

GUARDIAN ANGELS RCPS SCIENCE SKILLS PROGRESSION MAP

Nursery

Children can communicate their personal needs to an adult – hungry, tired, full-up. They can talk simply about how their body feels and healthy choices e.g. “I need to wash my hands, they are sticky.” They understand and use the vocabulary associated with health-care – teeth brushing, wash hands, dry hands, toilet, wipe etc. They express preferences when trying different foods. They gain more bladder and bowel control and can attend to toileting needs most of the time. They can usually manage washing and drying hands. They can dress with help e.g. puts arms into open-fronted coat or shirt when held up.

Children are usually clean and dry through day and are able to wash and dry hands. They can brush their teeth. They can undress and dress except for laces, ties and back buttons. They eat a range of foods and understands the need for variety. They eat skilfully with spoon and fork and are able to spread butter on bread with a knife.

Children noticed details features of objects in their environment and can talk simply about some of the things they have observed such as plants, animals, natural and found objects.

Children are able to name their senses and the parts of their body related to each sense. They can talk simply about the senses they are using when exploring materials, objects and living things e.g. “I want to smell the flower.” They use everyday language to talk about similarities and differences in objects they are exploring e.g. this one is bumpy but this one is smooth and talk about what they see using a widening vocabulary. They can talk about the changes they notice in materials e.g. ice melting and talk about how things work and why things happen.

Children comment and ask questions about aspects of the natural world. They understand and use the language associated with planting and growing – seed, soil, water, sun, grow, plant. They show understanding of and simply describe the life-cycle of a plant or animal e.g. a runnerbean/a frog using

some specific language. They use talk to simply describe how to care for a plant, animal and the environment e.g. "You need to hold it gently"/"I will put it back in the soil."

Children can talk about the natural world around them using some specific vocabulary and ask questions. They can explain why things occur and talk about changes in relation to animals and plants. They use talk to describe things they explore using their different senses including making comparisons and using some specific vocabulary.

Children know that the seasons change and describe the changes in the natural world around them.

Children play with small world reconstruction, building on first-hand experiences and stories about animals and the outdoors e.g. visiting farms, garages, train tracks, walking by river, 'We're going on a bear hunt'.

Reception

- Children show an understanding of the effect their behaviour can have on the environment.
- Children know and can talk about similarities and differences in relation to objects, materials and living things. They make observations of animals and plants, and explain why things occur, and talk about changes, for example, with the weather, seasons and plants.
- Children can talk about the different factors that support overall health and well-being: regular physical activity, healthy eating, toothbrushing, limited 'screen-time', having a good sleep routine, being a safe pedestrian, handwashing & general hygiene. To name and explain daily routines that look after their needs e.g. washing hands, healthy food choices. They can wash and dries face and hands but needs help and supervision for the rest and can undress and dress alone. They can use a knife and fork with increasing competence.

- Children are able to name the seasons in order and describe the changes in the natural world around them.

YEAR 1

Working Scientifically		Biology	Chemistry
I can: • Ask simple scientific questions • Use simple equipment to make observations • Carry out simple tests • Identify and classify things • Suggest what I have found out • Use simple data to answer questions.		I can: • Name a variety of common plants • Name the petals, stem, leaf and root of a plant • Name the roots, trunk, branches and leaves of a tree • Name a variety of animals • Classify and name animals by what they eat (carnivore, herbivore, omnivore) • Sort animals into categories • Sort living and non-living things • Name the parts of the human body I can see • Link the correct part of the human body to each sense.	I can: • Distinguish between an object and the material it is made of • Explain the materials that an object is made from • Name wood, plastic, glass, metal, water and rock • Describe the properties of everyday materials • Group objects based on the materials they are made from.

YEAR 2

Working Scientifically	Biology	Chemistry	Physics
I can: • Ask simple scientific questions • Use simple equipment to make observations • Carry out simple tests • Identify and classify things • Suggest what I have found out • Use simple data to answer questions.	I can: • Identify things that are living, dead, never lived • Describe how a habitat provides for the basic needs of living things – plants/animals • Identify and name plants and animals in different habitats • Match living things to their habitat • Describe how animals find their food • Name some different sources of food for animals • Explain a simple food chain • Describe how plants and seeds grow into plants • Describe what plants need in order to grow and stay healthy • Explain the basic stages in a life cycle for animals, including humans • Describe what animals and humans need to survive • Describe why exercise, a balanced diet and good hygiene are important for humans	I can: • Identify and name a range of materials • Suggest why a material might or might not be used for a specific job • Explore how shapes can be changed by squashing, bending, twisting and stretching.	

YEAR 3			
Working Scientifically	Biology	Chemistry	Physics
I can: • Ask relevant scientific questions Use observations and knowledge to answer scientific questions • Set up a simple enquiry to explore a scientific question • Set up a test to compare two things • Set up a fair test and explain why it is fair • Make careful and accurate observations, including the use of standard units • Use equipment to make measurements • Gather, record, classify and present data in different ways to answer scientific questions • Use diagrams, keys, bar charts and tables using scientific language Use findings to report in different ways, including oral and written explanations • Draw conclusions and suggest improvements • Make a prediction with a reason • Identify differences, similarities and changes related to an enquiry.	I can: • Describe the function of different parts of plants and trees • Explore and describe the needs of different plants for survival • Explore and describe how water is transported within plants • Describe the plant life cycle, especially the importance of flowers. I can: • Explore the importance of a nutritious balanced diet • Explain how nutrients, water and oxygen are transported within animals and humans • Describe and explain the skeletal and muscular system of a human • Describe the purpose of the skeleton in humans and in animals.	I can: • Compare and group rocks based on their appearance and physical properties, giving a reason • Describe how soil is made • Describe and explain the difference between sedimentary and igneous rock	I can: • Describe what dark is • Explain that light is needed in order to see • Explain that light is reflected from a surface • Explore shadow size and explain • Explain the danger of direct sunlight and describe how to keep protected I can: • Explore and describe how objects move on different surfaces • Explain how some forces require contact and some do not, giving examples • Explore and explain how objects attract and repel in relation to objects and other magnets • Predict whether objects will be magnetic and carry out an enquiry to test this out • Describe how magnets work

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YEAR 4

Working Scientifically	Biology	Chemistry	Physics
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I can: • Ask relevant scientific questions • Use observations and knowledge to answer scientific questions • Set up a simple enquiry to explore a scientific question • Set up a test to compare two things • Set up a fair test and explain why it is fair • Make careful and accurate observations, including the use of standard units • Use equipment to make measurements • Gather, record, classify and present data in different ways to answer scientific questions • Use diagrams, keys, bar charts and tables, using scientific language • Use findings to report in different ways, including oral and written explanations • Draw conclusions and suggest improvements • Make a prediction with a reason • Identify differences, similarities and changes related to an enquiry.	I can: • Group living things in different ways • Use classification keys to group, identify and name living things • Create classification keys to group, identify and name living things • Describe how changes to an environment could endanger living things I can: • Identify and name the parts of the human digestive system • Describe the functions of the organs in the human digestive system • Identify and describe the different types of teeth in humans • Describe the functions of different human teeth • Use food chains to identify producers, predators and prey • Construct food chains to identify producers, predators and prey	I can: • Group materials based on their state of matter (solid, liquid, gas) • Describe how some materials change state • Measure the temperature of materials which change state • Describe the water cycle • Explain the part played by evaporation and condensation in the water cycle.	I can: • Describe how sound is made • Explain how sound travels from a source to our ears • Explain the place of vibration in hearing • Explore the correlation between pitch and the object producing a sound • Explain the correlation between the volume of a sound and the strength of the vibrations that produced it • Describe what happened to a sound as it travels away from its source. I can: • Identify and name appliances that need electricity to function • Conduct a series circuit • Identify and name the components in a series circuit • Draw a circuit diagram • Predict and test whether a lamp will light within a circuit • Describe the function of a switch in a circuit • Describe the difference between a conductor and an insulator giving examples of each.
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YEAR 5			
Working Scientifically	Biology	Chemistry	Physics
I can: - Plan different types of scientific enquiry - Control variables in an enquiry - Measure accurately and precisely using a range of equipment - Record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Use the outcome of test results to make predictions and set up a further comparative fair test - Report findings from enquiries in a range of ways - Explain a conclusion from an enquiry - Explain causal relationships in an enquiry - Relate the outcomes from an enquiry to scientific knowledge in order to state whether evidence supports or refutes and argument/theory - Read, spell and pronounce scientific vocabulary accurately.	I can: - Describe the life cycle of different living things - Describe the differences between different life cycles - Describe the process of reproduction in plants and animals. I can: - Create a timeline to indicate stages of growth in humans.	I can: - Compare and group materials based on their properties – hardness, solubility, transparency, conductivity - Describe how a material dissolves to form a solution, explaining the process of dissolving - Describe and show how to recover a substance from a solution - Describe how some materials can be separated - Demonstrate how materials can be separated - Know and can demonstrate that some changes are reversible and some are not - Explain how some changes result in the formation of a new material and that this is usually irreversible - Discuss reversible and irreversible changes - Give evidenced reasons why materials should be used for specific purposes.	I can: - Describe and explain the movement of the Earth and other planets relative to the Sun - Describe and explain the movement of the Moon relative to the Earth - Explain and demonstrate how night and day are created - Describe the Sun, Earth and Moon (using the term spherical) I can: - Explain what gravity is and the impact on our lives - Identify and explain the effect of air resistance and of water resistance - Identify and explain the effect of friction - Explain how levers, pulleys and gears allow a smaller force to have a greater effect.

YEAR 6			
Working Scientifically	Biology	Chemistry	Physics
I can: - Plan different types of scientific enquiry - Control variables in an enquiry - Measure accurately and precisely using a range of equipment - Record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs - Use the outcome of test results to make predictions and set up a further comparative fair test - Report findings from enquiries in a range of ways - Explain a conclusion from an enquiry - Explain causal relationships in an enquiry - Relate the outcomes from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument/theory - Read, spell and pronounce scientific vocabulary accurately	I can: - Classify living things into broad groups according to observable characteristics and based on similarities and differences - Describe how living things have been classified - Give reasons for classifying plants and animals in a specific way. I can: - Identify and name the main parts of the human circulatory system - Describe the function of the heart, blood vessels and blood - Discuss the impact of diet, exercise, drugs and lifestyle on health - Describe the ways in which nutrients and water are transported in animals/humans. I can: - Describe how the earth and living things have changed over time - Explain how fossils can be used to find out about the past - Explain about reproduction and offspring - Explain how animals and plants are adapted to suit their environment - Link adaptation over time to evolution - Explain evolution		I can: - Explain how light travels - Explain and demonstrate how we see objects - Explain why shadows have the same shape as the objects that casts them - Explain how simple optical instruments work – periscope, telescope, binoculars etc... I can: - Explain how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer - Compare and give reasons for why components work and do not work in a circuit - Draw circuit diagrams using correct symbols.