to your knowledge of soil.* **Tier 3 Vocab** Chemistry Appearance (shiny, dull, rough, smooth etc) Physical Properties Absorbent Fossil Rock Soil Minerals Organic Matter Granite Marble Chalk Sedimentary Metamorphic Igneous Magna Stone Crystals Slate Clay Peat	*Create a testable hypothesis about the sates of matter and prove or disprove your hypothesis.* *Explain the practical uses for the relationship between temperature and evaporation.* **Tier 3 Vocab** Chemistry Matter Solid Liquid Gas Particles Freeze Melt Temperature Thermometer Solidify Evaporation Condensation Change in state Water Cycle Energy Water Vapour Melting Point Boiling Point Oxygen Precipitation Transpiration	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. ***Greater Depth*** *Devise an experiment that proves or disproves a hypothesis you have created about the properties of materials.* *Relate your understanding of solutions to your understanding of the water cycle.* *Prove if there is a way to recover water after recovering a substance from a solution after evaporation.*	

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		Rubber Fabric Paper Card Foil Elastic Properties Hard/Soft Shiny/Dull Stretchy/Stiff Bendy Waterproof Transparent Translucent Opaque Absorbent Suitable Unsuitable Uses Squash Bend Twist Stretch Push Pull			*Explain what might happen if a bird sits on a live uninsulated power line?* *Answer always. Sometimes or never questions such as: changes to materials that are reversible require something else to change first before they can change. Explore true or false questions such as: Changes in temperature cause only reversible changes.* **<u>Tier 3 Vocab</u>** Chemistry Properties Hardness Solubility Transparency Electrical Conductor Thermal Conductor Response to Magnets Dissolve Solution Separate Solids Liquids Gases Evaporate Condense Irreversible Change	

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					Reversible Change Mixing Sieving Melting Filtering Rusting Magnetism Electricity Chemists Quantitative Measurements Chemical Conductivity Insulation Dissolve Soluble Insoluble Solvent Residue	

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Skills they should have	By the end of Y1 the skills we should have…	By the end of Y2 the skills we should have…	By the end of Y3 the skills we should have	By the end of Y4 the skills we should have…	By the end of Y5 the skills we should have…	By the end of Y6 the skills we should have…
	Ask simple questions about how things work and why they happen. Make simple observations. Carry out simple tests. Name and Sort. Make simple observations. Gather and record data.	Ask questions and recognise that they can be answered in different ways. Observe closely, using simple equipment. Perform simple investigations. Identify and classify. Use observations and ideas to suggest answers to questions. Gather and record data to help in answer questions.	Ask questions and use scientific enquiries to answer them. Set up simple practical enquiries to learn about fair testing. Make observations to say what we have found out. Begin to take measurements using standard units and a range of equipment. Gather and record specific data to answer questions.	Asking relevant questions and plan different types of scientific enquiries to answer them. Set up simple practical enquiries, which explore using comparative and fair tests. Make systematic and careful observations. Take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gather, record, classify and present data in a variety of ways to help answer questions.	Choose different types of scientific enquires to answer questions. Learn about the different variables: independent, dependent and controlled. Take measurements, using a range of scientific equipment. Record data and results using scientific diagrams and labels, classification keys, tables, and bar and line graphs.	Plan different types of scientific enquiries to answer questions. Learn to recognise and use independent and dependent variables and control variables where necessary. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, and bar and line graphs.

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			Record findings using simple scientific language, drawings, diagrams, keys, charts and tables. Make conclusions using oral and written explanations, displays or presentations of results. Use scientific evidence to answer questions. Evaluate their work and say what they might do differently next time. Identify some differences, Similarities and changes.	Choose the best way for recording findings using scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identifying differences, similarities or changes related to simple scientific ideas and processes	Use test results to make predictions to set up further investigations. Report and present findings from enquiries. Find scientific evidence that has been used to support or refute ideas or arguments.	Use test results to make predictions to set up further comparative and fair tests. Report and present findings from enquiries, Including conclusions, causal relationships and explanations of results, in oral and written forms such as displays and other presentations. Identify scientific evidence that has been used to support or refute ideas or arguments, include their own opinions based on what they have found out.

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				Using straightforward scientific evidence to answer questions or to support their findings.		

Grove Lea Primary Science Progression Skill Grid

Working Scientifically Vocab	Y1	Y2	Y3	Y4	Y5	Y6
	Question Answer Gather Measure Record Results Equipment Sort Group Order Changes Test Observe Diagram Patterns Notice Compare Describe Similarities Differences Ruler Metre Stick Tape Measure Egg Timer Beaker Pipette Syringe Investigate Experiment	Question Answer Gather Measure Record Results Equipment Sort Group Order Changes Test Observe Diagram Patterns Notice Compare Describe Similarities Differences Ruler Metre Stick Tape Measure Egg Timer Beaker Pipette Syringe Investigate Experiment	Question Answer Scientific Enquiry Changes Identify Classify Comparative Compare Contrast Careful Accurate Observation Fair Test Observations Present Data Evidence Results Keys Bar Charts Conclusion Prediction Support Thermometer Data Logger Magnifying Glass Microscope Structure Function	Question Answer Scientific Enquiry Changes Identify Classify Comparative Compare Contrast Careful Accurate Observation Fair Test Observations Present Data Evidence Results Keys Bar Charts Conclusion Prediction Support Thermometer Data Logger Magnifying Glass Microscope Structure Function Research Relevant Construct Interpret Method	Systematic Relationship Opinion Fact Variable Independent Variable Controlled Variable Dependent Variable Accuracy Procession Degree of Trust Classification Key Scatter Graph Line Graph Casual Relationships Method Conclusion Hypothesis Investigate Experiment Analysis Explanation Systematic Refute Argument Statement Quantitative	Systematic Relationship Opinion Fact Variable Independent Variable Controlled Variable Dependent Variable Accuracy Procession Degree of Trust Classification Key Scatter Graph Line Graph Casual Relationships Method Conclusion Hypothesis Investigate Experiment Analysis Explanation Systematic Refute Argument Statement Quantitative

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			Research Relevant Construct Interpret Method Investigate Experiment Increase Decrease Appearance Classification Keys	Investigate Experiment Increase Decrease Appearance Classification Keys		