Colmore Junior Science Curriculum Year

Autumn Term *Human Body*

	KEY SKILLS	
CONTENT	To Work Scientifically	Biology – To Understand Animals & Humans
Unit 1: Recording what children already know, learning to take measurements, gather results and present them to others **Unit 2 & 3:** Identify that humans and some animals have skeletons for support, protection and movement **Unit 4 & 5:** Identify the different types of teeth in humans and their simple functions **Unit 6 & 7:** Identify that animals, including humans, get nutrition from what they eat  	Ask relevant questions Observe closely, using simple equipment Perform simple tests Identify and classify Gather and record data to help in answering questions Set up simple, practical enquiries and comparative and fair tests Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables	 Identify name, draw and label the basic parts of the human body and say which part of the body is associated with each sense Investigate and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene Identify the different types of teeth in humans and their simple functions that humans and some animals have skeletons and muscles for support, protection and movement Identify that humans and some animals have skeletons and muscles for support, protection and movement

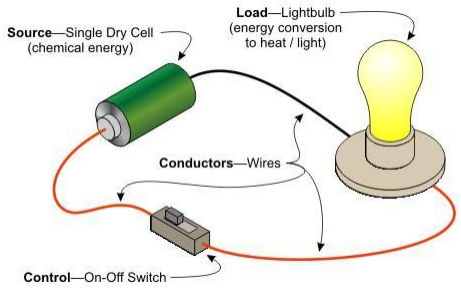
Colmore Junior Science Curriculum Year 3

Autumn Term *Materials - Rocks*

	KEY SKILLS	
CONTENT	To Work Scientifically	Chemistry – To Investigate Materials
Unit 1 & 2: Identifying and comparing the suitability of a variety of everyday materials **Unit 3:** Compare and group together different kinds of rocks & identify the features of the three main types of rocks **Unit 4:** Compare and group together different kinds of rocks & investigate the hardness of different types of rocks **Unit 5:** Recognise that soils are made from rocks and organic matter & understand how soil is made from rocks **Unit 6:** Recognise that soils are made from rocks and organic matter & investigate the absorbency of different soils **Unit 7: R**ecognise that soils are made from rocks and organic matter & identify the layers in the soil profile	 Ask simple Observe cl Perform simple tests Identify and classify Use observations and ideas to suggest answers to questions Gather and record data to help in answering questions	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties. Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard for particular uses Compare and group together different kinds of rocks on the basis of their simple, physical properties Relate the simple physical properties of some rocks to their formation (igneous or sedimentary) Recognise that soils are made from rocks and organic matter

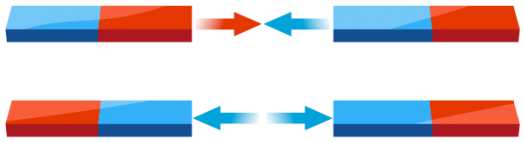
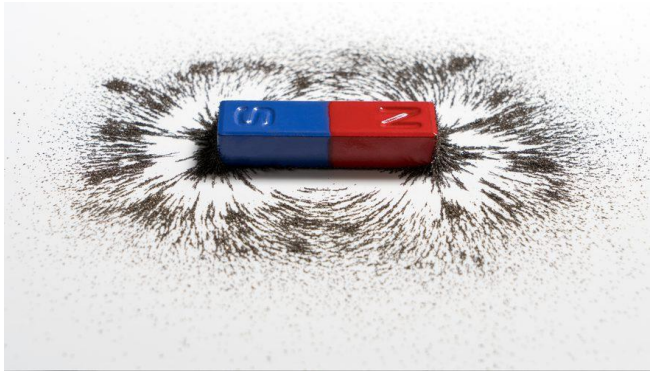
Colmore Junior Science Curriculum Year 3

Spring Term *Electricity*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics - To Understand Electrical Circuits
Unit 1: Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers **Unit 2:** Use recognised symbols when representing a simple circuit in a diagram **Unit 3:** Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit **Unit 4:** Recognise some common conductors and insulators, and associate metals with being good conductors **Unit 5:** Understand how electricity is used and how it can be generated **Unit 6:** Design a working electric game **Unit 7:** Construct a working electric game	Ask simple questions Observe closely, using simple equipment Perform simple tests Identify and classify Use observations and ideas to suggest answers to questions Gather and record data to help in answering questions Set up simple, practical enquiries and comparative and fair tests Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Identify differences, similarities or changes related to simple, scientific ideas and processes	Construct a simple series electrical circuit Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with the battery Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors 

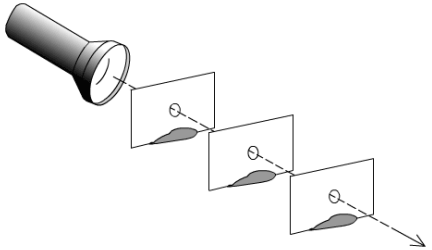
Colmore Junior Science Curriculum Year 3

Spring Term *Magnets*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics – To Understand Movement, Forces and Magnets
Unit 1: Recording what children already know about magnets, identify and explain how magnets are used in everyday life **Unit 2:** Describe magnets as having two poles; to predict whether two magnets will attract or repel each other, depending on which poles are facing **Unit 3:** Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials **Unit 4:** Test the strength of different magnets **Unit 5:** Understand that some forces need contact between two objects, but magnetic forces can act at a distance **Unit 6:** Design a working magnetic game **Lesson 7:** Construct a working magnetic game	Ask simple questions Observe closely, using simple equipment Perform simple tests Identify and classify Use observations and ideas to suggest answers to questions Gather and record data to help in answering questions make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers 	 Notice that some forces need contact between two objects, but magnetic forces can act at a distance Observe how magnets attract or repel each other and attract some materials and not others Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials Describe magnets as having two poles Predict whether two magnets will attract or repel each other, depending on which poles are facing

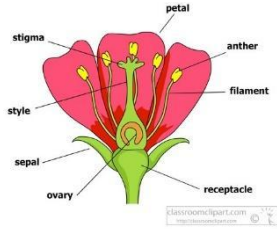
Colmore Junior Science Curriculum Year 3

Summer Term *Light*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics – To Understand Light and Seeing
Unit 1: Learning that light travels from a source. **Unit2:** That light travels in straight lines. **Unit 3:** Why shadows change in size. **Unit 4:** How do we see objects? **Unit 5:** Learn that light is reflected from surfaces 	Ask simple questions Observe closely, using simple equipment Perform simple tests Identify and classify Use observations and ideas to suggest answers to questions Gather and record data to help in answering questions Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables	 Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because light travels from them to our eyes Notice that light is reflected from surfaces Recognise that shadows are formed when the light from a light source is blocked by a solid object Find patterns in the way that the size of shadows change Understand that light appears to travel in straight lines Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eyes

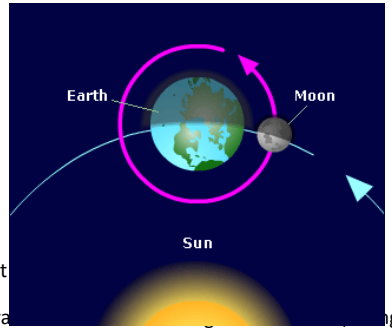
Colmore Junior Science Curriculum Year 3

Summer Term *Plants*

	KEY SKILLS	
CONTENT	To Work Scientifically	Biology – To Understand Plants
Unit 1: Identify the main parts of a flowering plant, and describe their functions **Unit 2:** Investigating the requirements needed for plants and seeds to live and grow **Unit 3:** Describe the life-cycle of a flowering plant **Unit 4:** Investigate the way in which water is transported within plants **Unit 5:** Identify the requirements needed by plants for life and growth **Unit 6:** Learning that some of the requirements for life and growth vary in different plants & how plants have adapted to live and grow in different environments **Unit 7:** Learning to design a garden display which meets the requirements of different types of plants	Ask simple questions Observe closely, using simple equipment Set up simple, practical enquiries and comparative and fair tests Identify and classify Use observations and ideas to suggest answers to questions Gather and record data to help in answering questions Make accurate measurements using standard units, using a range of equipment, e.g. thermometers and data loggers 	 Identify and name a variety of common plants, including garden plants, wild plants and trees and those classified as deciduous and evergreen Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers Observe and describe how seeds and bulbs grow into mature plants. Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy Identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers Investigate the way in which water is transported within plants

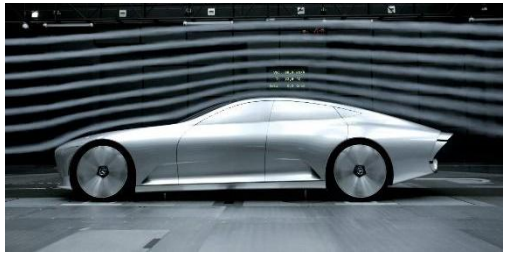
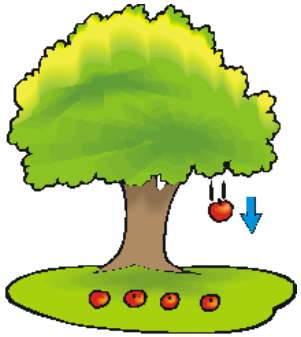
Colmore Junior Science Curriculum Year 4

Summer Term *Space*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics – To Understand the Earth's Movement in Space
Unit 2: Learning the shapes and relative sizes of the Earth, sun and moon & how the spin of the Earth causes day and night **Unit 3:** Learning how the movements of the Earth, sun and moon give us days, years and months **Unit 4:** Learning about the effects of gravity on objects in space & how to carry out a fair test **Unit 5:** Learning to describe the movement of the moon relative to the Earth **Unit 6:** Learning about the planets in our solar system 	 Ask relevant Make accura g a range of equipment, e.g. Thermometers and data loggers Set up simple, practical enquiries and comparative and fair tests Identify and classify Use observations and ideas to suggest answers to questions Gather, record, classify and present data in a variety of ways to help in answering questions	Observe the apparent movement of the Sun during the day Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies Describe the movement of the Earth relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the movement of the Earth, and other planets, relative to the Sun in the solar system Describe the movement of the Moon relative to the Earth Describe the Sun, Earth and Moon as approximately spherical bodies Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky

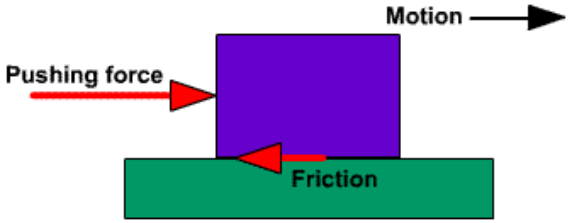
Colmore Junior Science Curriculum Year 4

Spring Term *Forces 1*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics - To Understand Movement, Forces and Magnets
Unit 1: Observe the force and effect of gravity **Unit 2:** Recognise the importance of Isaac Newton and his theory of gravity **Unit 3:** Identify the effects of air resistance **Unit 4:** Learning why some objects are designed to be aerodynamic **Unit 5:** Plan an investigation to test gravity and air resistance **Unit 6:** Learning to carry out an investigation to test gravity and air resistance **Unit 7:** Design and create an aerodynamic object	Ask relevant questions Make accurate measurements using standard units, using a range of equipment, e.g. Thermometers and data loggers Set up simple, practical enquiries and comparative and fair tests Identify and classify Use observations and ideas to suggest answers to questions Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests 	 Notice and describe how things move, using simple comparisons such as faster and slower Compare how different things move Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces

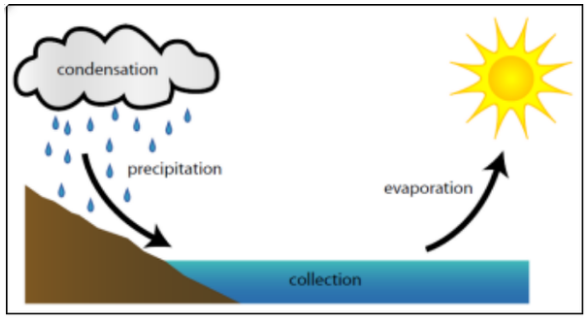
Colmore Junior Science Curriculum Year 4

Spring Term *Forces 2*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics - To Understand Movement, Forces and Magnets
 **Unit 1:** Identify the effects of friction **Unit 2 & 3:** Use fair testing to identify the effects of friction **Unit 4:** Learning to alter the effects of friction **Unit 5 & 6:** Identify the effects of water resistance **Unit 7:** Understand the effects of upthrust	Ask relevant questions Make accurate measurements using standard units, using a range of equipment, e.g. Thermometers and data loggers Set up simple, practical enquiries and comparative and fair tests Identify and classify Use observations and ideas to suggest answers to questions Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests 	 Notice and describe how things move, using simple comparisons such as faster and slower Compare how different things move Compare how things move on different surfaces Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces Describe, in terms of drag forces, why moving objects that are not driven tend to slow down

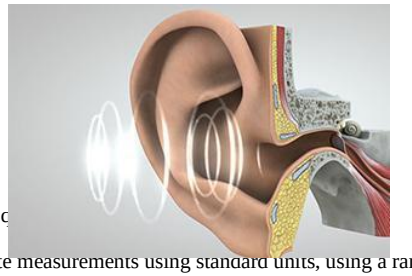
Colmore Junior Science Curriculum Year 4

Autumn Term *Materials – Hot and Cold*

	KEY SKILLS	
CONTENT	To Work Scientifically	Chemistry – To Investigate Materials
Unit 1: Compare and group materials together, according to whether they are solids, liquids or gases **Unit 2:** Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C) **Unit 3:** Observe that some materials change state when they are heated or cooled **Unit 4:** Learning what evaporation is and that temperature affects the rate of evaporation **Unit 5 & 6:** Learning about the part played by condensation and evaporation in the water cycle **Unit 7:** Compare everyday materials based on evidence from comparative and fair tests, including their thermal conductivity **Unit 8:** Changes of state can be reversible and change quickly from one state to another	Ask relevant questions Make accurate measurements using standard units, using a range of equipment, e.g. Thermometers and data loggers Set up simple, practical enquiries and comparative and fair tests Identify and classify Use observations and ideas to suggest answers to questions Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Identify differences, similarities or changes related to simple, scientific ideas and processes	Distinguish between an object and the material from which it is made Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock Describe the simple physical properties of a variety of everyday materials 

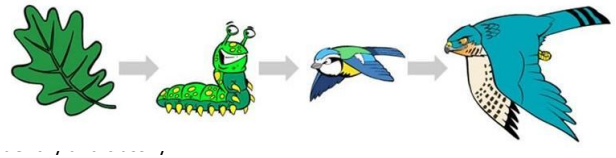
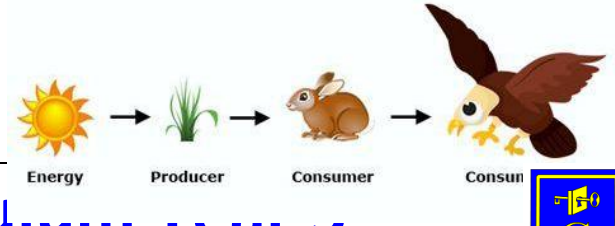
Colmore Junior Science Curriculum Year 4

Autumn Term *Sound*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics – To Investigate Sound and Hearing
Unit 1: Identify sounds around us and consider ways to classify them **Unit 2:** Learning how sounds are heard as they enter the ear **Unit 3:** Identify how sounds are made, associating some of them with something vibrating **Unit 4:** Find patterns between the pitch of a sound and features of the object that produced it **Unit 5:** Find patterns between the volume of a sound and the strength of the vibrations that produced it **Unit 6:** Find patterns between the pitch/volume of a sound and features of the object that produced it	 Ask relevant c Make accurate measurements using standard units, using a range of equipment, e.g. Thermometers and data loggers Set up simple, practical enquiries and comparative and fair tests Identify and classify Use observations and ideas to suggest answers to questions Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Gather, record, classify and present data in a variety of ways to help in answering questions	Observe and name a variety of sources of sound, noticing that we hear with our ears Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel through a medium to the ear Find patterns between the pitch of a sound and features of the object that produced it Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases 

Colmore Junior Science Curriculum Year 4

Autumn Term *Habitats*

	KEY SKILLS	
CONTENT	To Work Scientifically	Biology – To Understand Animals & Humans
Unit 1: Recognise that living things can be grouped in a variety of ways **Unit 2:** Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. **Unit 3:** Understand and create food chains. **Unit 4:** Recognise that environments can change and that this can sometimes pose dangers to living things. **Unit 5:** Plan an information campaign to educate the public about environmental dangers to living things. **Unit 6:** Produce materials for a campaign to educate the public about environmental dangers to living things.	 Identify differences, similarities or changes related to simple, scientific ideas and processes Ask relevant questions Use observations and ideas to suggest answers to questions Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Gather, record, classify and present data in a variety of ways to help in answering questions Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Explore and compare differences between things that are living, that are dead and that have never been alive. Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates; that are carnivores, herbivores and omnivores. Identify that most living things live in habitats to which they are suited; describe how different habitats provide for the basic needs of animals and plants and how they depend on each other. Identify and name a variety of plants and animals in their habitats, including micro-habitats. Describe how animals obtain their food from plants and other animals using the idea of a simple food chain, identifying producers, predators and prey; identify and name different sources of food. 

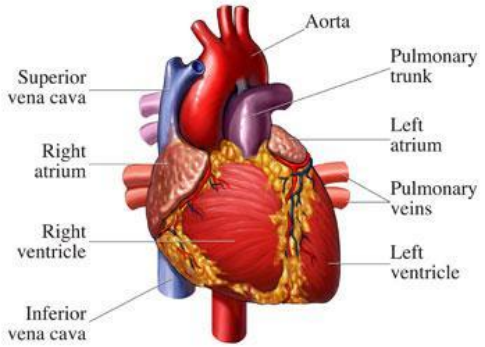
Colmore Junior Science Curriculum Year 4

Autumn Term *Electricity*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics - To Understand Electrical Circuits
Unit 1 & 2: Recording what children already know & revising knowledge from Year 3: Constructing electrical circuits, naming components; grouping materials based on electrical conductivity, recognising symbols, drawing circuit diagrams; identifying electrical appliances and their associated dangers. **Unit 3:** Learning to associate the brightness of a lamp with the cells used in a circuit. **Unit 4:** Learning to compare and give reasons for variations in how components function. **Unit 5:** Demonstrate and apply learning about circuits in order to design and construct a circuit for a practical purpose. **Unit 6:** Understand how electricity is generated and transmitted to the classroom, and discuss energy generation in the future. **Unit 7:** Understand how electricity is generated and transmitted to the classroom, and discuss energy generation in the future.	Identify and classify Make accurate measurements using standard units, using a range of equipment, e.g. Thermometers and data loggers Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests Identify differences, similarities or changes related to simple, scientific ideas and processes Plan enquiries, including recognising and controlling variables where necessary Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work Present findings in written form, displays and other presentations	Identify common appliances that run on electricity Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit Recognise some common conductors and insulators, and associate metals with being good conductors Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches Use recognised symbols when representing a simple circuit in a diagram 

Colmore Junior Science Curriculum Year 5

Spring Term *Human Body 1*

	KEY SKILLS	
CONTENT	To Work Scientifically	Biology – To Understand Animals and Humans
 **Unit 1 & 2:** Revise and establish previous knowledge **Unit 3:** Learning to identify the main parts of the circulatory system and explain the functions of the heart, blood vessels and blood. **Unit 4:** Identify the impact of exercise on the way the human body functions. **Unit 5**: Identify the main parts of the digestive system. **Unit 6:** Describe the way in which nutrients and water are transported in humans. **Unit 7:** Understand the similarities and differences between human and animal skeletons	Identify and classify Make accurate measurements using standard units, using a range of equipment, e.g. Thermometers and data loggers Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests Identify differences, similarities or changes related to simple, scientific ideas and processes Plan enquiries, including recognising and controlling variables where necessary Present findings in written form, displays and other presentations report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions	Describe the simple functions of the basic parts of the digestive system in humans Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions Describe the ways in which nutrients and water are transported within animals, including humans 

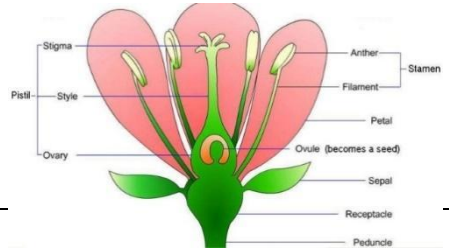
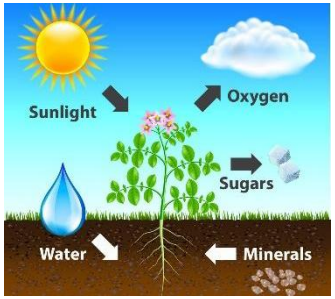
Colmore Junior Science Curriculum Year 5

Spring Term *Human Body 2*

	KEY SKILLS	
CONTENT	To Work Scientifically	Biology – To Understand Animals and Humans
Unit 1: Identify the impact of exercise on the way our bodies function. **Unit 2:** Identify the impact of diet on the way our bodies function. **Unit 3**: Identify the impact of drugs on the way our bodies function. **Unit 4:** Describe the changes as humans develop from gestation to childhood. **Unit 5:** Describe the changes as humans develop from childhood to adulthood. **Unit 6:** Describe the changes as humans develop from adulthood to old age. **Unit 7:** Design a lifestyle campaign.	Identify and classify Make accurate measurements using standard units, using a range of equipment, e.g. Thermometers and data loggers Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests Identify differences, similarities or changes related to simple, scientific ideas and processes Plan enquiries, including recognising and controlling variables where necessary Present findings in written form, displays and other presentations	Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions Describe the changes as humans develop to old age 

Colmore Junior Science Curriculum Year 5

Summer Term *Plants*

	KEY SKILLS	
CONTENT	To Work Scientifically	Biology – To Understand Plants
Unit 1: Recording what children already know - revising knowledge from Year 3 **Unit 2:** Understand what is required for life and growth of plants e.g. light, water, nutrients. Also, growing new plants from existing plants. **Unit 3:** Investigating transpiration. **Unit 4:** Learn about photosynthesis. **Unit 5:** Demonstrate and apply learning about the life cycle of flower plants. **Unit 6:** Explore both sexual and asexual reproduction in plants. **Unit 7:** Visit to Kings Heath Park. 	Identify and classify Make accurate measurements using standard units, using a range of equipment, e.g. Thermometers and data loggers Gather, record, classify and present data in a variety of ways to help in answering questions Record findings using simple scientific language, drawings, labelled diagrams, bar charts and tables Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests Identify differences, similarities or changes related to simple, scientific ideas and processes Plan enquiries, including recognising and controlling variables where necessary Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work Present findings in written form, displays and other presentations	 Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers Observe and describe how seeds and bulbs grow into mature plants Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy Identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant Revise the way in which water is transported within plants

		Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal

Colmore Junior Science Curriculum Year 5

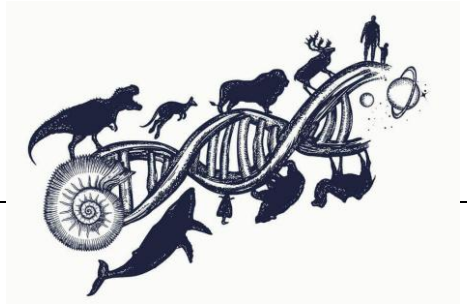
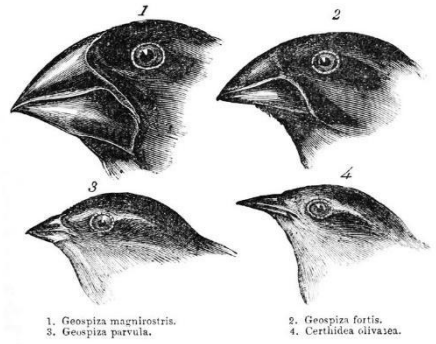
Autumn Term *Materials: Changes*

	KEY SKILLS	
CONTENT	To Work Scientifically	Chemistry – To Investigate Materials
Unit 1: Recording what children already know - revising knowledge from Year 4. **Unit 2:** Understand that materials are made from different substances. **Unit 3:** Understand the meaning of reversible and irreversible chemical reactions. **Unit 4:** Explain that some changes result in formation of new materials. **Unit 5:** Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. **Unit 6:** Describe how to recover a substance from a solution. Demonstrate that dissolving, mixing and changes of state are reversible changes. **Lesson 7:** Use knowledge of solids, liquids and gases to decide how mixtures might be	 Plan enquiries, including recognising and controlling variables where necessary. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Use results to draw simple conclusions and suggest improvements, new questions and predictions for setting up further tests. Identify differences, similarities or changes related to simple, scientific ideas and processes.	Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets. Understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning, oxidisation and the action of acid on bicarbonate of soda. 

separated, including through filtering, sieving and evaporating.	Use straightforward, scientific evidence to answer questions or to support their findings.	

Colmore Junior Science Curriculum Year 6

Autumn Term *Evolution 1*

	KEY SKILLS	
CONTENT	To Work Scientifically	Biology – To Understand Evolution and Inheritance
Unit 1: Recording what children already know. Learning to recognise that living things have changed over time; that fossils provide information about living things that inhabited the Earth millions of years ago. **Unit 2:** Learning to recognise that living things have changed over time; that fossils provide information about living things that inhabited the Earth millions of years ago. **Unit 3 & 4:** Learning to: identify how animals and plants are adapted to suit their environment in different ways; carry out our own research into prehistoric animals. **Unit 5:** Learning to recognise the importance of Darwin and his work on evolution. **Unit 6:** Learning to simply explain Darwin's theory of natural selection; identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution.	Ask relevant questions. Identify differences, similarities or changes related to simple, scientific ideas and processes. Use straightforward, scientific evidence to answer questions or to support their findings. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Present findings in written form, displays and other presentations. 	 Identify how humans resemble their parents in many features. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.

Unit 7: Learning to identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution.		Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

Colmore Junior Science Curriculum Year 6

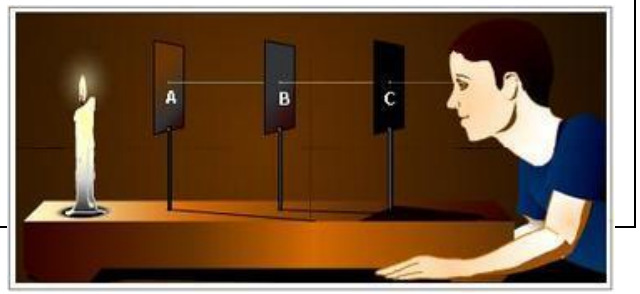
Autumn Term *Evolution 2*

	KEY SKILLS	
CONTENT	To Work Scientifically	Biology – To Understand Evolution and Inheritance
Unit 1: Identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution. Describe how small variations can lead to large evolutionary changes. **Unit 2:** Identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution. Plan a fair test into variation and adaptation. **Unit 3:** Identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution. Conduct and draw conclusions from a fair test into variation and adaptation. **Unit 3:** Identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution. Conduct and draw conclusions from a fair test into variation and adaptation. **Unit 4:** Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Explain the process by which traits are passed on from parents to offspring. **Unit 5 & 6:** Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Explain why offspring vary and are not identical to their parents. Recognise the positive and negative effects of selective breeding.	Plan enquiries, including recognising and controlling variables where necessary. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Present findings in written form, displays and other presentations.	Identify how humans resemble their parents in many features. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 

Unit 7: Identify how animals are adapted to suit their environment in different ways and that adaptation may lead to evolution. Evaluate the factors which contribute to the extinction of living things.	Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.	

Colmore Junior Science Curriculum Year 6

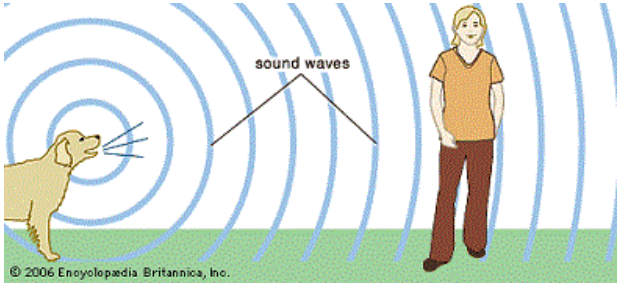
Spring Term *Revision: Light*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics – To Understand Light and Seeing
Unit 1: Explain the parts of the eye and their functions. **Unit 2:** Recognise that light appears to travel in straight lines. **Unit 3:** Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. **Unit 4:** Define and explain the concepts of reflection, refraction, convex and concave mirrors. **Unit 5:** Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	  Ask relevant questions. Use straightforward, scientific evidence to answer questions or to support their findings. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Present findings in written form, displays and other presentations.	Observe and name a variety of sources of light, including electric lights, flames and the Sun, explaining that we see things because light travels from them to our eyes Notice that light is reflected from surfaces Recognise that shadows are formed when the light from a light source is blocked by a solid object Understand that light appears to travel in straight lines Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them, and to predict the size of shadows when the light sources changes. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. 

	Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.	

Colmore Junior Science Curriculum Year 6

Spring Term *Revision: Sound*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics – To Investigate Sound and Hearing
Unit 1: Identify and classify sounds around us and consider ways to classify them; describe how they are heard as they enter the ear. **Unit 3:** Identify how sounds are made; describing the links between the pitch of a sound and features of the object that produced it **Unit 5:** Find patterns between the volume of a sound and the strength of the vibrations that produced it **Unit 7:** Find patterns between the pitch/volume of a sound and features of the object that produced it	Plan enquiries, including recognising and controlling variables where necessary. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Present findings in written form, displays and other presentations. Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.	 Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases.

Colmore Junior Science Curriculum Year 6

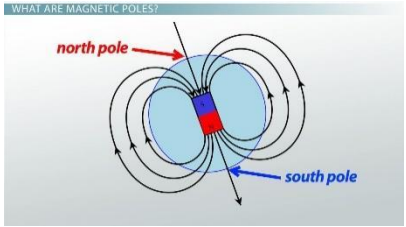
Spring Term *Revision: Materials*

	KEY SKILLS	
CONTENT	To Work Scientifically	Chemistry – To Investigate Materials
Unit 1: Compare and group materials together, according to whether they are solids, liquids or gases; understand that materials are made from different substances. **Unit 2:** Understand the differences between materials changing state when they are heated or cooled and reversible and irreversible chemical reactions. **Unit 4:** Explain that some changes result in formation of new materials. **Unit 5:** Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. **Unit 6:** Learning about the part played by condensation and evaporation in the water cycle	Plan enquiries, including recognising and controlling variables where necessary. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Present findings in written form, displays and other presentations. Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.	Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C), building on their teaching in mathematics. Compare and group together everyday materials based on evidence from comparative and fair tests, including their hardness, solubility, conductivity (electrical and thermal), and response to magnets. Understand how some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Demonstrate that dissolving, mixing and changes of state are reversible changes. Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning, oxidisation and the action of acid on bicarbonate of soda.



Colmore Junior Science Curriculum Year 6

Spring Term *Revision: Forces*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics – To Understand Movement, Forces and Magnets
Unit 1: Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. **Unit 2:** Identify the effects of air resistance, water resistance and friction, which act between moving surfaces. **Unit 3:** Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. **Unit 4:** Predict and describe the attraction and repulsion of magnets.	Plan enquiries, including recognising and controlling variables where necessary. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Present findings in written form, displays and other presentations. Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.	 Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing. Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. Identify the effect of drag forces, such as air resistance, water resistance and friction that act between moving surfaces. Describe, in terms of drag forces, why moving objects that are not driven tend to slow down. Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers and springs.

		Understand that some mechanisms including levers, pulleys and gears, allow a smaller force to have a greater effect.

Colmore Junior Science Curriculum Year 6

Summer Term *Earth and Beyond*

	KEY SKILLS	
CONTENT	To Work Scientifically	Physics – To Understand the Earth's Movement in Space
Unit 1: Understand and describe the solar system: how the Earth and other planets orbit the Sun. **Unit 2:** Understand how the moon orbits the Earth, and how gravity effects both bodies. **Unit 3:** Describe in detail the features of the Sun, Earth and Moon. **Unit 4:** Explain how the rotation of the Earth creates night and day, and the apparent movement of the Sun across the sky.	Plan enquiries, including recognising and controlling variables where necessary. Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work. Take measurements, using a range of scientific equipment, with increasing accuracy and precision. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models. Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. Present findings in written form, displays and other presentations. Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. Describe the Sun, Earth and Moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. 