

Charing CEP School – Science Long term plan 2019-2020

<b>EYFS Term 1</b>	<b>EYFS Term 2</b>	<b>EYFS Term 3</b>	<b>EYFS Term 4</b>	<b>EYFS Term 5</b>	<b>EYFS Term 6</b>
<b>The World</b> Can talk about some of the things they have observed such as plants, animals, natural and found objects.	<b>The World</b> Talks about why things happen and how things work. Developing an understanding of growth, decay and changes over time.	<b>The World</b> Developing an understanding of growth, decay and changes over time. Can talk about some of the things they have observed such as plants, animals, natural and found objects.	<b>The World</b> Shows care and concern for living things and the environment. Developing an understanding of growth, decay and changes over time.	<b>The World</b> Looks closely at similarities, differences, patterns and change. Can talk about some of the things they have observed such as plants, animals, natural and found objects.	<b>The World</b> Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world.

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<b>Year 2 Term 1</b>	<b>Year 2 Term 2</b>	<b>Year 2 Term 3</b>	<b>Year 2 Term 4</b>	<b>Year 2 Term 5</b>	<b>Year 2 Term 6</b>
<p><b>Living things and their habitats 1</b></p> <p><u>LO</u> Can I identify things that are living, dead and never alive? Can I describe how a specific habitat provides for the basic needs of things living there? Can I identify and name plants and animals in a range of habitats? Can I match living things to their habitats?</p>	<p><b>Materials 1 &amp; 2</b></p> <p><u>LO</u> Can I identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard? Can I suggest why a material might or might not be used for a specific job? Can I explore how shapes can be changed by bending, squashing, twisting and stretching?</p>	<p><b>Living things and their habitats 2 (food chains, how seeds and plants grow)</b></p> <p><u>LO</u> Can I explain a simple food chain? Can I describe how animals find their food? Can I name some different sources of food for animals</p>	<p><b>Plants 2 (How seeds and bulbs grow, what plants need to grow)</b></p> <p><u>LO</u> Can I explain the basic stages in a life cycle for animals, including humans? Can I describe what plants need in order to grow and stay healthy?</p>	<p><b>Animals including humans (Exercise, diet and hygiene)</b></p> <p><u>LO</u> Can I describe what animals and humans need to survive? Can I describe why exercise, a balanced diet and good hygiene are important for humans?</p>	<p><b>Animals including humans (Offspring and growth into adults, frogspawn, basic survival needs)</b></p> <p><u>LO</u> Can I explain the basic stages in a life cycle for animals, including humans?</p>
<p><b>Year 2 investigation skills</b> 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.</p>					

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Year 3&4 Term 1	Year 3&4 Term 2	Year 3&4 Term 3	Year 3&4 Term 4	Year 3&4 Term 5	Year 3&4 Term 6
<p><b>Animals including humans</b></p> <p><u>LO</u> Can I describe and explain the skeletal system of a human? Can I describe and explain the muscular system of a human? Can I describe the purpose of the skeleton in humans and animals?</p>	<p><b>Animals including humans 2</b></p> <p><u>LO</u> Can I explain the importance of a nutritious, balanced diet? Can I explain how things like nutrients, water and oxygen are transported within animals and humans?</p>	<p><b>Rocks</b></p> <p><u>LO</u> Can I compare and group together different kinds of rocks on the basis of their appearance and simple physical properties? Can I describe in simple terms how fossils are formed when things that have lived are trapped within rock? Can I recognise that soils are made from rocks and organic matter? Can I describe and explain the difference between sedimentary and igneous rock?</p>	<p><b>Forces and magnets</b></p> <p><u>LO</u> Can I compare how things move on different surfaces? Can I notice that some forces need contact between two objects, but magnetic forces can act at a distance? Can I observe how magnets attract or repel each other and attract some materials and not others? Can I compare and group everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials? Can I describe magnets as having two poles? Can I predict how two magnets react, depending on which poles are facing?</p>	<p><b>Light</b></p> <p><u>LO</u> Do I recognise that we need light in order to see things and that dark is the absence of light? Can I notice that light is reflected from surfaces? Can I recognise that light from the sun can be dangerous and that there are ways to keep protected? Can I recognise that shadows are formed when the light from a light source is blocked by an opaque object? Can I find patterns in the way that the size of shadows change?</p>	<p><b>Plants</b></p> <p><u>LO</u> Can I identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers? Can I explore the requirements of plants for life and how they vary from plant to plant? Can I investigate the way in which water is transported within plants? Can I explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal?</p>
<p><b>Year 3&amp;4 investigation skills</b></p> <p>Asking relevant questions and using different types of scientific enquiries to answer them. Setting up simple practical enquiries, comparative and fair tests. Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions. Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. Identifying differences, similarities or changes related to simple scientific ideas and processes. Using straightforward scientific evidence to answer questions or to support their findings.</p>					

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Year 5 Term 1	Year 5 Term 2	Year 5 Term 3	Year 5 Term 4	Year 5 Term 5	Year 5 Term 6
<p><b>Living things and their habitats</b></p> <p><u>LO</u>            Can I describe the life cycle of different living things, e.g. mammal, amphibian, insect, bird?            Can I describe the differences between different life cycles?            Can I describe the process of reproduction in plants?            Can I describe the process of reproduction in animals?</p>	<p><b>Properties and changes of materials</b></p> <p><u>LO</u>            Can I compare and group materials based on their properties?            Can I describe how a material dissolves to form a solution; explaining the process of dissolving?            Can I describe and show how to recover a substance from a solution?            Can I describe how some materials can be separated?            Can I demonstrate how materials can be separated</p>	<p><b>Forces</b></p> <p><u>LO</u>            Can I explain what gravity is and its impact on our lives?            Can I identify and explain the effect of air resistance?            Can I identify and explain the effect of water resistance?            Can I identify and explain the effect of friction?            Can I explain how levers, pulleys and gears allow a smaller force to have a greater effect?</p>	<p><b>Properties and changes of materials 2</b></p> <p><u>LO</u>            Do I know and can I demonstrate that some changes are reversible and some are not?            Can I explain how some changes result in the formation of a new material and that this is usually irreversible?            Can I discuss reversible/irreversible changes?            Can I give evidenced reasons why materials should be used for specific purposes?</p>	<p><b>Earth and space</b></p> <p><u>LO</u>            Can I describe and explain the movement of the Earth and other planets relative to the sun?            Can I describe and explain the movement of the Moon relative to the Earth?            Can I explain and demonstrate how night and day are created?            Can I describe the Sun, Earth and Moon? (Using the term spherical).</p>	<p><b>Animals, including humans</b></p> <p><u>LO</u>            Can I describe the changes as humans develop from birth to old age?            Can I communicate data using a scatter graph?            Can I present conclusions.            Can I use evidence to refute or support an idea?            Can I record data within tables?            Can I record data using line graphs?</p>
<p><b>Year 5 investigation skills</b></p> <p>During years 5 and 6 children should be taught to use the following practical scientific methods, processes and skills:            Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.            Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.            Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.            Using test results to make predictions to set up further comparative and fair tests.            Reporting and presenting 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.            Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>					

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Year 6 Term 1	Year 6 Term 2	Year 6 Term 3	Year 6 Term 4	Year 6 Term 5	Year 6 Term 6
<p><b>Electricity</b></p> <p><u>LO</u>            Can I explain how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer?            Can I compare and give reasons for why components work and do not work in a circuit?            Can I draw circuit diagrams using correct symbols?</p>	<p><b>Light</b></p> <p><u>LO</u>            Can I explain how light travels?            Can I explain and demonstrate how we see objects?            Can I explain why shadows have the same shape as the object that casts them?            Can I explain how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc?</p>	<p><b>Evolution and inheritance</b></p> <p><u>LO</u>            Can I describe how the Earth and living things have changed over time?            Can I explain how fossils can be used to find out about the past?            Can I explain about reproduction and offspring? (Recognising that offspring normally vary and are not identical to their parents).            Can I explain how animals and plants are adapted to suit their environment?            Can I link adaptation over time to evolution?            Can I explain evolution?</p>	<p><b>Animals, including humans 1</b></p> <p><u>LO</u>            Can I identify and name the main parts of the human circulatory system?            Can I describe the function of the heart, blood vessels and blood?            Can I describe ways in which nutrients and water are transported in animals, including humans?            Can I discuss the impact of diet, exercise, drugs and lifestyle on health?</p>	<p><b>Living things and their habitats</b></p> <p><u>LO</u>            Can I classify living things into broad groups according to observable characteristics and based on similarities and differences?            Can I describe how living things have been classified?            Can I give reasons for classifying plants and animals in a specific way?</p>	<p><b>Investigation Unit</b></p> <p><u>LO</u>            Can I ask a scientific question?            Can I plan an investigation to answer the question?            Can I take measurements accurately?            Can I record and report data in different ways?            Can I present my information clearly?</p>
<p><b>Year 6 investigation skills</b></p> <p>During years 5 and 6 children should be taught to use the following practical scientific methods, processes and skills:            Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.            Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.            Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.            Using test results to make predictions to set up further comparative and fair tests.            Reporting and presenting 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.            Identifying scientific evidence that has been used to support or refute ideas or arguments.</p>					