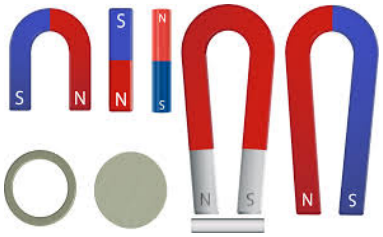
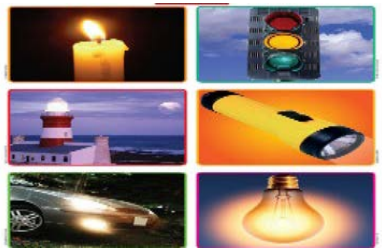
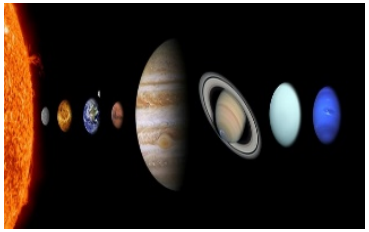
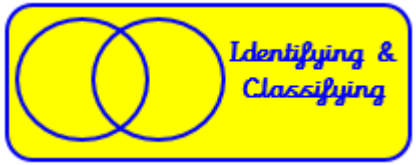
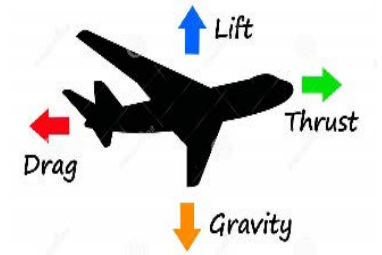
Dene House Primary School Science Curriculum Overview

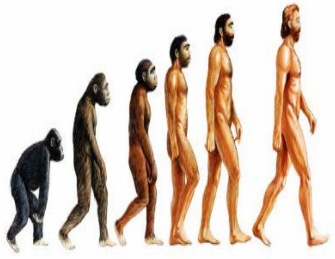






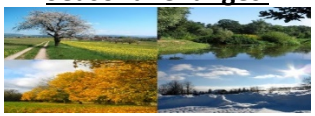






Dene House Primary School Science Curriculum Overview

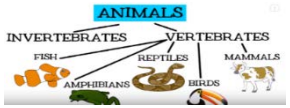
KS1 Year A

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer (and throughout the year)	Summer 2
Everyday Materials 	**Everyday Materials** 	**Plants** 	**Plants** 	**Seasonal Changes** 	**Revisit, Research and Investigate**
Everyday materials **Chemistry** Everyday materials •I can distinguish between an object and the material it is made from. •I can explain the materials that an object is made from. •I can name wood, plastic, glass, metal, water and rock. •I can describe the properties of everyday materials. •I can group objects based on the materials they are made from.	Uses of everyday materials **Chemistry** Uses of everyday materials •I can identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard. •I can suggest why a material might or might not be used for a specific job. •I can explore how shapes can be changed by squashing, bending, twisting and stretching.	Parts of a plant **Biology** Plants •I can name a variety of common wild and garden plants. •I can name the petals, stem, leaf and root of a plant. •I can name the roots, trunk, branches and leaves of a tree.	How plants grow **Biology** Plants •I can describe how seeds and bulbs grow into plants. •I can describe what plants need in order to grow and stay healthy (water, light & suitable temperature).	Seasonal Changes **Physics** Seasonal changes •I can observe and comment on changes in the seasons. •I can name the seasons and suggest the type of weather in each season.	This time will be used to perform additional scientific investigations to consolidate and apply working scientifically skills and link topics taught to P4C questions.

	Working Scientifically Skills			
	Observing Closely	**Performing Tests**	**Identifying and Classifying**	**Recording Findings**
	*Talk about what they can see, touch, smell, hear or taste, *Use simple equipment to help them make observations.	*Perform a simple test. *Tell other people about what they have done.	*Identify and classify things they observe. *Think of some questions to ask. *Answer some scientific questions. *Give a simple reason for their answers. *Explain what they have found out.	*Show their work using pictures, labels and captions. *Record their findings using standard units. *Put some information in a chart or table.
	Recording / Maths Skills			
	*Record findings using standard units e.g. cm, m, minutes, seconds *Record information in a chart or table e.g. tally chart, basic recording table *Sort things using a simple table e.g. animals, plants, materials *Present findings in a simple pictogram using real life pictures			

Dene House Primary School Science Curriculum Overview

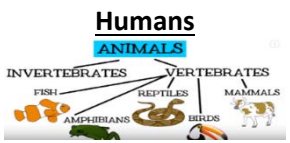
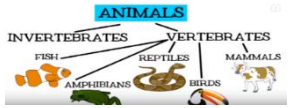
KS1 Year B

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer	Summer 2
Animals Including Humans 	**Animals Including Humans** 	**Animals Including Humans** 	**Living Things and Their Habitats** 	**Living Things and Their Habitats** 	**Revisit, Research and Investigate** This time will be used to perform additional scientific investigations to consolidate and apply working scientifically skills and link topics taught to P4C questions.
My body and healthy lifestyle **Biology** Animals, including humans •I can name the parts of the human body that I can see. •I can link the correct part of the human body to each sense. •I can describe why exercise, a balanced diet and good hygiene are important for humans.	Growth and survival **Biology** Animals, including humans •I can explain the basic stages in a life cycle for animals, including humans. •I can describe what animals and humans need to survive.	Classifying Animals **Biology** Animals, including humans •I can name a variety of animals including fish, amphibians, reptiles birds and mammals. •I can classify and name animals by what they eat (carnivore, herbivore and omnivore). •I can sort animals into categories (including fish, amphibians, reptiles, birds and mammals).	Living things and their habitat **Biology** Living things and their habitats •I can sort living and non-living things. •I can identify things that are living, dead and never lived. •I can describe how a specific habitat provides for the basic needs of things living there (plants and animals).	Living things and their habitat **Biology** Living things and their habitats •I can identify and name plants and animals in a range of habitats. •I can match living things to their habitat. •I can describe how animals find their food. •I can name some different sources of food for animals. •I can explain a simple food chain.	

Working Scientifically Skills			
Observing Closely	**Performing Tests**	**Identifying and Classifying**	**Recording Findings**
*Use see, touch, smell, hear or taste to help them answer questions. *Use some scientific words to describe what they have seen and measured. *Compare several things.	*Carry out a simple fair test. *Explain why it might not be fair to compare two things. *Say whether things happened as they expected. *Suggest how to find things out. *Use prompts to find things out	*Organise things into groups. *Find simple patterns or associations *Identify animals and plants by a specific criteria, eg. lay eggs or not; have feathers or not.	*Use text, diagrams, pictures, charts, or tables to record their observations. *Measure using simple equipment.
Recording / Maths Skills			
*Venn diagrams – sorting animals, plants or materials *Carroll diagram – sorting animals *Measure and record findings using standard units e.g. cm, m, minutes, seconds *Record information in a chart or table e.g. tally chart, basic recording table *Measure using simple equipment e.g. thermometers, measuring tape, ruler, *Present findings in a bar chart, pictogram			

Dene House Primary School Science Curriculum Overview

KS2 Lower Year A

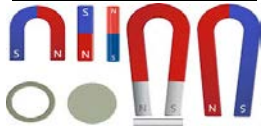
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer	Summer 2
Sound 	**Light** 	**Animals Including Humans** 	**Animals Including Humans** 	**Living Things and Their Habitats** 	**Revisit, Research and Investigate** This time will be used to perform additional scientific investigations to consolidate and apply working scientifically skills and link topics taught to P4C questions.
Sound **Physics** Sound •I can describe how sound is made. •I can explain how sound travels from a source to our ears. •I can explain the place of vibration in hearing. •I can explore the correlation between pitch and the object producing a sound. •I can explore the correlation between the volume of a sound and the strength of the vibrations that produced it. •I can describe what happens to a sound as it travels away from its source.	Light **Physics** Light •I can describe what dark is (the absence of light). •I can explain that light is needed in order to see. •I can explain that light is reflected from a surface. •I can explain and demonstrate how a shadow is formed. •I can explore shadow size and explain. •I can explain the danger of direct sunlight and describe how to keep protected.	Balanced Diet and Skeletons **Biology** Animals, including humans •I can explain the importance of a nutritious, balanced diet. •I can explain how nutrients, water and oxygen are transported within animals and humans. •I can describe and explain the skeletal system of a human. •I can describe and explain the muscular system of a human. •I can describe the purpose of the skeleton in humans and animals.	Digestion and Teeth **Biology** Animals, including humans •I can identify and name the parts of the human digestive system. •I can describe the functions of the organs in the human digestive system. •I can identify and describe the different types of teeth in humans. •I can describe the functions of different human teeth. •I can use food chains to identify producers, predators and prey. •I can construct food chains to identify producers, predators and prey.	Living things and their Habitat **Biology** Living things and their habitats •I can group living things in different ways. •I can use classification keys to group, identify and name living things. •I can create classification keys to group, identify and name living things (for others to use). •I can describe how changes to an environment could endanger living things.	

Working Scientifically Skills		
Planning	**Obtaining and Presenting Evidence**	**Considering Evidence and Evaluating**
*Set up a simple fair test to make comparisons *Plan a fair test and isolate variables, explaining why it was fair and which variables have been isolated *Suggest improvements and predictions *Decide which information needs to be collected and decide which is the best way for collecting it *Use their findings to draw a simple conclusion	*Take measurements using different equipment and units of measure and record what they have found in a range of ways *Make accurate measurements using standard units *Explain their findings in different ways (display, presentation, writing)	*Find any patterns in their evidence or measurements *Make a prediction based on something they have found out *Evaluate what they have found using scientific language, drawings, labelled diagrams, bar charts and tables. *Use straightforward scientific evidence to answer questions or to support their findings *Identify differences, similarities or changes related to simple scientific ideas or processes

Recording / Maths Skills	
*Record information in a chart or table (Drawn independently)	*Interpret and present data using bar charts and time graphs
*Present findings using bar charts (Scaled)	*Compare information presented in bar charts, tables, and other graphs.
*Venn diagrams – sorting animals, plants or materials	*Find patterns in their evidence / measurements
*Carroll diagram – sorting animals	*Use a range of equipment and measure accurately
*Measure and record findings using standard units e.g. cm, m, minutes, seconds to 1 decimal place	
*Round measurements with one place to the nearest whole number.	

Dene House Primary School Science Curriculum Overview

KS2 Lower Year B

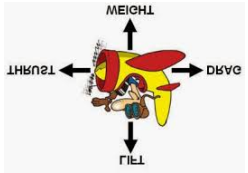
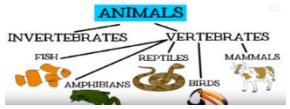
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer	Summer 2
Electricity 	**States of Matter** 	**Rocks and Solids** 	**Forces and Magnets** 	**Plants** 	**Revisit, Research and Investigate** This time will be used to perform additional scientific investigations to consolidate and apply working scientifically skills and link topics taught to P4C questions.
Electricity **Physics** Electricity •I can identify and name appliances that require electricity to function. •I can construct a series circuit. •I can identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers). •I can draw a circuit diagram. •I can predict and test whether a lamp will light within a circuit. •I can describe the function of a switch in a circuit. •I can describe the difference between a conductor and insulators; giving examples of each.	States of Matter **Chemistry** States of matter •I can group materials based on their state of matter (solid, liquid, gas). •I can describe how some materials can change state. •I can explore how materials change state. •I can measure the temperature at which materials change state. •I can describe the water cycle. •I can explain the part played by evaporation and condensation in the water cycle.	Rocks **Chemistry** Rocks •I can compare and group rocks based on their appearance and physical properties, giving a reason. •I can describe how fossils are formed. •I can describe how soil is made. •I can describe and explain the difference between sedimentary and igneous rock.	Forces and Magnets Forces and magnets •I can explore and describe how objects move on different surfaces. •I can explain how some forces require contact and some do not, giving examples. •I can explore and explain how objects attract and repel in relation to objects and other magnets. •I can predict whether objects will be magnetic and carry out an enquiry to test this out. •I can describe how magnets work. •I can predict whether magnets will attract or repel and give a reason.	Plants **Biology** Plants •I can describe the function of different parts of flowing plants and trees. •I can explore and describe the needs of different plants for survival. •I can explore and describe how water is transported within plants. •I can describe the plant life cycle, especially the importance of flowers.	

Working Scientifically Skills		
Planning	**Obtaining and Presenting Evidence**	**Considering Evidence and Evaluating**
*Set up a simple fair test to make comparisons *Plan a fair test and isolate variables, explaining why it was fair and which variables have been isolated *Suggest improvements and predictions *Decide which information needs to be collected and decide which is the best way for collecting it *Use their findings to draw a simple conclusion	*Take measurements using different equipment and units of measure and record what they have found in a range of ways *Make accurate measurements using standard units *Explain their findings in different ways (display, presentation, writing)	*Find any patterns in their evidence or measurements *Make a prediction based on something they have found out *Evaluate what they have found using scientific language, drawings, labelled diagrams, bar charts and tables. *Use straightforward scientific evidence to answer questions or to support their findings *Identify differences, similarities or changes related to simple scientific ideas or processes

Recording / Maths Skills	
*Record information in a chart or table (Drawn independently)	*Interpret and present data using bar charts and time graphs
*Present findings using bar charts (Scaled)	*Compare information presented in bar charts, tables, and other graphs.
*Venn diagrams – sorting animals, plants or materials	*Find patterns in their evidence / measurements
*Carroll diagram – sorting animals	*Use a range of equipment and measure accurately
*Measure and record findings using standard units e.g. cm, m, minutes, seconds to 1 decimal place	
*Round measurements with one place to the nearest whole number.	

Dene House Primary School Science Curriculum Overview

KS2 Upper Year A

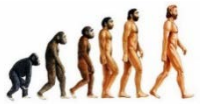
Autumn 1 and 2	Spring 1	Spring 2	Summer	Summer 2
Properties and Changes of Materials 	**Earth and Space** 	**Forces in Action** 	**Animals Including Humans** 	**Revisit, Research and Investigate** This time will be used to perform additional scientific investigations to consolidate and apply working scientifically skills and link topics taught to P4C questions.
Properties and Changes of Materials **Chemistry** •I can compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets). •I can describe how a material dissolves to form a solution; explaining the process of dissolving. •I can describe and show how to recover a substance from a solution. •I can describe how some materials can be separated. •I can demonstrate how materials can be separated (e.g. through filtering, sieving and evaporating). •I know and can demonstrate that some changes are reversible and some are not. •I can explain how some changes result in the formation of a new material and that this is usually irreversible. •I can discuss reversible and irreversible changes. •I can give evidenced reasons why materials should be used for specific purposes.	Earth and Space **Physics** **Earth and space** •I can describe and explain the movement of the Earth and other planets relative to the Sun. •I can describe and explain the movement of the Moon relative to the Earth. •I can explain and demonstrate how night and day are created. •I can describe the Sun, Earth and Moon (using the term spherical).	Forces in Action **Forces** •I can explain what gravity is and its impact on our lives. •I can identify and explain the effect of air resistance. •I can identify and explain the effect of water resistance. •I can identify and explain the effect of friction. •I can explain how levers, pulleys and gears allow a smaller force to have a greater effect.	Animals Including Humans **Biology** Animals, including humans •I can identify and name the main parts of the human circulatory system. •I can describe the function of the heart, blood vessels and blood. •I can discuss the impact of diet, exercise, drugs and lifestyle on health. •I can describe the ways in which nutrients and water are transported in animals, including humans.	

Working Scientifically Skills		
Planning	**Obtaining and Presenting Evidence**	**Considering Evidence and Evaluating**
*Set up a simple fair test to make comparisons *Plan a fair test and isolate variables, explaining why it was fair and which variables have been isolated *Suggest improvements and predictions *Decide which information needs to be collected and decide which is the best way for collecting it *Use their findings to draw a simple conclusion	*Take measurements using different equipment and units of measure and record what they have found in a range of ways *Make accurate measurements using standard units *Explain their findings in different ways (display, presentation, writing)	*Find any patterns in their evidence or measurements *Make a prediction based on something they have found out *Evaluate what they have found using scientific language, drawings, labelled diagrams, bar charts and tables. *Use straightforward scientific evidence to answer questions or to support their findings *Identify differences, similarities or changes related to simple scientific ideas or processes

Recording / Maths Skills	
*Record information in a chart or table (Drawn independently)	*Interpret and present data using bar charts and time graphs
*Present findings using bar charts (Scaled)	*Compare information presented in bar charts, tables, and other graphs.
*Venn diagrams – sorting animals, plants or materials	*Find patterns in their evidence / measurements
*Carroll diagram – sorting animals	*Use a range of equipment and measure accurately
*Measure and record findings using standard units e.g. cm, m, minutes, seconds to 1 decimal place	
*Round measurements with one place to the nearest whole number.	

Dene House Primary School Science Curriculum Overview

KS2 Upper Year B

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer	Summer 2
Living Things and Their Habitats/ Animals Including Humans 	**Living things in their Habitats** 	**Evolution and Inheritance** 	**Electricity** 	**Light** 	**Revisit, Research and Investigate**
Living Things and their Habitats : Life Cycles Animals including Humans : Changes of Growth in Humans **Biology** **Living things and their habitats** •I can describe the life cycle of different living things, e.g. mammal, amphibian, insect bird. •I can describe the differences between different life cycles. •I can describe the process of reproduction in plants. •I can describe the process of reproduction in animals. **Animals, including humans** •I can create a timeline to indicate stages of growth in humans.	Living things in their habitats : Classification **Biology** Living things and their habitats •I can classify living things into broad groups according to observable characteristics and based on similarities & differences. •I can describe how living things have been classified. •I can give reasons for classifying plants and animals in a specific way.	Evolution And Inheritance **Biology** Evolution and inheritance •I can describe how the earth and living things have changed over time. •I can explain how fossils can be used to find out about the past. •I can explain about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents). •I can explain how animals and plants are adapted to suit their environment. •I can link adaptation over time to evolution. •I can explain evolution.	Electricity Changing Circuits **Physics** Electricity •I can explain how the number & voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer. •I can compare and give reasons for why components work and do not work in a circuit. •I can draw circuit diagrams using correct symbols.	Light **Physics** Light •I can explain how light travels. •I can explain and demonstrate how we see objects. •I can explain why shadows have the same shape as the object that casts them. •I can explain how simple optical instruments work, e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.	This time will be used to perform additional scientific investigations to consolidate and apply working scientifically skills and link topics taught to P4C questions.

Working Scientifically Skills		
Planning	**Obtaining and Presenting Evidence**	**Considering Evidence and Evaluating**
*Explore different ways to test an idea, choose the best way, and give reasons *Vary one factor whilst keeping the others the same in an experiment then explain why they do this *Plan and carry out an investigation by controlling variables fairly and accurately *Make a prediction with reasons *Use information to help make a prediction *Use test results to make further predictions and set up further comparative tests *Explain, in simple terms, a scientific idea and what evidence supports it *Present a report of their findings through writing, display and presentation	*Explain why they have chosen specific equipment (including ICT based equipment) *Decide which units of measurement they need to use *Explain why a measurement needs to be repeated *Record their measurements in different ways (incl bar charts, tables and line graphs) *Take measurements using a range of scientific equipment with increasing accuracy and precision	*Find a pattern from their data and explain what it shows *Use a graph to answer scientific questions *Link what they have found out to other science *Suggest how to improve their work and say why they think this *Record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models *Report findings from investigations through written explanations and conclusions *Identify scientific evidence that has been used to support to refute ideas or arguments *Report and present 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
Recording / Maths Skills		
*Measure and record findings using standard units e.g. cm, m, minutes, seconds to 1 decimal place *Round measurements with one place to the nearest whole number. *Use a range of equipment and measure accurately with increasing accuracy and precision *Take repeat findings accurately where appropriate *Record more complex data and results using scientific diagrams, labels, classification keys, scatter graphs, bar charts, line graphs and models. *Interpret and present data using bar, line and time graphs *Compare information presented in bar charts, tables, and other graphs. *Find patterns in their evidence / measurements		