Northwick Park Academy Trust
Subject Overview with National Curriculum Objectives
Science

Areas of learning 3 and 4 year olds	Content from EYFS statutory framework and 2020 Development Matters	New Vocabulary
Communication and Language **Physical Development** **Understanding the World**	- Understand 'why' questions, like: "Why do you think the caterpillar got so fat?" - Make healthy choices about food, drink, activity and tooth brushing. - Uses all their senses in hands-on exploration of natural materials. - Explore collections of materials with similar and/ or different properties. - Talk about what they see, using a wide vocabulary. - Begin to make sense of their own life-story and family's history. - Explore how things work. - Plant seeds and care for growing plants. - Understand the key features of the life-cycle of a plant and animal. - Begin to understand the need to respect and care for the natural environment and all living things. - Explore and talk about different forces they can feel. - Talk about the differences between materials and changes they notice.	head, eyes, nose, mouth, ears, hands, fingers, feet, toes, arm, leg, tree, leaf, flower, stem, seed, plant, insect, life cycle, environment, material, wood, glass, paper, hard, soft, summer, spring, autumn, winter, season, sun, day, dark, light, night, moon, Earth, star, loud quiet, teeth, why, healthy, tooth brushing, toothpaste, activity (physical), senses, materials, properties, environment, forces, gravity, changes

Areas of learning Reception	Content from EYFS statutory framework and 2020 Development Matters	New Vocabulary	Familiar Vocabulary from 3/4 year olds
Communication and Language	- Learn new vocabulary. - Ask questions to find out more and to check what has been said to them. - Articulate their ideas and thoughts in well-formed sentences. - Describe events in some detail. - Use talk to work out problems and organise thinking and activities. - Explain how things work and why they might happen. - Use new vocabulary in different contexts.	similar, different, places, objects, materials, living, alive, dead, environment, animals, plants, change, technology, Summer, Winter, Autumn, Spring, day, daytime, wind, rain, sleet, hail, fog, cold, Sun, hot, wood, plastic, metal, water, fabric, rock, sort, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, properties, materials, living, habitats, food chain, shelter, seashore, woodland, petal, root, leaf, stalk, water, oxygen, sunshine, soil, litter pollution, scientist, inventor, experiment, fish, reptile, pet, bird, mammal, tongue, taste, nose, smell, ears, hear, eyes, see, skin, touch, rain, shower, drizzle, storm, freezing, clouds, season, reflect, light, tooth brushing, decay	head, eyes, nose, mouth, ears, hands, fingers, feet, toes, arm, leg, tree, leaf, flower, stem, seed, plant, insect, life cycle, environment, material, wood, glass, paper, hard, soft, summer, spring, autumn, winter, season, sun, day, dark, light, night, moon, Earth, star, loud quiet, teeth, why, healthy, tooth brushing, toothpaste, activity (physical), senses, materials, properties, environment, forces, gravity, changes
Physical Development	- Know and talk about the different factors that support their overall health and wellbeing: * regular physical activity * healthy eating * tooth brushing * sensible amounts of 'screen time' * having a good sleep routine * being a safe pedestrian		
Understanding the World	- Explore the natural world around them. - Describe what they see, hear and feel while they are outside. - Recognise some environments that are different to the one in which they live. - Understand the effect of changing seasons on the natural world around them.		

Areas of learning ELG	Content from EYFS statutory framework and 2020 Development Matters	New Vocabulary	Familiar Vocabulary from Reception
Communication and Language/ Listening, Attention and Understanding **Personal, Social and Emotional Development/ Managing Self** **Understanding the World/ The Natural World**	- Make comments about what they have heard and ask questions to clarify their understanding. - Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices. - Explore the natural world around them, making observations and drawing pictures of animals and plants. - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	hygiene, healthy food choices, natural world, man-made, observations, similarities, differences, contrasting, processes, changes, seasons, changes, states, matter, colour, shape, texture, smell, reversible, irreversible, melt, burn, freeze, bacteria, odour	similar, different, places, objects, materials, living, alive, dead, environment, animals, plants, change, technology, Summer, Winter, Autumn, Spring, day, daytime, wind, rain, sleet, hail, fog, cold, Sun, hot, wood, plastic, metal, water, fabric, rock, sort, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, properties, materials, living, habitats, food chain, shelter, seashore, woodland, petal, root, leaf, stalk, water, oxygen, sunshine, soil, litter pollution, scientist, inventor, experiment, fish, reptile, pet, bird, mammal, tongue, taste, nose, smell, ears, hear, eyes, see, skin, touch, rain, shower, drizzle, storm, freezing, clouds, season, reflect, light,

Y1	Topic	Content from National Curriculum	Skills Working Scientifically (see attached progression ladders)	New Vocabulary	Familiar Vocabulary
A1	Who Am I? (Animals, including humans).	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.	Ask simple questions and recognise that they can be answered in different ways. Suggest what might happen and ways to test ideas Use simple equipment to observe closely. Identify and classify (name and group). Use his/her observations and ideas to suggest answers to questions. Make observations using appropriate senses (explore using the five senses). Communicate findings in simple ways, including tables.	**Common Animals** fish, amphibians reptiles, birds, mammals, pets **Senses** tongue – taste nose – smell eyes – vision skin – touch ears – hearing **Omnivores** meat and plants, badger, human, bear chickens **Carnivores** meat, cat, dog, lion, tiger, fox, shark, killer whale, eagle, hawk, snake, t-rex **Herbivores** plants, cows, horses, mice, elephants, deer head, leg, eyes, neck, knees, hair, arms, face, mouth, elbows, ears, teeth	living, alive, dead, environment, animals, plants, living, habitats, food chain, shelter, seashore, woodland, fish, reptile, pet, bird, mammal
A2	Celebrations (Everyday materials).	Observe changes across the four seasons- Autumn		**Material** wood, plastic, glass, metal, water, rock,	fabric, rock, sort, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy,

		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.	Gather and record data to help in answering questions. **Working Scientifically Vocabulary (KS1)** question, answer, observe, observing, equipment, identify, classify, sort, diagram, chart, map, data, compare, contrast, describe, biology, chemistry, physics, group, record	brick, paper, fabrics, elastic, foil **Properties** hard/ soft stretchy/ stiff shiny/ dull rough/ smooth bendy/ not bendy waterproof/ not waterproof absorbent/ not absorbent	waterproof, absorbent, properties, materials
Sp1	Polar Adventures (Everyday materials and Seasonal changes).	Observe changes across the four seasons- Winter 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. Observe changes across the four seasons. Observe and describe weather associated with the seasons and how day length varies.		**Everyday Materials – see A2.**	fabric, rock, sort, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, properties, materials, not bendy, not waterproof, not absorbent, wood, plastic, glass, metal, water, brick, paper, elastic, foil Summer, Winter, Autumn, Spring, day, daytime, wind, rain, sleet, hail, fog, cold, Sun, hot
Sp2	Treasure Island	Observe changes across the four seasons- Spring		**Animals, including humans – see A1.**	living, alive, dead, environment, animals, plants, living, habitats,

	(Animals, including humans).	Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).			food chain, shelter, seashore, woodland, fish, reptile, pet, bird, mammal
S1	On Safari (Animals, including humans and Plants).	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 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.		**Animals, including humans – see A1.** **Common** wild plants garden plants deciduous evergreen **Plant** leaves, bud, flowers, blossom, stem **Tree** Deciduous, evergreen, trunk, branches, leaf, root fruit, vegetables, bulb, seed	living, alive, dead, environment, animals, plants, living, habitats, food chain, shelter, seashore, woodland, fish, reptile, pet, bird, mammal, plants, petal, root, leaf, stalk, water, oxygen, sunshine, soil
S2	Holiday (Everyday materials).	Observe changes across the four seasons- Summer 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.		**Everyday materials – see A2.**	fabric, rock, sort, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, properties, materials, not bendy, not waterproof, not absorbent, wood, plastic, glass, metal,

		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.			water, brick, paper, elastic, foil
Y2	**Topic**	**Content from National Curriculum**	**Skills Working Scientifically (see attached progression ladders)**	**New Vocabulary**	**Familiar Vocabulary**
A1	Material Monsters (Uses of everyday materials).	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	Ask simple questions about a given topic. With help, suggest questions/ ideas to recognise that they can be answered in different ways of scientific language (see the NC). Gather and record data to help in answering questions including from secondary resources of information. Use first-hand experience and, with help, simple information sources to answer questions.	cardboard squashing, bending, twisting, stretching **Wood** Matches, floors, telegraph poles wood, metal but not glass **John Dunlop** rubber **Charles Macintosh** Waterproof fabric **John McAdam** Macadamisation **Metal** coins, cans, cars, table legs **Spoons**	fabric, rock, sort, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, properties, materials, not bendy, not waterproof, not absorbent, wood, plastic, glass, metal, water, brick, paper, elastic, foil **Material** wood, plastic, glass, metal, water, rock, brick, paper, fabrics, elastic, foil **Properties** hard/ soft stretchy/ stiff shiny/ dull rough/ smooth bendy/ not bendy

			Think about how to collect evidence. Suggest what might happen. Think about and discuss whether comparisons and simple tests are fair or unfair. Perform simple and comparative tests. Follow simple instructions and equipment to observe closely including changes over time. Perform simple comparative tests. Identify group and classify. Use his/her observations and ideas to suggest answers to questions an ideas to suggest answers to questions noticing similarities, differences and patterns. Gather and record data to help in answering	plastic	waterproof/ not waterproof absorbent/ not absorbent
A2	Uses of everyday materials (continued).	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.		**Uses of everyday materials – see A1.**	See above.
Sp1	Healthy Me (Animals, including humans).	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).		offspring, grow, adults **Survival** water, food, air, exercise, hygience nutrition, reproduce egg, chick, chicken egg, caterpillar, pupa, butterfly spawn, tadpole, frog lamb, sheep baby, toddler, child, teenager, adult	living, alive, dead, environment, animals, plants, living, habitats, food chain, shelter, seashore, woodland, fish, reptile, pet, bird, mammal, plants, petal, root, leaf, stalk, water, oxygen, sunshine, soil, amphibians, tongue – taste, nose – smell, eyes – vision, skin – touch, ears – hearing, omnivore, meat, plants, badger, human, bear chickens, carnivore, meat, cat, dog, lion, tiger, fox, shark, killer whale, eagle, hawk, snake, t-rex, herbivores plants, cows, horses, mice, elephants, deer, head, leg, eyes, neck, knees, hair, arms, face,

			questions, including tables and graphs. Say whether what happened was what was expected and draw simple conclusions. **Working Scientifically Vocabulary (KS1)** question, answer, observe, observing, equipment, identify, classify, sort, diagram, chart, map, data, compare, contrast, describe, biology, chemistry, physics, group, record		mouth, elbows, ears, teeth
Sp2	Move It Animals, including humans	Describe the importance for humans of exercise, eating the right amounts of different food, and hygiene.		**Animals including humans – see Sp1.**	Animals, including humans (see above).
S1	Little Master Chefs (Living things and their habitats).	Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including micro-habitats.		never alive, micro-habitats, sun, grass, cow, human, healthy, logs leaf litter, stony path, under bushes, shelter, seashore, woodland, ocean, rainforest, conditions, hot/ warm/ cold, dry/ damp/ wet, bright/ shade/ dark	living, alive, dead, environment, animals, plants, living, habitats, food chain, shelter, seashore, woodland, fish, reptile, pet, bird, mammal
S2	Young Gardeners (Living things and their habitats and Plants).	Explore and compare the differences between things that are living, dead, and things that have never been alive. 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.		**Living things and their habitats – see S1.** **Plant** bud, blossom, stem grow, healthy water, light, suitable, temperature germination reproduction vegetables, bulb, seed	living, alive, dead, environment, animals, plants, living, habitats, food chain, shelter, seashore, woodland, fish, reptile, pet, bird, mammal, never alive, micro-habitats, sun, grass, cow, human, healthy, logs, leaf litter, stony path, under bushes, shelter, seashore, woodland, ocean, rainforest, conditions, hot/ warm/ cold, dry/ damp/ wet, bright/ shade/ dark, wild plants, garden

					plants, deciduous, evergreen, leaves, bud, flowers, blossom, stem, deciduous, evergreen, trunk, branches, leaf, root, fruit

Y3	**Topic**	**Content from National Curriculum**	**Skills Working Scientifically (see attached progression ladders)**	**New Vocabulary**	**Familiar Vocabulary**
A1	Earth Rocks (Rocks).	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 a rock. Recognise that soils are made from rocks and organic matter.	Ask relevant questions and use different types of scientific enquiries to answer them. Use first-hand experience and information sources to answer questions. With help, put forward ideas about how to test. With help, make predictions based on prior knowledge. With help, set up practical enquiries and begin to understand fair tests.	appearance, physical, properties, shiny/ dull, absorbent/ not absorbent, fossils sedimentary, rock, soils, organic matter, buildings, gravestones, grains, crystals	hard, soft, rock, round, rough, sooth
A2	Opposites Attract (Forces and magnets).	Compare how things move on different surfaces. Notice that some forces need contact between two objects, but magnetic forces can act at a distance. Observe how magnets attract or repel each other and attract some materials and not others. 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.		force, open, surface, attract, repel, magnetic poles, North, South	push, pull, metal, magnetic, iron, magnet

		Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing.	With support, plan and carry out a fair test. Make systematic and careful observations and where appropriate. Measure length, volume of liquid and time in standard measures, using simple measuring equipment. Take accurate measurements of forces. Gather, record, classify and present data in a variety of ways to help with answering questions. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables. Report on findings from enquiries, including oral and, with support, written explanations, displays or		
Sp1	Food And Bodies (Animals, including humans).	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.		nutrition, nutrients, carbohydrates, protein, fats, fibre, water, vitamins, minerals, skeleton, bones, joints, endoskeleton, exoskeleton, hydrostatic, skeleton, vertebrate, invertebrate, contract, relax, muscles, ball joint, socket joint, hinge joint, gliding joint	living, alive, dead, environment, animals, plants, living, habitats, food chain, shelter, seashore, woodland, fish, reptile, pet, bird, mammal, plants, petal, root, leaf, stalk, water, oxygen, sunshine, soil, amphibians, tongue – taste, nose – smell, eyes – vision, skin – touch, ears – hearing, omnivore, meat, plants, badger, human, bear carnivore, meat, herbivores, plants, cows, horses, mice, elephants, deer, head, leg, eyes, neck, knees, hair, arms, face, mouth, elbows, ears, teeth, offspring, grow, adults, survival, water, food, air, exercise, hygiene, nutrition, reproduce egg, chick, chicken, egg, caterpillar, pupa, butterfly, spawn, tadpole, frog, lamb,

			presentations of results and conclusions. Use results to draw simple conclusions, make predictions for new values, suggest improvements. With help, identify simple patterns and suggest explanations. **Working Scientifically Vocabulary (Year 3 and 4)** **Research –** relevant, questions, scientific enquiry, comparative and fair test, systematic, careful observation, accurate, measurements, **Equipment –** thermometer, data logger **Data –** gather, record, classify, present **Record –** drawings, labelled diagrams, keys, bar charts, tables, oral and written explanations		sheep, baby, toddler, child, teenager, adult
Sp2	Animals, including humans (continued).	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.		**Animals, including humans – see Sp1.**	See above.
S1	Mirror, Mirror (Light).	Recognise that they need light in order to see things and that dark in 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.		see, reflect, surface natural, star, shadow blocked, solid artificial, torch, candle, lamp sunlight, dangerous, protect eyes	light, dark, sun, bright, dull, Sun, Moon, lamp
S2	How Does Your Garden Grow? (Plants).	Identify and describe the functions of different parts of flowering plants: roots, stem/ trunk, leaves and flowers. Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. Investigate the way in which water is transported within plants.		**Structure** flowering plants, roots, trunk **Function** nutrition, support, makes its own food **Requirements for life and growth** air, light, water, nutrients from the soil, room to grow, needs vary, fertiliser	wild plants, garden plants, deciduous, evergreen, leaves, bud, flowers, blossom, stem, deciduous, evergreen, trunk, branches, leaf, root, fruit, bud, blossom, stem, grow, healthy, water, light, suitable, temperature, germination, reproduction, vegetables, bulb, seed

		Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	conclusion, predictions, difference, similarities, changes, evidence, improve, secondary sources, guides, keys, construct, interpret	**Life cycle** flowers pollination, seed formation, seed dispersal	

Y4	**Topic**	**Content from National Curriculum**	**Skills Working Scientifically (see attached progression ladders)**	**New Vocabulary**	**Familiar Vocabulary**
A1	Looking At States (States of matter).	Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled and measure or research the temperature at which this happens in degrees Celsius. Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	Suggest and ask relevant questions that can be tested and use different types of scientific enquiries to answer them. Use straightforward scientific evidence to answer questions or to support his/her findings. Recognise why it is important to collect data in order to answer questions. Set up practical enquiries, comparative and fair tests.	solidify, iron, ice, melt, freeze, liquid, evaporate, condense, gas, container, changing state, heated, cooled, degrees Celsius, thermometer, water cycle, evaporation, condensation, temperature, melting, warm/ cool, water, water vapour	solid, liquid, heat, cool
A2	What's That Sound? (Sound).	Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it.		vibration, vibrating, air, medium, hear, sound, volume, pitch, faint, fainter, loud, louder, string, percussion, woodwind, brass, insulate	noise, loud, quiet, echo, vibrate, waves, ear, hear, sound

		Find patterns between the volume of a sound and the strength of the vibrations that caused it. Recognise that sounds get fainter as the distance from the sound source increases.	Put forward ideas about testing and make predictions. Identify how to carry out a fair test and explain why it is so. Make systematic, careful and relevant observations and comparisons where appropriate. Take accurate measurements of temperature and time, using standard units, using a range of equipment, including thermometers and data loggers. Begin to think about why measurements should be repeated for reliability. Gather, record, classify and present data in a variety of ways to help with answering questions. Record findings using simple scientific language, drawings, labelled diagrams,		
Sp1	Power It Up (Electricity).	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.	appliances, electricity, electrical circuit, cell, wire, bulb, buzzer, danger, electrical safety, sign **Insulators** wood, rubber, plastic, glass **Conductors** metal, water **Switch** open, closed	electric, light, volts, switch
Sp2	Teeth And Eating (Animals, including humans).	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.	**Human digestive system** digestion, mixes, moistens, saliva, oesophagus, transports, acid, enzymes, small intestine – absorbs, vitamins, large intestine – compacts, colon	stomach, mouth tongue, water, teeth, chew, brush, Sun, food chain, carnivore, omnivore, herbivore

			keys, bar charts and tables. Explain what evidence shows and whether it supports predictions. including oral and written explanations, displays or presentations of results and conclusions. Use results to draw conclusions, make predictions for new values, suggest improvements and raise further questions. Identify differences, similarities or changes related to simple scientific ideas and processes. Suggest improvements in their work. **Working Scientifically Vocabulary (Year 3 and 4)** **Research –** relevant, questions, scientific enquiry, comparative and fair test, systematic, careful	**Teeth** incisors – cutting, slicing, canines – ripping, tearing, molars – chewing, grinding, floss, **Food chain** producers, prey, predators,	
S1	Living Things (Living things and their habitats).	Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. Recognise that environments can change and that this can sometimes pose dangers to living things (deforestation etc).		vertebrate, dangers vertebrate invertebrate snails, slugs, worms, spiders, insects **Plants** flowering plants (including grasses), non-flowering (including mosses and ferns) **Human impact** **Positive** nature reserves, ecologically planned parks, garden ponds **Negative** Population, development, litter, deforestation	environment, flowering, non-flowering, plants, animals, fish, amphibians, reptiles, birds, mammals, garden, pond,
S2	Food and Digestion	Construct and interpret a variety of food chains, identifying producers, predators and prey.		**Animals, including humans – see Sp2.**	stomach, mouth tongue, water, teeth, chew, brush, Sun, food chain, carnivore,

	(Animals, including humans - consolidation).	Describe the simple functions of the basic parts of the digestive system in humans. 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.	observation, accurate, measurements, **Equipment –** thermometer, data logger **Data –** gather, record, classify, present **Record –** drawings, labelled diagrams, keys, bar charts, tables, oral and written explanations conclusion, predictions, difference, similarities, changes, evidence, improve, secondary sources, guides, keys, construct, interpret		omnivore, herbivore, digestion, mixes, moistens, saliva, oesophagus, transports, acid, enzymes, small intestine – absorbs, vitamins, large intestine – compacts, colon, incisors – cutting, slicing, canines – ripping, tearing, molars – chewing, grinding, floss, producers, prey, predators

Y5	Topic	Content from National Curriculum	Skills Working Scientifically (see attached progression ladders)	New Vocabulary	Familiar Vocabulary
A1	Let's Get Moving (Forces).	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between 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.	Find things out using a wide range of secondary sources of information. Recognise that scientific ideas are based on evidence and creative thinking. Plan different types of scientific enquiries to answer their own or others' questions, including recognising and controlling variables where necessary and carrying out fair tests where appropriate. Make predictions based on scientific knowledge. Suggest how to collect evidence and choose suitable equipment.	gravity, air resistance, water resistance, friction, surface, force, effect, move, accelerate, decelerate, stop, change direction, brake, mechanism, pulley, gear, spring, theory of gravitation, Galileo Galilei, Isaac Newton	force, open, surface, attract, repel, magnetic, poles, North, South, push, pull, metal, magnetic, iron, magnet
A2	Out Of This World (Earth and space).	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.		moons, solar system, Mercury, Venus, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto, rotate, Aristotle, Ptolemy, Galileo, Copernicus, Brahe, Alhazen, orbit, axis, spherical, heliocentric, geocentric, hemisphere, tilt	planets, Earth, Sun, Moon stars, day, night, season
Sp1	Material World (Properties and changes of materials).	Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.		properties, hardness, solubility, transparency, electrical conductor, thermal conductor, response to magnets, dissolve, solution, separate, separating,	fabric, rock, sort, hard, soft, stretchy, stiff, shiny, dull, rough, smooth, bendy, waterproof, absorbent, properties, materials, not bendy, not

		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. 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.	Group and classify things and recognise patterns. Think about why measurements should be repeated for reliability. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Identify simple trends and patterns. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in 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.	solids, liquids, gases, evaporating, reversible changes, dissolving, mixing, evaporation, filtering, sieving, melting, irreversible, new material, burning, rusting, magnetism, electricity, chemists, Spencer Silver, Ruth Benerito, quantitative, measurements, conductivity, insulation, chemical	waterproof, not absorbent, wood, plastic, glass, metal, water, brick, paper, elastic, foil, water, rock, brick, paper, fabrics, elastic, foil, cardboard, squashing, bending, twisting, stretching, matches, floors, telegraph poles, John Dunlop, rubber, Charles Macintosh, waterproof fabric, John McAdam, Macadamisation, coins, cans, cars, table leg, plastic
Sp2	Growing Up And Growing Old (Animals, including humans).	Describe the changes as humans develop to old age.		puberty, gestation, growth, foetus, fertilisation, old age, life expectancy, adolescence, adulthood, early adulthood, middle adulthood, late adulthood, childhood	old, young, death, life cycle, grow, reproduce, baby, toddler, child, teenager, adult
S1	Circle Of Life (Living things and their habitats).	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.		**Naturalists** David Attenborough **Behaviourist** Jane Goodall **Reproduction** plants: sexual, asexual	cycle, reproduction, alive, dead, never alive, mammal, amphibian, plants, animals, vegetable garden, insect, bird, vegetable garden, flower border

			Describe and evaluate their own and other people's scientific ideas related to topics covered in the National Curriculum (including ideas that have changed over time), using evidence from a range of sources. Use appropriate scientific language and ideas from the National Curriculum to explain, evaluate and communicate his/her methods and findings. Suggest improvements in their own work, giving reasons why. **Working Scientifically Vocabulary (Year 5 and 6)** plan, variables, measurements, accuracy, precision, repeat readings **Record data –** scientific diagrams, labels, classification keys, tables, scatter	animals: sexual **Lifecycles around the world** rainforest, oceans, desert prehistoric, similarities, differences	
S2	Super Scientists (Forensic science – enquiry focus).	*EXTRA OBJECTIVES* *Describe what a scientist is and the different ways in which they work.* *Carry out some forensic tests.* *Debate whether or not there should be a national DNA database.* *Identify and choose good ways of letting other know about science in the news.*		forensic, crime scene, investigation, evidence, DNA, database	test, identity, blood, finger prints, scientist

			graphs, bar graph and line graph predictions, further comparative and fair test, report and present conclusions, causal relationships, explanations, degree of trust, oral and written display and presentation **Evidence –** support, refute ideas or arguments, identify, classify and describe patterns, systematic, quantitative, measurements		

Y6	Topic	Content from National Curriculum	Skills Working Scientifically (see attached progression ladders)	*New Vocabulary*	Familiar Vocabulary
A1	Let It Shine (Light).	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.	Find things out using a wide range of secondary sources of information. Consider how scientists have combine evidence from observations and measurements with creative thinking to suggest new ideas and explanations for phenomena. Suggest methods of reliable testing and how to collect evidence, ensuring that it is sufficient and appropriate. Use test results to make predictions to set up further comparative and fair tests.	straight, light source, object, mirrors, periscope, rainbow, filters, refract, refraction, prism, spectrum, colour wheel	light, travel, ray, reflect, reflection, shadow
A2	We're Evolving (Evolution and inheritance).	Recognise that living things have changed over time and that fossils provide information about living things that inhabited 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.		evolution, adaptation, inherited traits, adaptive traits, natural selection, inheritance, Charles Darwin, Alfred Wallace, genes, variation, fossilisation	DNA, parent, fossil, offspring, environment, habitat, plants, animals, living things

		Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, deciding when repeat readings are necessary. Group and classify things and recognise patterns. Carry out a fair test identifying key factors to be considered. Make a variety of relevant observations using appropriate apparatus. Identify trends and patterns and results that do not appear to fit the pattern. Provide explanations for difference in observations and measurements. Choose appropriate methods of record data and results of increasing complexity using scientific diagrams and labels, classification keys,		
Sp1	Classifying Critters (Living things and their habitats).	Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. Give reasons for classifying plants and animals based on specific characteristics.		classify, classification, domain, kingdom, class, order, family, genus, species, characteristics, microorganisms, organism	similar, different, compare, classify, vertebrate, invertebrate, flowering, non-flowering
Sp2	Staying Alive (Animals, including humans).	Identify and name the main parts of the human body 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 ways in which nutrients and water are transported within animals, including humans.		internal organs, liver, kidney, brain, skeletal, skeleton, muscular, circulatory system, blood vessels, blood, impact, diet, exercise, drugs, lifestyle, nutrients, damage, drugs, alcohol, substances	heart, lungs, blood, brain, muscle, digest, digestion, digestive, water, anatomy
S1 & S2	Electrifying (Electricity).	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/ off position of switches. Use recognised symbols when representing a simple circuit in a diagram.		voltage, brightness, volume, switches, danger, series circuit, working safely with electricity, electrical safety, sign, circuit diagram, switch, bulb, buzzer, motor, recognised, symbols	appliances, electricity, electrical circuit, cell, wire, bulb, buzzer, danger, electrical safety, sign, wood, rubber, plastic, glass, metal, water, open, closed, electric, lights, volt, switch

			tables, scatter graphs, bar and line graphs, using ICT where appropriate. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in 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. Describe and evaluate their own and other people's scientific ideas related to topics covered in the National Curriculum (including ideas that have changed over time), using evidence from a range of sources. Use appropriate scientific language and ideas from the National Curriculum to explain, evaluate and		

			communicate his/her methods and findings. Make practical suggestions for improving their work, justifying why. **Working Scientifically Vocabulary (Year 5 and 6)** plan, variables, measurements, accuracy, precision, repeat readings **Record data –** scientific diagrams, labels, classification keys, tables, scatter graphs, bar graph and line graph predictions, further comparative and fair test, report and present conclusions, causal relationships, explanations, degree of trust, oral and written display and presentation **Evidence –** support, refute ideas or arguments, identify, classify and describe		

			patterns, systematic, quantitative, measurements		