The Sequence of Learning:
Science

At St. Crispin's Infant School, we believe we are laying the foundations for learning and life by providing a curriculum that is purposeful and relevant. It is designed around our belief that each child is unique and can achieve their full potential as lifelong learners. The progressive structure of lessons allows children to explore, embed and develop expertise.

Our science curriculum is varied, progressive, and encourages children to develop a sense of wonder and curiosity about the world around them. We intend for our children to gain and develop the essential enquiry skills and Scientific knowledge necessary to become confident scientists; finding out why things happen the way they do. Every child will have practical and meaningful learning experiences that provide opportunities for working scientifically including; asking and answering questions, observation and comparison, performing simple tests, identifying and classifying, pattern seeking and gathering and recording data. Frequent opportunities for talk are embedded in the curriculum to encourage discussion and expansion of ideas, acquisition of scientific vocabulary and to develop the skill of questioning. Each Science unit allows for the children to revisit, reinforce and retain key knowledge as set out in the science national curriculum for Key Stage One. We believe that in doing this, we are shaping the scientists of the future.

The National Curriculum programme of Study for Science can be found here:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/425618/PRIMARY_national_curriculum_-_Science.pdf

	EARLY YEARS FOUNDATION STAGE	YEAR 1	YEAR 2
Working Scientifically	**Show curiosity and ask questions.** **Make observations using their senses and simple equipment** (magnifying glasses, binoculars, large pipettes, different sized cups/jugs to measure, large tweezers). **Make direct comparisons.** **Use equipment to measure** (non-standard units). **Record their observations** by drawing, taking photographs, using sorting rings or boxes and on simple tick sheets. **Use their observations to help them to answer their questions.** **Talk about what they are doing and what they have found out.**	**Ask questions and recognise that they can be answered in different ways.** While exploring the world, the children develop their ability to **ask** questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen) With support, the children answer questions developed with the teacher often through a scenario. The children are involved in planning how to use resources provided to answer the questions using different types of enquiries. **Make observations and take measurements**	**Ask questions and recognise that they can be answered in different ways.** While exploring the world, the children develop their ability to **ask** questions (such as what something is, how things are similar and different, the ways things work, which alternative is better, how things change and how they happen) The children answer questions developed with the teacher often through a scenario. The children are involved in planning how to use resources provided to answer the questions using different types of enquiries. The children will begin to recognise there are different ways to find out answers. **Make observations and take measurements**

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	Identify, sort and group.	Children explore the world around them. They make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as magnifying glasses to make their observations. They begin to take measurements by comparison leading on to non-standard units e.g. cubes, sand timers and cups. **Engage in practical enquiry to answer questions** **Performing simple tests** The children use practical resources provided to gather evidence to answer questions generated by the class or the teacher. They carry out: tests to classify; comparative tests; pattern seeking enquiries; and make observations over time. **Identifying and classifying** Children use their observations and testing to compare objects, materials and living things. They sort and group these things and use resources (such as identification sheets) to name living things. **Record and present evidence** The children record their observations e.g. using photographs, drawings and labelled diagrams. They record their measurements e.g. using prepared tables and pictograms. They classify using simple prepared tables and sorting rings. Year 1 tables: ticks/numbers/pictures **Answer questions and conclude** Children use their experiences of the world around them to suggest appropriate answers to questions. They	Children explore the world around them. They make careful observations to support identification, comparison and noticing change. They use appropriate senses, aided by equipment such as magnifying glasses and digital microscopes to make their observations. They take measurements using non-standard units e.g. cubes, sand timers and cups, leading on to standard units e.g. rulers, stop watches and graduated measuring cylinders/jugs. **Engage in practical enquiry to answer questions** **Performing simple tests** The children use practical resources provided to gather evidence to answer questions generated by the teacher and themselves. They carry out: tests to classify; comparative tests; pattern seeking enquiries; and make observations over time. **Identifying and classifying** Children use their observations and testing to compare objects, materials and living things. They sort and group these things, identifying their own criteria for sorting. They use simple secondary sources (such as identification sheets) to name living things. They describe the characteristics they used to identify a living thing. **Record and present evidence** The children record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing. They record their measurements e.g. using prepared tables, pictograms, tally charts and block graphs. They classify using simple prepared tables and sorting rings. Year 2 tables: ticks/numbers/writing (where appropriate).

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		are supported to relate these to their evidence e.g. observations they have made, measurements they have taken or information they have gained from secondary sources. The children recognise 'biggest and smallest', 'best and worst' etc. from their data.	**Answer questions and conclude** With increased confidence and independence: Children use their experiences of the world around them to suggest appropriate answers to questions. They are supported to relate these to their evidence e.g. observations they have made, measurements they have taken or information they have gained from secondary sources. The children recognise 'biggest and smallest', 'best and worst' etc. from their data.
Biology	**Animals including Humans** Name and describe animals that live in different habitats. Describe different habitats. Ask questions and talk about what they have found out about animals from a different habitat. Sort: animals. Describe people who are familiar to them. Sort: humans by their characteristics. Create pictures of themselves, family, friends and community and describe them. Talk about what they see when using a mirror. Compare hand, foot and fingerprints and talk about how they are different. Talk about how they look after themselves and how other people look after them. **Seasonal Changes** Play and explore outside in all seasons and in different weather.	**Plants** Name trees and other plants that they see regularly. Describe some of the key features of these trees and plants e.g. the shape of the leaves, the colour of the flower/blossom. Point out trees which lost their leaves and those that kept them the whole year. Point to and name the parts of a plant, recognising that they are not always the same e.g. leaves and stems may not be green. **Animals including Humans** Name a range of animals which includes animals from each of the vertebrate groups. Describe the key features of these named animals. Label key features on a picture/diagram. Describe what a range of animals eat. Follow instructions involving parts of the body. Label parts of the body on pictures and diagrams. Explore objects using different senses.	**Plants** Describe how plants that they have grown from seeds and bulbs have developed over time. Identify plants that grow well in different conditions. **Animals including Humans** Describe how animals, including humans, have offspring which grow into adults, using the appropriate names for the stages. State the basic needs of animals, including humans, for survival. State the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. Name foods in each section of the Eatwell Guide. **Living Things and Their Habitats** Find a range of items outside that are living, dead and never lived. Name a range of animals and plants that live in a habitat and micro-habitats that they have studied.

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	Observe living things throughout the year. Talk about different types of weather. Talk about the four seasons. Talk about the living things they see in the playground and on visits during each season. **Living Things and Their Habitats/Plants** Explore plants/animals in the surrounding natural environment. Explore plants/animals in a contrasting natural environment. Draw plants and animals they find. Name and describe plants and animals in the school grounds and their environment. Talk about how another environment is different to their surrounding natural environment. Take care of the living things they find in their surrounding natural environment	**Seasonal Changes** Name the four seasons and identify when in the year they occur. Describe weather in different seasons over a year. Describe days as being longer (in time) in the summer and shorter in the winter. Describe other features that change through the year.	Talk about how the features of these animals and plants make them suitable to the habitat. Talk about what the animals eat in a habitat and how the plants provide shelter for them. Construct a food chain that starts with a plant and has the arrows pointing in the correct direction.
Chemistry	**Everyday Materials** Make objects from different materials. Compare how materials change. Observe how objects melt. Sort materials, including natural materials. Name the material they are using and why. Talk about multiple properties of the material and why it is suited for its purpose. Observe changes in their natural world and say why it is different now or will change in the future. Compare and describe how materials change over time and in different conditions.	**Everyday Materials** Label a picture or diagram of an object made from different materials. Describe the properties of different materials.	**Everyday Materials** Name an object, say what material it is made from, identify its properties and make a link between the properties and a particular use. Label a picture or diagram of an object made from different materials. For a given object, identify what properties a suitable material needs to have. Whilst changing the shape of an object, describe the action used. Use the words flexible and/or stretchy to describe materials that can be changed in shape and stiff and/or rigid for those that cannot.

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			Recognise that a material may come in different forms which have different properties.
Physics	**Light** Explore shadows and rainbows. Compare the size of shadows. Sort objects/materials that make dark or pale shadows. Recognise shadows change throughout the day. Point out shadows and explain when they can be seen. Talk about how shadows change during the day. Identify the light source and the object making a shadow. Identify shadows that are dark and pale. Identify and describe a rainbow. **Forces** Explore how to change how things work. Explore how the wind can move objects. Explore how objects move in water. Pour water and sand. Test boats and aeroplanes. Talk about how they changed: objects to make them float or sink, how cars move down ramps or gutters, how wheels turn when sand or water is poured through them, how they changed how balls bounce. Compare how different boats and aeroplanes performed. Describe how objects fall with and without a parachute. **Sound**	**Not a Focus until KS2**	

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	Describe sounds they hear. Identify the source of sounds. Describe how they make sounds. **Earth and Space** Identify the Sun, Moon and stars and talk about how they are different from Earth. Learn about space travel. Make models of Earth, Sun, Moon, planets and stars. Draw things that happen in the daytime and at night. Identify differences between day and night. Talk about animals that are active at night. Talk about some differences between being on Earth and travelling in space.	

SCIENCE KEY VOCABULARY		
EYFS	**YEAR 1**	**YEAR 2**
Animals Including Humans Names of animals, live, on land, in water, jungle, desert, North Pole, South Pole, sea, hot, cold, wet, dry, snow, ice Expose children to supplementary vocabulary such as: environment, polar regions, ocean, camouflage. Model and encourage children to use vocabulary such as: hair (black, brown, dark, light, blonde, ginger, grey, white, long, short, straight, curly), eyes (blue, brown, green, grey), skin (black, brown, white), big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle,	**Plants** Leaf, flower, blossom, petal, fruit, berry, root, seed, trunk, branch, stem, bark, stalk, bud, names of trees in the local area, names of garden and wild flowering plants in the local area. **Animals Including Humans** Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves, Names of animals experienced first-hand from each vertebrate group, Parts of the body (including those linked to PSHE teaching). **Everyday Materials** Object, material, wood, plastic, glass, metal, water, rock, brick, paper, fabric, elastic, foil, card/cardboard, rubber, wool, clay,	**Plants** As for Year 1 plus light, shade, sun, warm, cool, water, grow, healthy. **Animals Including Humans** Offspring, reproduction, growth, child, young/old stages (examples -chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples –meat, fish, vegetables, bread, rice, pasta). **Everyday Materials** Names of materials –wood, metal, plastic, glass, brick, rock, paper, cardboard.

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grandmother, grandfather, cousin, friend, family, boy, girl, man, woman. Expose children to supplementary vocabulary such as: bald, elderly, wrinkles, male, female, freckles. **Everyday Materials** Model and encourage children to use vocabulary such as: ice, water, frozen, icicle, snow, melt, wet, cold, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, rigid, wood, plastic, paper, card, metal, strong, weak, hot, apply heat, waterproof, soggy, not waterproof, best, change, change back. Expose children to supplementary vocabulary such as: solid, liquid, gas, most suited. **Seasonal Changes** Model and encourage children to use vocabulary such as: spring, summer, autumn, winter, seasons, sunny, cloudy, hot, warm, cold, shower, raining, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, windy, rainbow, animals, young, plants, flowers. Expose children to supplementary vocabulary such as: hibernate, migrate, snowflake. **Living Things and Their Habitats** Model and encourage children to use vocabulary such as: plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment e.g. beach, forest. Expose children to supplementary vocabulary such as: environment. **Light** Model and encourage children to use vocabulary such as: Sun, sunny, light, shadow, shady, clouds, torch, see-through, non-see-through, source, light source Expose children to supplementary vocabulary such as: casting a shadow, pale, dark, transparent, opaque	hard, soft, stretchy, stiff, bendy, floppy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull, see-through, not see-through. **Seasonal Changes** Weather (sunny, rainy, windy, snowy etc.). Seasons (winter, summer, spring, autumn). Sun, sunrise, sunset, day length.	Properties of materials –as for Year 1 plus opaque, transparent and translucent, reflective, non-reflective, flexible, rigid, shape, push/pushing, pull/pulling, twist/twisting, squash/squashing, bend/bending, stretch/stretching **Living Things and Their Habitats** Living, dead, never been alive, suited, suitable, basic needs, food, food chain, shelter, move, feed. Names of local habitats e.g. pond, woodland etc. Names of micro-habitats e.g. under logs, in bushes etc.

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Forces Model and encourage children to use vocabulary such as: float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow, bounce. Expose children to supplementary vocabulary such as: force, rotate, solid, liquid, gravity. **Sound** Model and encourage children to use vocabulary such as: sound, noise, listen, hear, music, voices, bird song, traffic, sirens, thunder, high, low, loud, quiet, soft, volume, crackle, thunder, hum, buzz, roar. Expose children to supplementary vocabulary such as: source, crescendo, vibration, pitch. **Earth and Space** Model and encourage children to use vocabulary such as: Sun, Moon, Earth, star, planet, sky, day, night, space, round, bounce, float. Expose children to supplementary vocabulary such as: sunrise, sunset, astronaut, astronomer, constellation, orbit, nocturnal, slow-motion, magnify.		