Curriculum 22 – Subject Sequence for Science

Year 1

Project Title Key Concepts NC PoS Reference	Vocabulary	Knowledge (specific facts or truth components. A knowledge statement will often contain substantive, declarative or explicit knowledge.)	Skills (the use and application of composite knowledge. A skill statement will often contain implicit, procedural and disciplinary knowledge.)
Year 1 Everyday Materials Key Concepts: **Gather & record data** **identify & classify** **Investigation** **Measurement** **Observation** **Physical things** **Properties and uses** **Questioning** **Report and conclude** 10 Programmes of study, 10 skills and 9 knowledge statements **Ask simple questions and recognise that they can be answered in different ways.** **observe closely, using simple equipment.** **Perform simple tests**	**Investigation** equipment investigation method observe prediction results **Report and Conclude** describe results **Gather and Record** **Venn diagram** **data** **diagram** **group** **record** **sort** **table** **Physical Things** materials properties **Measurement** **digital microscope** **equipment**	**core knowledge** Question words include what, why, how, when, who and which.	**Y1 skill 1** Ask simple scientific questions.
		core knowledge Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses.	**Y1 skill 1** With support, use simple equipment to measure and make observations.
		core knowledge Simple tests can be carried out by following a set of instructions.	**Y1 skill 1** With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen.
		core knowledge Objects, materials and living things can be looked at and compared.	**Y1 skill 1** Observe objects, materials, living things and changes over time, sorting and grouping them based on their features.
		core knowledge The results are information that has been found out from an investigation.	**Y1 skill 1** Talk about what they have done and say, with help, what they think they have found out.
		core knowledge Data can be recorded and displayed in different ways, including tables, pictograms and drawings.	**Y1 skill 1** With support, gather and record simple data in a range of ways (data tables, diagrams, Venn diagrams).

Identify and classify **Use their observations and ideas to suggest answers to questions.** **Gather and record data to help in answering questions** **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.**	**hand lens** **observe** **Observation** **compare** **different** **observe** **same** **similar** **Questioning** **question** **research** **Identification and Classification** **brick** **ceramic** **clay** **concrete** **cotton** **fabric** **glass** **human-made** **leather** **material** **metal** **metal alloy** **natural** **object** **oil** **paper** **plastic** **rubber** **sand** **silk** **stone** **synthetic fabric** **water** **wood** **wool** **Properties and Uses** **absorbent** **bendy** **hard** **material** **opaque**	**core knowledge** A material is what an object is made from. Everyday materials include wood, plastic, glass, metal, water, rock, brick, paper and fabric.	**Y1** **skill** **1** Identify and name what an object is made from, including wood, plastic, glass, metal, water and rock.
		core knowledge A material is what an object is made from. Everyday materials include wood, plastic, glass, metal, water, rock, brick, paper and fabric.	**Y1** **skill** **1** Identify and name what an object is made from, including wood, plastic, glass, metal, water and rock.
		core knowledge Materials have different properties, such as hard or soft; stretchy or stiff; rough or smooth; opaque or transparent; bendy or rigid; waterproof or not waterproof; magnetic or non-magnetic.	**Y1** **skill** **1** Investigate and describe the simple physical properties of some everyday materials, such as hard or soft; stretchy or stiff; rough or smooth; opaque or transparent; bendy or rigid; waterproof or not waterproof and magnetic or non-magnetic.
		core knowledge Materials can be grouped according to their properties.	**Y1** **skill** **1** Compare and group materials in a variety of ways, such as based on their physical properties; being natural or man-made and being recyclable or non-recyclable.

	property **rough** **shiny** **smooth** **soft** **stretchy** **transparent** **use** **waterproof**		
Year 1 Shade and Shelter – DT Focus Key Concepts: **Identify & classify** **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.**	**Shade and Shelter** **Identification and Classification** absorbent cardboard clay durability fabric flexibility glass man-made material metal natural opaque plastic property rock strength transparent waterproof wood	**core knowledge** A material is what an object is made from. Everyday materials include wood, plastic, glass, metal, water, rock, brick, paper and fabric.	Y1 skill 1 Identify and name what an object is made from, including wood, plastic, glass, metal, water and rock.
		core knowledge A material is what an object is made from. Everyday materials include wood, plastic, glass, metal, water, rock, brick, paper and fabric.	Y1 skill 1 Identify and name what an object is made from, including wood, plastic, glass, metal, water and rock.
Year 1 Human Senses – Science Focus Key Concepts: **Gather & record data** **Human body** **Identify & classify** **Investigation**	Smell Taste Touch Hear Feel Nose Eyes Ears Hands Feet	**core knowledge** Question words include what, why, how, when, who and which.	Y1 skill 1 Ask simple scientific questions.
		core knowledge Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses.	Y1 skill 1 With support, use simple equipment to measure and make observations.

Measurement **Observation** **Parts and functions** **Questioning** **Report and conclude** 9 Programmes of study, 9 skills and 9 knowledge statements **Ask simple questions and recognise that they can be answered in different ways.** **Observe closely, using simple equipment.** **Perform simple tests.** **Identify and classify.** **Use their observations and ideas to suggest answers to questions.** **Gather and record data to help in answering questions.** **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**	body	**core knowledge** Simple tests can be carried out by following a set of instructions.	**Y1** **skill** **1** With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen.
		core knowledge Objects, materials and living things can be looked at and compared.	**Y1** **skill** **1** Observe objects, materials, living things and changes over time, sorting and grouping them based on their features.
		core knowledge The results are information that has been found out from an investigation.	**Y1** **skill** **1** Talk about what they have done and say, with help, what they think they have found out.
		core knowledge Data can be recorded and displayed in different ways, including tables, pictograms and drawings.	**Y1** **skill** **1** With support, gather and record simple data in a range of ways (data tables, diagrams, Venn diagrams).
		core knowledge Animals are living things. Animals can be sorted and grouped into six main groups: fish, amphibians, reptiles, birds, invertebrates and mammals.	**Y1** **skill** **1** Identify, compare, group and sort a variety of common animals, including fish, amphibians, reptiles, birds, invertebrates and mammals, based on observable features.
		core knowledge Different animal groups have some common body parts, such as eyes and a mouth, and some different body parts, such as fins or wings.	**Y1** **skill** **1** Label and describe the basic structures of a variety of common animals, including fish, amphibians, reptiles, birds and mammals.
		core knowledge The basic body parts are the head, arms, legs, nose, eyes, ears, mouth, hands and feet. The five senses are hearing, sight, smell, taste and touch. Ears are used for hearing, eyes are used to see, the nose is used to smell, the tongue is used to taste and skin gives the sense of touch.	**Y1** **skill** **1** Draw and label the main parts of the human body and say which body part is associated with which sense.

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.**			
Year 1 Bright Lights Big City – Geography focus Key Concepts: **Changes** **Observation** 2 Programmes of study, 2 skills and 2 knowledge statements **Identify and classify.** **Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.**	Compare and Contrast **compare** **geographical feature** Human Features and Landmarks **Ferris wheel** **castle** **cathedral** **church** **concert hall** **landmark** **monument** **palace** **skyscraper** Settlements and Land Use **airport** **art gallery** **capital city** **cathedral** **church** **cinema** **city** **flat** **house** **job** **landmark** **large settlement** **live** **monument**	**core knowledge** Objects, materials and living things can be looked at and compared. •	Y1 **skill** 1 Observe objects, materials, living things and changes over time, sorting and grouping them based on their features.
		core knowledge Some objects and materials can be changed by squashing, bending, twisting, stretching, heating, cooling, mixing and being left to decay.	Y2 **skill** 1 Describe how some objects and materials can be changed and how these changes can be desirable or undesirable.

	motorway **museum** **park** **restaurant** **river** **road** **school** **shop** **statue** **street** **theatre** **tourist** **tower block** **travel** **work** Geographical Resources **aerial photograph** **Data Analysis** **Collect** **Fieldwork** **human feature** **observe** **record** **Physical Features** **beach** **cliff** **cloud** **coastline** **flatland** **forest** **hill** **island** **lake** **land** **landscape** **mountain** **mudflat** **natural** **ocean** **physical feature** **river** **sea** **Climate and Weather**		

	autumn **cold** **fog** **hail** **ice** **rain** **season** **snow** **spring** **storm** **summer** **sun** **weather** **wind** **winter** **Significant Places** **landmark** **Monument** **Maps** **grid map** **label** **picture map** **Position** **backward** **behind** **beside** **between** **cardinal compass point** **direction** **east** **far from** **forward** **in front of** **left** **location** **near to** **next to** **north** **position** **right** **south** **straight ahead** **turn** **west**		

	UK **Belfast** **Cardiff** **Edinburgh** **England** **London** **Northern Ireland** **Scotland** **United Kingdom** **Wales** **capital city** **country**		
Year 1 Seasonal Changes – Science focus Key Concepts: **Changes** **Earth** **Orcs** **Gather & record data** **Habitats** **Identify & classify** **Investigation** **Living things** **Measurement** **Observation** **Pattern seeking** **Questioning** **report and conclude** **Staying safe** 11 Programmes of study, 14 skills and 25 knowledge statements **Ask simple questions and recognise that they can be answered in different ways.**	hibernate migrate Northern Hemisphere Volume **Seasonal Changes** **Staying Safe** Sun rays sun cream sunglasses **Investigation** equipment investigation measurement observe prediction question results **Report and conclude** compare describe meteorologist results weather forecast weather symbol **Living Things** amphibian	**core knowledge** Question words include what, why, how, when, who and which. **specific knowledge** A rain gauge is a piece of equipment used for measuring rainfall in millimetres (mm).	**Y1** **skill** **2** Ask simple scientific questions.
		core knowledge Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses. **specific knowledge** The Sun provides Earth with heat and light. However, it gives out invisible rays that can damage our skin and eyes over time. **specific knowledge** UV beads change colour when exposed to UV light. They are good as an indicator of potentially damaging rays from the Sun. **specific knowledge** Temperature is the measure of how hot or cold something is. It is measured using a thermometer on many different scales, including degrees Celsius.	**Y1** **skill** **4** With support, use simple equipment to measure and make observations.
		core knowledge Simple tests can be carried out by following a set of instructions.	**Y1** **skill** **1** With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen.

Observe closely, using simple equipment. **Perform simple tests.** **Identify and classify.** **Use their observations and ideas to suggest answers to questions.** **Gather and record data to help in answering questions.** **Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.** **Observe and describe weather associated with the seasons and how day length varies.** **Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.** **Observe changes across the four seasons.**	animal bird deciduous evergreen insect mammal reptile tree **Gather and Record Data** bar chart chart compare data record table **Measurement** compare degrees Celsius equipment measurement millimetre rain gauge rainfall temperature thermometer unit volume **Observation** observe **Questioning** question research **Identification and Classification** bud deciduous describe diagram evergreen leaf **Changes** Northern Hemisphere dark daytime light	**core knowledge** Objects, materials and living things can be looked at and compared.	**Y1 skill 1** Observe objects, materials, living things and changes over time, sorting and grouping them based on their features.
		core knowledge the results are information that has been found out from an investigation. **specific knowledge**A weather forecast predicts the weather, including the temperature, the type of weather, the chance of precipitation and the strength of the wind for a specific place and time.	**Y1 skill 2** Talk about what they have done and say, with help, what they think they have found out.
		core knowledge The local environment is a habitat for living things and can change during the seasons.	**Y1 skill 1** Observe the local environment throughout the year and ask and answer questions about living things and seasonal change.
		core knowledge Data can be recorded and displayed in different ways, including tables, pictograms and drawings.	**Y1 skill 1** With support, gather and record simple data in a range of ways (data tables, diagrams, Venn diagrams).
		core knowledge Plants are living things. Common plants include the daisy, daffodil and grass. Trees are large, woody plants and are either evergreen or deciduous. Trees that lose their leaves in the autumn are called deciduous trees. Examples include oak, beech and rowan. Trees that shed old leaves and grow new leaves all year round are called evergreen trees. Examples include holly and pine.	**Y1 skill 1** Identify, compare, group and sort a variety of common wild and garden plants, including deciduous and evergreen trees, based on observable features.
		core knowledge There are four seasons: spring, summer, autumn and winter. Certain events and weather patterns happen in different seasons. **specific knowledge** In winter, the weather can be cold and frosty. Days are short. Deciduous trees are bare, and animals are less active. In spring, days begin to lengthen. The weather is changeable. Trees grow leaves and blossom, and plants start to grow. Animal life is more active, and baby animals are visible. In summer, days are long. There is abundant growth of plants and animals. The weather is warm and sunny with some rain. In autumn, days begin to shorten. The weather is	**Y1 skill 3** Observe changes across the four seasons.

	night time season sunrise sunset **Earth** Earth Sun air breeze cloud cold fog gale hail hot hurricane precipitation rain rays sleet snow storm temperature warm weather	cool and often wet and windy. Some leaves change colour, and plants die off. Animals are active and preparing for winter. The pattern of the seasons is repeated every year. **specific knowledge** In spring, many animals give birth to young or lay eggs that hatch. In summer, animals eat a lot of food, and young animals grow and learn to look after themselves. In autumn, animals eat or collect lots of food and make nests and shelters to prepare for winter. In winter, animals protect themselves from the cold weather by hibernating, migrating or spending time in their nests.	
		core knowledge Day length (the number of daylight hours) is longer in the summer months and shorter in the winter months. **specific knowledge** The length of daytime in winter in the UK is shorter because the Northern Hemisphere is tilted away from the Sun. The length of daytime in summer is longer because the Northern Hemisphere is tilted towards the Sun.	**Y1 skill 1** Observe and describe how day length changes across the year.

	wind **Forces** Beaufort Scale UV beads anemometer equipment thermometer windsock **Pattern Seeking** Earth Northern Hemisphere Sun autumn blossom bud daytime deciduous dormant evergreen fruit grow hibernate leaf light migrate night time rain season seasonal change spring summer weather winter **Habitat** environment	**core knowledge** Different types of weather include sunshine, rain, hail, wind, snow, fog, lightning, storm and cloud. The weather can change daily and some weather types are more common in certain seasons, such as snow in winter. **specific knowledge** the weather is what the air is like outside in one place and at one time. **specific knowledge** The Sun creates the weather on Earth. The wind is formed when the Sun heats up different parts of the Earth. Clouds are formed when water is heated by the Sun and rises into the sky. Precipitation falls from clouds as rain when it is warm and snow, hail or sleet when it is cold.	Y1 skill 3 Observe and describe different types of weather.
		core knowledge It is important to stay safe. Some ways to stay safe include staying safe in strong sunlight (sun cream, sun hat and sunglasses), crossing roads (stop, look and listen), in the kitchen (not touching hot or sharp objects) and with household chemicals (not touching, drinking or eating).	Y1 skill 1 Describe ways to stay safe in some familiar situations.

Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.		**core knowledge** All living things (plants and animals) change over time as they grow and mature. **specific knowledge** Apple trees are deciduous. In winter, branches are bare and develop buds. In spring, buds open as leaves or blossom and fruit starts to grow. In summer, apples grow quickly and ripen. In autumn, apples are ready to be harvested.	Y1 skill 1 Describe, following observation, how plants and animals change over time.
		core knowledge Simple equipment can be used for measuring weather, such as measuring temperature with a thermometer; identifying wind direction and force with a windsock or measuring rainfall with a rain gauge.	Y1 skill 1 Investigate weather using toys, models or simple equipment.
Year 1 Chop, Slice and Mash – DT Focus Key Concepts: **Healthy lifestyle** Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.	Evaluation **evaluate** **evaluation** **improve** **success** Generation of Ideas **design** **design criteria** **diagram** **label** Staying Safe **hygiene** **rule** **safety** **Investigation** **chop** **grate** **grater** **knife** **mash** **masher** **peel**	**core knowledge** Hand washing and good hygiene are important parts of a healthy lifestyle and prevent the spread of germs.	Y1 skill 1 Explain why hand washing and cleanliness are important.

	peeler slice tear Nutrition flavour fruit healthy ingredient salad vegetable Origins of Food animal dairy product fish flower fruit leaf meat nut plant root seed source stem		
Year 1 Animal Parts – Science focus Key Concepts: Gather & record data Habitats Identify & classify Investigation Living things Measurement Nutrition Observation Parts and functions	amphibian animal bird deciduous evergreen insect mammal reptile tree Investigation equipment instructions investigation	Question words include what, why, how, when, who and which.	Y1 skill 1 Ask simple scientific questions.
		Simple equipment is used to take measurements and observations. Examples include metre sticks, measuring tapes, egg timers and hand lenses	Y1 skill 1 With support, use simple equipment to measure and make observations.
		Simple tests can be carried out by following a set of instructions.	Y1 skill 1 With support, follow instructions to perform simple tests and begin to talk about what they might do or what might happen.

Questioning **Report and conclude** **Survival** 11 Programmes of study, 12 skills and 12 knowledge statements Ask simple questions and recognise that they can be answered in different ways. Observe closely, using simple equipment. Perform simple tests. Identify and classify. Use their observations and ideas to suggest answers to questions. 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).	**observation** **question** **safety** **test** Gather and Record Data **Carroll diagram** **Venn diagram** **block graph** **data** **diagram** **group** **record** **table** Observation **compare** **different** **observe** **same** **similar** Questioning **question** **research** Identification and Classification **amphibian** **animal** **bird** **fish** **head** **human** **invertebrate** **mammal** **offspring** **reptile** **saddle** **segment** **tail** Parts and Functions **antenna** **arm** **balancing**	Objects, materials and living things can be looked at and compared.	Y1 skill 1 Observe objects, materials, living things and changes over time, sorting and grouping them based on their features.
		The results are information that has been found out from an investigation.	Y1 skill 1 Talk about what they have done and say, with help, what they think they have found out.
		The local environment is a habitat for living things and can change during the seasons.	Y1 skill 1 Observe the local environment throughout the year and ask and answer questions about living things and seasonal change.
		Data can be recorded and displayed in different ways, including tables, pictograms and drawings.	Y1 skill 1 With support, gather and record simple data in a range of ways (data tables, diagrams, Venn diagrams).
		Animals are living things. Animals can be sorted and grouped into six main groups: fish, amphibians, reptiles, birds, invertebrates and mammals.	Y1 skill 1 Identify, compare, group and sort a variety of common animals, including fish, amphibians, reptiles, birds, invertebrates and mammals, based on observable features.
		Carnivores eat other animals (meat), herbivores eat plants and omnivores eat other animals and plants.	Y1 skill 1 Group and sort a variety of common animals based on the foods they eat.
		Different animal groups have some common body parts, such as eyes and a mouth, and some different body parts, such as fins or wings.	Y1 skill 1 Label and describe the basic structures of a variety of common animals, including fish, amphibians, reptiles, birds and mammals.
		Living things need to be cared for in order for them to survive. They need water, food, warmth and shelter.	Y1 skill 1 Describe how to care for plants and animals, including pets.

Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.	**beak** **breathing** **body covering** **body part** **camouflage** **catching** **communicating** **ear** **eating** **eye** **feather** **fin** **foot** **fur** **gill** **gripping** **hair** **head** **hearing** **holding** **leg** **limb** **mandible** **mouth** **moving** **nose** **nostril** **pinna** **protection** **scale** **sense** **shell** **sight** **skin** **smell** **smelling** **tail** **taste** **tasting** **teeth** **tongue** **touch** **wing** Survival **care** **exercise** **food**	All living things (plants and animals) change over time as they grow and mature.	Y1 skill 1 Describe, following observation, how plants and animals change over time.

	healthy **pet** **shelter** **sleep** **survive** **water** Nutrition **animal** **beak** **carnivore** **claw** **food** **fruit** **herbivore** **hunt** **meat** **omnivore** **pincer** **plant** **seeds** **talon** **teeth** **vegetable** **wild animal**		