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Conceptual Knowledge – Scientific knowledge and understanding				
	Year One	**Year Two**	**Year Three**	**Year Four**
Biology Animals, including humans	• I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals including those that are kept as pets. • I can understand how to take care of animals taken from my local environment and the need to return them safely after study. • I can identify and name a variety of common animals that are carnivores, herbivores and omnivores. • I can describe and compare the structure of a variety of common animals. • I can identify, name, draw and label the basic parts of the human body specifically head, neck, arms, elbows, legs, knees, face, ears, hair, mouth and teeth. • I can say which body part is associated with each sense.	• I can explain that animals have offspring that grow into adults. • I can describe the basic needs of animals for survival (water, food and air).	• I can explain that animals need the right types and amount of nutrition. • I can explain that animals cannot make their own food. • I can explain that animals get nutrition from what they eat. • I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.	• I can describe the simple functions of the basic parts of the digestive system in humans. • I can identify the different types of teeth in humans. • I can explain the simple function of different types of teeth. • I can construct and interpret a variety of food chains • I can identify producers, predators and prey.
Biology Living things and their habitats		• I can explore and compare the differences between things that are living, dead and never been alive. • I can identify that most living things live in habitats to which they are suited • I can describe how different habitats provide for the basic needs of different kinds of animals.		• I can recognise that living things can be grouped in a number of ways. • I can explore and use classification keys to help group, identify. • I can name a variety of living things in their local and wider environment. • I can recognise that environments can change and this sometimes poses dangers to living things.

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		• I can identify and name a variety of plants and animals in their habitats. • I can describe how animals obtain their food from plants and other animals using a simple food chain. • I can identify and name the different sources of food.		
Biology Plants	• I can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • I can identify and describe the basic structure of a variety of common flowering plants, including trees. Specifically leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches and stem.	• I can observe and describe how plants need water, light and a suitable temperature to grow and stay healthy. • I can observe and describe how seeds and bulbs grow into mature plants.	• I can identify and describe the functions of different parts of flowering plants (roots, stem, trunk, leaves and flowers). • I can explore the requirements for life and growth (air, light, water, nutrients, room to grow) and how they vary from plant to plant. • I can investigate the way in which water is transported within plants. • I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	
Chemistry Materials	Everyday materials • I can distinguish between an object and the material from which it is made. • I can identify and name a variety of everyday materials including wood, plastic, glass, metal, water and rock. • I can describe the simple physical properties of a variety of everyday materials. • I can compare and group together a variety of everyday	Uses of everyday materials • I can identify and compare the suitability of a variety of everyday materials including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • I can find out how the shapes of solid objects made from some materials can be changed by squishing, bending, twisting and stretching.		States of matter • I can compare and group materials together according to whether they are solids, liquids or gasses. • I can observe that some materials change state when they are heated or cooled and measure or research the temperature at which this happens in degrees c. • I can identify the part played by evaporation and condensation in the water cycle.

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	materials on the basis of their simple physical properties.			• I can associate the rate of evaporation with temperature.
Chemistry Rocks			• I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. • I can describe in simple terms how fossils are formed when things that have lived are trapped within rock. • I can recognise that soils are made from rocks and organic matter.	
Physics Light			• I can recognise that they need light in order to see things and that dark is the absence of light. • I can notice that light is reflected from surfaces. • I can recognise that light from the sun can be dangerous. • I can identify ways to protect my eyes from the sun. • I can recognise that shadows are formed when the light from a light source is blocked by a solid object. • I can find patters in the way that the size of shadows change.	
Physics Electricity				• I can identify common appliances that run on electricity. • I can construct a simple series electrical circuit,. • I can identify and name basic electrical parts including cells, wires, bulbs, switches and buzzers. • I can identify whether or not a lamp will light in a simple series circuit based on whether or not

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				the lamp is part of a complete loop with a battery. • I can recognise that a switch opens and closes a circuit. • I can recognise some common conductors and insulators and associate metals with being good conductors.
Physics Forces and magnets			• I can compare how things move on different surfaces. • I can notice that some forces need contact between two objects but magnetic forces can act at a distance. • I can observe how magnets attract or repel each other. • I can observe how magnets attract some materials and not others. • I can compare and group together a variety of every day materials on the basis of whether they are magnetic. • I can describe magnets as having two poles. • I can predict whether two magnets will attract or repel each other.	
Physics Seasonal changes	• I can observe changes across the four seasons. • I can observe and describe the weather associated with the seasons and how day length varies.			
Physics Sound				• I can identify how sounds are made, associating some of them with something vibrating. • I can recognise that vibrations from sounds travel through a medium to the ear.

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				• I can find patterns between the pitch of a sound. • I can identify features of the object that produce a sound. • I can find patterns between the volume of a sound and the strength of the vibrations that produced it. • I can recognise that sounds get fainter as the distance from the sound source increases.
Disciplinary Knowledge – Working Scientifically				
	Year One	**Year Two**	**Year Three**	**Year Four**
Posing questions	• I can explore the world around me. • I can raise my own simple questions. • I can recognise there are different types of enquiry (ways to answer a question). • I can respond to suggestions of how to answer my question.		• I can begin to raise further questions during the enquiry process. • I can consider what makes a testable question. • I can begin to recognise that there are different types of enquiry and that they are suitable for different questions. • I can begin to make suggestions about how different questions could be answered.	
Planning	• I can begin to recognise whether a test is fair. • I can, with support, decide if suggested observations are suitable. • I can order a simple method.		• I can begin to select from options which variables will be changed, measured and controlled. • I can suggest what observations to make and how long to make them for. • I can plan a simple method, verbally and in writing. • I can begin to write a simple method in numbered steps. • I can select and begin to decide what simple equipment might be used to aid observations and measurements.	
Predicting	• I can suggest what might happen, often justifying with personal experience.		• I can make predictions about what I think might happen by: ✓ Using scientific knowledge and/or personal experience to explain my prediction ✓ Beginning to consider cause and effects when making predictions, where appropriate ✓ Predicting a trend by considering how the changing variable will affect the measured variable.	
Observing (qualitative data)	• I can use my senses to describe, in simple terms, what I notice or what has changed.		• I can use my senses to describe, in more detail and with simple scientific vocabulary, what I notice or what has changed.	

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Measuring (quantitative data)	• I can use non-standard units to measure and compare. • I can begin to use standard units to measure and compare. • I can begin to use simple measuring equipment to make approximate measurements. • I can read simple numbered scales.	• I can use standard units to measure and compare. • I can use measuring equipment with increasing accuracy. • I can read scales with unmarked intervals between numbers.
Researching	• I can gather specific information from one simplified, specified source.	• I can gather specific information from a variety of sources.
Recording (diagrams)	• I can draw and label simple diagrams.	• I can begin to draw more scientific diagrams by: ✓ Using some standard symbols ✓ Drawing in 2D to produce simple line diagrams ✓ Labelling with more scientific vocabulary.
Recording (tables)	• I can use a prepared table to record results including: ✓ Numbers ✓ Simple observations ✓ Tally frequency	• I can use a prepared table to record results including more detailed observations. • I can use tables with more than two columns. • I can identify and add headings to tables. • I can begin to design simple results tables.
Grouping and classifying	• I can group based on visible characteristics. • I can organise questions to create a simple classification key.	• I can group based on visible characteristics and measurable properties. • I can populate a pre-prepared branching and number key. • I can choose appropriate questions for classification keys.
Graphing	• I can represent data using pictograms and block charts.	• I can represent data using bar charts. • I can draw bars with greater accuracy. • I can read the value of bars with greater accuracy.
Analysing and drawing conclusions	• I can use my results to answer simple questions. • I can begin to recognise when results or observations do not match my predictions.	• I can write a conclusion to summarise findings using simple scientific vocabulary. • I can begin to suggest how one variable may have affected another. • I can begin to quote results as evidence of relationships. • I can identify data that does not fit a pattern (anomalous data). • I can recognise when results or observations do not match my predictions. • I can begin to use identified patterns to predict new values or trends.
Evaluating	• I can begin to recognise whether a test is fair or not.	• I can begin to identify steps in the method that need changing and suggest improvements. • I can begin to identify which variables were difficult to control and suggesting how to better control them. • I can comment on the degree of trust by reflecting on: ✓ Results that do not fit a pattern (anomalies) ✓ The quality of results (Accurate measurements and maintaining control of the variables) • I can begin to identify new questions that would further the enquiry.
Science in Action – Understanding the uses and implications of Science, today and for the future		

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	Year One	Year Two	Year Three	Year Four
Historical applications of Science	• I can discuss famous scientists throughout history.		• I can discuss famous scientists throughout history. • I can explore spiritual, moral, social and cultural links with Science.	
The Scientific community and beyond	• I can understand how scientific knowledge has changed over time, leading to the current understanding of Science. • I can understand that mistakes can lead to new discoveries. • I can discuss science in the news and recent discoveries.		• I can discuss the methods and equipment used by scientists throughout history and how these have led to modern methods. • I can understand how scientific knowledge has changed over time, leading to the current understanding of Science. • I can understand that mistakes can lead to new discoveries. • I can explain how collaboration and peer reviewing is essential for effective scientific progress. • I can discuss science in the news and recent discoveries.	
Careers that use Science	• I can discuss a range of jobs and careers that use scientific knowledge and methods. • I can discuss the work of modern-day scientists.		• I can discuss a range of jobs and careers that use scientific knowledge and methods. • I can discuss the work of modern-day scientists. • I can discuss current scientific research and what it aims to achieve in the future.