Science
at
Castle Camps C. of E. (V.C.) Primary School

Life in all its fullness

Intent

At Castle Camps, it is our intention to develop a lifelong curiosity and interest in the sciences for all of our pupils, fostering a passion for scientific enquiry. We believe that a high quality science education provides the foundations for scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics while also integrating STEM practical activities. It is this knowledge that will equip the children with the ability to understand the uses and implications of science, today and into the future. Being in such close proximity to the Cambridge Science Park, University of Cambridge and the Babraham Institute, allows the children at Castle Camps many opportunities to experience science in the wider world first-hand, opening their minds to future career opportunities and helping to prepare them for life in an increasingly scientific and technological world. Children also learn about key individual scientists and inventors from a range of ethnicities, backgrounds and genders throughout their time in the school to allow them opportunities to identify with the people they study.

Through building up a body of key foundational knowledge and concepts, pupils are encouraged to recognise the power of rational explanation and to develop a sense of excitement and inquisitiveness about natural phenomena. Children understand that everything around them, everything that they experience on a daily basis and the world that we live in can all be related to science. They are encouraged to understand how science can be used to explain what is occurring, predict how things will behave and analyse causes. Our intention is that children should have the opportunity, wherever possible, to learn through varied systematic investigations drawing upon skills from all areas of the curriculum, enabling them to explore asking and answering scientific questions about the world around them whilst building their skills when working scientifically

Implementation

Teachers at Castle Camps create a positive attitude to science learning and reinforce an expectation that all children are capable of achieving high standards in science.

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of 'The National Curriculum programmes of study for Science 2014' and 'Understanding of the World' in the Early Years Foundation Stage. Science is taught every week throughout all classes with the aim of Key Stage 2 allowing for two hours of teaching time. In order for this to happen, science is cross-curricular and linked to class topics, where possible, while also being taught as discrete units and lessons where needed to ensure coverage. Science units are taught on a 3 year rolling programme and this, along with ensuring high standards of teaching and learning ensures implementation of a progressive science curriculum. Science teaching at Castle Camps involves adapting and extending the curriculum to match all pupils' needs. Teachers plan to suit their children's interests, current

events, their own teaching style, the use of any support staff or other adults and the resources available.

During science lessons, children are encouraged to reflect on previous learning and build on their prior knowledge. This allows them to link ideas together, while also enabling them to question and become inquisitive enquiry based learners. We aim to encourage open mindedness, self-assessment and perseverance, and develop the skills of investigation – including: observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.

Children use a range of resources throughout lessons to aid both their subject understanding, and their understanding of working scientifically. They are immersed in scientific vocabulary, which aids children's knowledge and understanding not only of the topic they are studying, but of the world around them.

Impact

The successful approach at Castle Camps results in a fun, engaging, high-quality science education that provides children with the foundations and knowledge for understanding the world. Children develop a rich vocabulary which enables then articulate their understanding of taught concepts, and have the ability to: question ideas and reflect on knowledge; work collaboratively and practically to investigate and experiment; and are able to explain the process they have taken and can reason scientifically.

Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them. Frequent, continuous and progressive learning outside the classroom is embedded throughout the science curriculum. Through various workshops, trips and interactions with experts, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children learn the possibilities for careers in science, as a result of our community links and connections with national agencies such as the Cambridge Science Park, Cambridge Science Centre and University of Cambridge, ensuring that children have access to positive role models within the field of science from the immediate and wider local community. From this exposure to a range of different scientists from various backgrounds, all children feel they are scientists and capable of achieving. Children at Castle Camps overwhelmingly enjoy science and this results in motivated learners with sound scientific understanding. Our annual Science Festival is extremely popular and promotes the value of Science across the whole community.

National Curriculum

Purpose of Study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

The national curriculum for science aims to ensure that all pupils:

• develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics

• develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them

• are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Scientific knowledge and conceptual understanding

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content. Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.

The nature, processes and methods of science

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. The notes and guidance give examples of how 'working scientifically' might be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry should include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils should seek answers to questions through collecting, analysing and presenting data. 'Working scientifically' will be developed further at key stages 3 and 4, once pupils have built up sufficient understanding of science to engage meaningfully in more sophisticated discussion of experimental design and control.

Spoken language

The national curriculum for science reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their scientific vocabulary and articulating scientific concepts clearly and precisely. They must be assisted in making their thinking clear, both to themselves and others, and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

Key Stage 1 Working Scientifically

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions.

Year 1

Plants

Pupils should be taught to:

- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees
- identify and describe the basic structure of a variety of common flowering plants, including trees.

Animals, Including Humans

Pupils should be taught to:

- identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals
- identify and name a variety of common animals that are carnivores, herbivores and omnivores

Science – key stages 1 and 2

Statutory requirements

- describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)
- identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.

Everyday Materials

Pupils should be taught to:

- 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.

Seasonal Changes

Pupils should be taught to:

- observe changes across the four seasons

• observe and describe weather associated with the seasons and how day length varies.

Year 2

Living Things and Their Habitats

Pupils should be taught to:

• explore and compare the differences between things that are living, dead, and things that have never been alive

• identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other

• identify and name a variety of plants and animals in their habitats, including microhabitats

• describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.

Plants

Pupils should be taught to:

• 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.

Animals, Including Humans

Pupils should be taught to:

• notice that animals, including humans, have offspring which grow into adults • find out about 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.

Uses of Everyday Materials

Pupils should be taught to:

• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses

• find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.

Lower Key Stage 2

Working Scientifically

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

• 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.

Year 3

Plants

Pupils should be taught to:

• identify and describe the functions of different parts of flowering plants: roots, stem/trunk, 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

• investigate the way in which water is transported within plants

• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.

Animals, Including Humans

Pupils should be taught to:

• identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat

• identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Rocks

Pupils should be taught to:

• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties

• describe in simple terms how fossils are formed when things that have lived are trapped within rock

• recognise that soils are made from rocks and organic matter.

Light

Pupils should be taught to:

• recognise that they need light in order to see things and that dark is the absence of light

• notice that light is reflected from surfaces

• recognise that light from the sun can be dangerous and that there are ways to protect their eyes

• recognise that shadows are formed when the light from a light source is blocked by an opaque object

• find patterns in the way that the size of shadows change.

Forces and Magnets

Pupils should be taught to:

• compare how things move on different surfaces

• 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.

Year 4

Living Things and Their Habitats

Pupils should be taught to:

• recognise that living things can be grouped in a variety of ways

• explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment

• recognise that environments can change and that this can sometimes pose dangers to living things.

Animals, Including Humans

Pupils should be taught to:

• describe the simple functions of the basic parts of the digestive system in humans

• identify the different types of teeth in humans and their simple functions

• construct and interpret a variety of food chains, identifying producers, predators and prey.

States of Matter

Pupils should be taught to:

• compare and group materials together, according to whether they are solids, liquids or gases

• observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)

• identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.

Sound

Pupils should be taught to:

• 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.

Electricity

Pupils should be taught to:

• 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.

Upper Key Stage Two

Working Scientifically

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

• 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.

Year 5

Living Things and Their Habitats

Pupils should be taught to:

• describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird

• describe the life process of reproduction in some plants and animals.

Animals, Including Humans

Pupils should be taught to:

• describe the changes as humans develop to old age.

Properties and Changes of Materials

Pupils should be taught to:

• compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets

• know that 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

• give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic

• 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 and the action of acid on bicarbonate of soda.

Earth and Space

Pupils should be taught to:

• 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.

Forces

Pupils should be taught to:

• explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object

• identify the effects of air resistance, water resistance and friction, that act between moving surfaces

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

Year 6

Living Things and Their Habitats

Pupils should be taught to:

• describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals

• give reasons for classifying plants and animals based on specific characteristics.

Animals, Including Humans

Pupils should be taught to:

• identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood

• recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function

• describe the ways in which nutrients and water are transported within animals, including humans.

Evolution and Inheritance

Pupils should be taught to:

• 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.

Light

Pupils should be taught to:

- recognise 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 eye
- 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 the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.

Electricity

Pupils should be taught to:

- 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.

Whole School Subject Overview (2 year plan) Year A 2023/2024

	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Hedgehog Class	Ourselves and Autumn ***Human Body*** ***Keeping Healthy*** ***Seasonal Changes***	Colour and Celebration ***Light and Dark*** Winter Wonderland ***Changing materials - ice and water.***	Where We Live including People Who Help Us. ***Animals, Inc. Humans***	Favourite Authors ***Living Things & Their Habitats***	Farm Animals and Growing ***Life Cycles Animals Plants***	Wonderful Water ***Floating & Sinking***
Squirrel Class	Animals, Including Humans (Y1) ***How many different types of animals are there?***	Living things and their habitats (Y2) ***How do animals choose their habitat?***	Seasonal Changes (Y1) ***How do the seasons change?***	Uses of Everyday Materials (Y2) ***What is the best material for a …?***	Plants (Y1) ***How do we keep plants healthy?***	Environment (Y2) **Why is the environment important?**
Rabbit Class	Everyday Materials (Y2) ***Why isn't a … made of …?***	Rocks (Y3) ***What is a rock?***	Forces and Magnets (Y3) ***How do magnets work?***	Animals, including Humans (Y3) ***What do humans and animals need to survive?***	Plants (Y2) ***Why are plants important?***	Light ***Why can't we see in the dark?***
Badger Class	Sound ***How do we hear?***	Electricity ***What is electricity?***	Animals, including Humans ***How does our digestive system work?***	Animals, including Humans ***How does our digestive system work?***	Living things and their habitats ***How and why are animals grouped?***	Scientist Study: David Attenborough ***Who is David Attenborough?***
Deer Class	Animals, (including Humans) ***How do humans develop?***	Animals, including humans: ***How does our circulatory system keep us healthy?)***	Properties and changes of Materials ***What are the properties of materials?***	Properties and changes of Materials ***What are the properties of materials?*** Science Week Focus - Light: ***How do we see?***	Living things and their habitats: **How are animals and plants classified?**	Evolution and inheritance linked to Darwin ***What is evolution and inheritance?***

Whole School Subject Overview (2 year plan) Year B 2024/2025

	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Hedgehog Class	Ourselves and Starting School. ***Human Body*** ***Keeping Healthy*** Autumn Senses ***The Five Senses*** ***Seasonal Changes***	Festivals and Fireworks ***Light and Dark*** Light and Dark ***Space***	Traditional Tales ***Materials and their Properties***	Explorers including Jungle and Dinosaurs ***Living Things & Their Habitats***	Mini Beasts and Growing. ***Life Cycles Insects Plants*** Recycling ***Materials and their Properties***	Holidays and Transport. ***Floating & Sinking*** ***Forces***
Squirrel Class	Seasonal Changes (Y1) ***How do the seasons change?***	Everyday Materials (Y1) ***What is the best material for a …?***	Living Things and their Habitats (Y2) ***How do animals choose their habitat?***	Animals, including Humans (Y2) ***How many different types of animals are there?***	Plants (Y2) ***How do we keep plants healthy?***	Scientists and Inventors (Y1)
Rabbit Class	Living Things and their Habitats	Plants	Animals Including Humans	Rocks	Plants	Forces and Magnets
Badger Class	Living things and their habitats ***What are life cycles?***	Scientist Study ***Who is Maggie Aderin Pocock?***	Earth and Space ***Where in the universe are we?***	Earth and Space: ***Where in the universe are we?***	States of Matter ***How do materials change?***	Animals (including humans) ***How does our digestive system works?***
Deer Class	Electricity ***What is electricity?***	Light ***What is light and why do we need it to see?***	Evolution and inheritance (Mary Anning) ***What is evolution and inheritance? Who is Mary Anning?***	Evolution and inheritance (Mary Anning) ***What is evolution and inheritance? Who is Mary Anning?***	Forces ***What are forces?***	Earth, Space and Forces Scientist Study ***Who was Stephen Hawkins?***

Science Progression – A Year (2021-22)

Hedgehogs	Squirrels		Rabbits		Badgers		Deer	
EYFS 3-4 R ELG	Y1	Y2	Y2	Y3	Y4	Y5	Y5	Y6
Working Scientifically Explore how things work. Talk about what they see, using a wide range of vocabulary. Explore and talk about different forces they can feel. Talk about the changes between materials and changes they notice. Describe what they see, hear and feel whilst outside. **Animals Including Humans** Use all their senses in hands-on exploration of natural materials. Understand the key features of a life cycle of a plant and an animal. Explore the natural world around them, making observations and drawing pictures of animals and plants. **Living Things and Their Habitats** Plant seeds and care for growing plants. Begin to understand the need to respect and care for the natural environment and all living things.	**Autumn 1** **Animals (including humans)** **Big Question: How many different types of animals are there?** Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. ***Key Vocabulary-*** ***Y1: Omnivore Carnivore Herbivore Senses Taste Smell Vision Touch Hearing Fish Amphibian Reptile Bird Mammal Pet*** ***Y2: Offspring Grow Adults Nutrition Reproduce Survival Exercise Hygiene Offspring Spawn-TadpoleFrog Egg-ChickChicken Egg-CaterpillarPupa-Butterfly Baby-ToddlerChild-TeenagerAdult*** **Autumn 2** **Living Things and Their Habitats**		**Autumn** **Everyday Materials** **Big Question: Why isn't a … made of …?** 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. ***Key Vocabulary-*** ***Y2 Squash Bend Twist Stretch*** ***Y3 Insulator Conductor*** **Autumn 2** **Rocks** **Big Question: What is a rock?** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter. ***Key Vocabulary-*** ***Y3 Appearance Physical Properties Fossils Sedimentary Rock Soils Organic Matter Grains Crystals***		**Autumn 1** **Sound** **Big Question: How do we hear?** 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. ***Key Vocabulary-*** *Vibration, Pitch, Volume, Cochlea, Ear Drum, Ear Canal and Pinna.* **Autumn 2** **Electricity** **Big Question: What is electricity?** 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		**Autumn 1** **Animals Including Humans** **Big Question: How do humans develop?** Describe the changes as humans develop to old age ***Key Vocabulary- Human Development, Puberty, Gestation, Mass, Offspring, Grow, Reproduce, Survival, Exercise, Hygiene Offspring, Spawn-TadpoleFrog, Egg-ChickChicken, Egg-CaterpillarPupa-Butterfly, Baby-ToddlerChild-TeenagerAdult*** **Autumn 2** **Big Question: How does our circulatory system keep us healthy?** **Animals (Including 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 impact of diet, exercise, drugs and lifestyle on the way their bodies function Describe the ways in which nutrients and water are transported within animals, including humans. ***Key Vocabulary- Internal Organs, Heart, Lungs, Liver, Kidney, Brain, Digest, Circulation System, Blood Vessel, Drugs Alcohol, Substances, Transport***	

Explore the natural world around them, making observations and drawing pictures of animals and plants. **Materials** Explore collections of materials with similar and/ or different properties. Explore and talk about different forces they can feel. Talk about the changes between materials and changes they notice. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Seasonal Changes** Describe what they see, hear and feel whilst outside. Understand the effect of the changing seasons on the natural world around them. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Plants** Plant seeds and care for growing plants.	**Big Question: *How do animals choose their habitat?*** Explore and compare the differences between things that are living, dead, and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other ***Key Vocabulary- Living Alive Dead Habitat Micro-habitat Food Chain Healthy Shelter Ocean Rainforest Woodland Seashore*** Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **<u>Spring 1</u>** **<u>Everyday Materials</u>** **Big Question:** What is the best material for a … Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching ***Key Vocabulary-***	**<u>Spring</u>** **Forces and Magnets** **Big Question: How do magnets work?** Compare how things move on different surfaces 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. ***Key Vocabulary-*** ***Y3 Magnet Attract Repel Compass North South Magnetic Poles*** **Animals (including humans)** **Big Question: What do humans and animals need to survive?** Notice that animals, including humans, have offspring which grow into adults	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. ***Key Vocabulary:*** Appliance, Cell, Insulator, Conductor, Switch, Open Circuit and Closed Circuit. **<u>Spring 1 and 2</u>** **Animals (including humans)** **Big Question: How does our digestive system work?** Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey. Opportunities for extended writing linked to the topic. ***Key Vocabulary-****Digestive System, Incisors,Canines, Molars, Pro-molars, Oesophagus, Stomach, Acid, Enzymes, Small Intestine, Large Intestine, Food Chain, Producer, Prey and Predator.* **<u>Summer 1</u>** **<u>Living Things and their Habitats</u>** **Big Question: Why and how are animals grouped?** Recognise that living things can be grouped in a variety of ways	**<u>Spring</u>** **Properties and Changes of Materials** **Big Question: What are the properties of materials?** Know that 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 Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic 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 and the action of acid on bicarbonate of soda ***Key Vocabulary- Properties, Hardness, Solubility, Transparency, Conductive, Dissolve, Sieving, Solution, Separate, Filtering, Reversible, Irreversible, Chemical, Evaporating*** **Light (Science Week Focus)** **Big Question : How do we see?** ***Key Vocabulary- Light Source, Filter, Periscope*** **<u>Summer 1</u>** **Living things and their habitats** **Big Question: How are animals and plants classified?**

Understand the key features of a life cycle of a plant and an animal. **Earth and Space** Explore and talk about different forces they can feel. **The Environment** Use all their senses in hands-on exploration of natural materials. Begin to understand the need to respect and care for the natural environment and all living things. Describe what they see, hear and feel whilst outside. Recognise some environments that are different from the one in which they live. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. **Electricity** Explore how things work.	***Y1: Fabric Stretchy/Stiff Shiny/Dull Waterproof/Not Waterproof Absorbent/Not Absorbent Float/Sink*** ***Y2: Squash Bend Twist Stretch*** **Spring 2** **Seasonal Changes** **Big Question: how do the seasons change?** Observe changes across the four seasons and describe weather associated with the seasons and how day length varies ***Key Vocabulary- Season Summer Winter Spring Autumn Hail Sleet Fog*** **Summer 1** **Plants (Y1)** **Big Question: *How do we keep plants healthy?*** Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and describe the basic structure of a variety of common flowering plants, including trees. ***Key Vocabulary:*** ***Y1: Wild Garden Deciduous Evergreen Root Bud Bulb Vegetables Fruit Blossom Petals Root Stem Trunk Branches Seed*** ***Y2: Temperature Healthy Germination Reproduction*** **Summer 2** **The Environment (Y2)** **Big Question: why is the environment important?**	Find out about 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 **Animals (including humans)** **Big Question (as above)** Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. ***Key Vocabulary:*** ***Y2 - Offspring Grow Adults Nutrition Reproduce Survival Exercise Hygiene Offspring Spawn-TadpoleFrog Egg-ChickChicken Egg-CaterpillarPupa-Butterfly Baby-ToddlerChild-TeenagerAdult*** ***Y3 - Nutrition Vitamins Minerals Fat Protein Carbohydrates Fibre Water Skeletons – support, protection Skull – brain Ribs – heart, lungs Movement Joint Muscles*** **Summer 1** **Plants** **Big Question - Why are plants important?** identify and describe the functions of different parts of flowering plants: roots, stem/trunk, 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	Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment Recognise that environments can change and that this can sometimes pose dangers to living things. ***Key Vocabulary-****Environment, Flowering, Non-Flowering Plants, Animals, Vertebrate, Invertebrate, Environment, Plants and Human Impact.* **Summer 2** **Big Question: Who is David Attenborough?** David Attenborough Scientist Study with links to living things and habitats ***Key vocabulary:*** Environment, Flowering, Non-Flowering, Plants, Animals, Vertebrate, Invertebrate, Environment, Plants and Human Impact..	describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals Give reasons for classifying plants and animals based on specific characteristics ***Key Vocabulary- Micro-organisms,Classification, Classify*** **Summer 2** **Evolution and inheritance linked to Darwin** **Big Question: What is evolution and inheritance?** 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. ***Key vocabulary : Evolution, Adaptions, Darwin, Fossils, Inhabited***

	Children are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future ***Key Vocabulary:*** ***Similarities Differences Environment Pollution***	from plant to plant investigate the way in which water is transported within plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. ***Key Vocabulary:*** ***Y2 - Temperature Healthy Germination Reproduction*** ***Y3 -Structure Function Nutrition Support Reproduction Crop Rotation Fertiliser Life Cycle Pollination Seed Formation Seed Dispersal*** **<u>Summer 2</u>** **Light** **Big Question: Why can't we see in the dark?** Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes Recognise that shadows are formed when the light from a light source is blocked by an opaque object Find patterns in the way that the size of shadows change. ***Key Vocabulary:*** ***Y3 - Light Dark Reflect Surface Natural Artificial Shadow***		

Science Progression – B Year (2022-2023)

Hedgehogs	Squirrels		Rabbits			Badgers		Deer	
EYFS 3-4 R ELG	Y1	Y2	Y2		Y3	Y4	Y5	Y5	Y6
Working Scientifically Explore how things work. Talk about what they see, using a wide range of vocabulary. Explore and talk about different forces they can feel. Talk about the changes between materials and changes they notice. Describe what they see, hear and feel whilst outside. **Animals Including Humans** Use all their senses in hands-on exploration of natural materials. Understand the key features of a life cycle of a plant and an animal. Explore the natural world around them, making observations and drawing pictures of animals and plants. **Living Things and Their Habitats**	**Autumn 1** **Seasonal Changes** Observe changes across the four seasons and describe weather associated with the seasons and how day length varies ***Key Vocabulary- Season Summer Winter Spring Autumn Hail Sleet Fog*** **Autumn 2** **Everyday Materials and their Uses** ***Big Question: What is the best material for a …*** 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 ***Key Vocabulary-*** ***Y1: Fabric Stretchy/Stiff Shiny/Dull Waterproof/Not Waterproof Absorbent/Not Absorbent Float/Sink*** ***Y2: Squash Bend Twist Stretch*** **Spring 1** **Living Things and Their Habitats**		**Autumn 1** **Living Things and Their Habitats** **Big Question: How do animals choose their habitat?** Explore and compare the differences between things that are living, dead, and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. ***Key Vocabulary:*** ***Y2 - Living Alive Dead Habitat Micro-habitat Food Chain Healthy Shelter Ocean Rainforest Woodland Seashore*** **Autumn 2** **Light** **Big Question: Why do our shadows change?** Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes Recognise that shadows are formed when the light from a light source is blocked by an opaque object Find patterns in the way that the size of shadows change.		**Autumn 1** **Living Things and their Habitats** **Big question: What are life cycles?** Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird Describe the life process of reproduction in some plants and animals. ***Key vocabulary:*** Environment, Flowering, Non-Flowering, Plants, Animals, Vertebrate, Invertebrate, Environment, Plants and Human Impact. **Autumn 2** **Study of a Scientist linked to Earth and Space.** **Science Study linked to unit.** **Big question: Who is Maggie Aderin-Pocock?** Pupils might work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health. **Key vocabulary:** Solar System, Spherical, Rotation, Orbit, Moon, Sun, NASA, Black Hole, Mercury, Venus,		**Autumn 1** **Electricity** **Big question : What is electricity?** 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. ***Key vocabulary : Buzzer, Voltage, Circuit, Motor, Symbols*** **Autumn 2** **Light** **Big question : What is light and why do we need it to see?** Recognise 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 eye Explain that we see things because light travels from light sources to our eyes or

Plant seeds and care for growing plants. Begin to understand the need to respect and care for the natural environment and all living things. Explore the natural world around them, making observations and drawing pictures of animals and plants. **Materials** Explore collections of materials with similar and/ or different properties. Explore and talk about different forces they can feel. Talk about the changes between materials and changes they notice. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Seasonal Changes**	**Big Question: How do animals choose their habitat?** Explore and compare the differences between things that are living, dead, and things that have never been alive Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other Identify and name a variety of plants and animals in their habitats, including microhabitats Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. ***Key Vocabulary-*** ***Y1: Fabric Stretchy/Stiff Shiny/Dull Waterproof/Not Waterproof Absorbent/Not Absorbent Float/Sink*** ***Y2: Squash Bend Twist Stretch*** **<u>Spring 2</u>** **Big Question: How many different types of animals are there?** **Animals (including humans)** Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish,	***Key Vocabulary:*** ***Y3- Light Dark Reflect Surface Natural Artificial Shadow*** **<u>Spring 1</u>** Animals Including Humans **Big Question: What do humans and animals need to survive?** Notice that animals, including humans, have offspring which grow into adults Find out about 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. ***Key Vocabulary:*** ***Y2 - Offspring Grow Adults Nutrition Reproduce Survival Exercise Hygiene Offspring Spawn-TadpoleFrog Egg-ChickChicken Egg-CaterpillarPupa-Butterfly Baby-ToddlerChild-TeenagerAdult*** ***Y3 - Nutrition Vitamins Minerals Fat Protein Carbohydrates Fibre Water Skeletons – support, protection Skull – brain Ribs – heart, lungs Movement Joint Muscles*** **<u>Spring 2</u>** Rocks **Big Question: What is a rock?** Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties Describe in simple terms how fossils are formed when things that have lived are trapped within rock Recognise that soils are made from rocks and organic matter. ***Key Vocabulary:*** ***Y3 - Appearance Physical Properties Fossils Sedimentary Rock Soils Organic Matter Grains Crystals***	Earth, Mars, Jupiter, Saturn, Uranus and Neptune. **<u>Spring 1</u>** **Earth and Space.** **<u>Big question: Where in the universe are we?</u>** Y5: Pupils should be taught to: 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. **Key vocabulary:** Solar System, Spherical, Rotation, Orbit, Moon, Sun, NASA, Black Hole, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. **<u>Summer 1</u>** **States of Matter** **Big question: How do materials change?**	from light sources to objects and then to our eyes Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. **Key vocabulary : Light Source, Filter, Periscope, Straight lines, Refraction, Reflection** **<u>Spring 1 and 2</u>** **Evolution and inheritance (Mary Anning - scientist study)** **Big Question: What is evolution and inheritance? Who is Mary Anning?** 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 ***Key vocabulary : Evolution, Adaptions, Darwin, Fossils, Inhabited*** **<u>Summer 1</u>** **Forces** **Big question : What are forces?** Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object

Describe what they see, hear and feel whilst outside. Understand the effect of the changing seasons on the natural world around them. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter **Plants** Plant seeds and care for growing plants. Understand the key features of a life cycle of a plant and an animal. **Earth and Space** Explore and talk about different forces they can feel. **The Environment** Use all their senses in hands-on exploration of natural materials. Begin to understand the need to respect and care for the natural	amphibians, reptiles, birds and mammals, including pets). Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense Notice that animals, including humans, have offspring which grow into adults Find out about 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.. ***Key Vocabulary*** **Omnivore Carnivore Herbivore Senses Taste Smell Vision Touch Hearing Fish Amphibian Reptile Bird Mammal Pet** **Summer 1** **Plants** **Big Question: *How do we keep plants healthy?*** 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 ***Key Vocabulary:*** Y1: Wild Garden Deciduous Evergreen Root Bud Bulb Vegetables Fruit Blossom Petals Root Stem Trunk Branches Seed Y2: Temperature Healthy Germination Reproduction **Summer 2** **Scientists and Inventors (Y2)**	**Summer** **Plants** **Big Question: Why are plants important?** 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. ***Key Vocabulary:*** ***Y2 - Temperature Healthy Germination Reproduction*** ***Y3 - Structure Function Nutrition Support Reproduction Crop Rotation Fertiliser Life Cycle Pollination Seed Formation Seed Dispersal*** **Forces and Magnets** **Big Question: How do magnets work?** Compare how things move on different surfaces 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 ***Key Vocabulary:*** ***Y3- Magnet Attract Repel Compass North South Magnetic Poles***	Compare and group materials together, according to whether they are solids, liquids or gases Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. **Key vocabulary:** Water Cycle, Water Vapour, Evaporate, Condense, Container, Melt, Freeze, Changing State, Heated, Cooled, Degrees Celsius and Thermometer. **Summer 2** **Animals (including Humans)** **Big Question: How does our digestive system work?** Describe the simple functions of the basic parts of the digestive system in humans Identify the different types of teeth in humans and their simple functions Construct and interpret a variety of food chains, identifying producers, predators and prey. Opportunities for extended writing linked to the topic. ***Key Vocabulary-****Digestive System, Incisors,Canines, Molars, Pro-molars, Oesophagus, Stomach, Acid, Enzymes,*	Identify the effects of air resistance, water resistance and friction, that act between moving surfaces Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. ***Key vocabulary : Gravity, Friction, Air Resistance, Water Resistance, Drag, Lever, Pulley, Gears*** **Summer 2** **Earth, Space and Forces Scientist Study** **Big question : Who was Stephen Hawkins?**

environment and all living things. Describe what they see, hear and feel whilst outside. Recognise some environments that are different from the one in which they live. Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. **Electricity** Explore how things work.	Children are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future ***Key Vocabulary:*** Y1: Question Answer Describe Sort Y2: Classify Observe Equipment Identify Group Diagram Chart Map Data Compare Biology Chemistry Physics		*Small Intestine, Large Intestine, Food Chain, Producer, Prey and Predator.*	

SEND within Science

Children with SEND at Castle Camps are provided a broad curriculum both within and across all subjects unless indicated otherwise on EHCP.

Some of the issues facing pupils with SEND include:

- Cognition and Learning
- Communication and Interaction
- Physical and Sensory
- Social, Emotional and Behavioural

Teaching, Learning and Assessment:

- Teachers and TAs are aware of pupils who have EHCPs and APDRs, and, using these, plan adaptations and opportunities for them to meet relevant targets within the subject.
- Subject leaders and class teachers regularly meet with the SENDCo to discuss individual pupils, and adaptations that could be made to allow for greater access to a broad curriculum.
- Learning objectives and independent activities are adapted so all pupils can access the learning at their level.
- Clear and fixed routines and structure to lessons support access to learning, and these are matched to particular children's needs.
- Teachers and TAs establish relationships built on trust and understanding with the pupils to enable needs to be met effectively, and the children to see themselves as learners.
- When assessing pupils, every opportunity is carefully planned to allow children with SEND and/or disabilities to demonstrate what they know and are able to do, using alternative means where necessary, as well as knowing what they are learning or practising.

Adult Support:

- Teachers and TAs support named children in activities to promote participation with other pupils where possible.
- When appropriate, children are encouraged to work independently or alongside their peers.
- Both teachers and TAs adapt the lesson as they see fit for individuals. This may be in terms of adapting questions asked of specific pupils, giving more thinking time, using a word mat to refer back to pre-teaching, scaffolded or form of the activity, the way the learning is recorded, changing or adding to the resources, selecting peers for children to work with and any other adaptations to support children in making steps in learning to the main objective for the class lesson.

Resources:

- Visual cues and prompts (including writing frames, word mats, task planners, procedural steps and 'Now/Then' boards)
- Resources are adapted to suit the needs of the pupil – resources chosen for colour/size/shape etc and these are accessed independently by children where possible.
- Health and Safety when using resources is considered for all pupils, and alternative resources are provided when necessary. Where children have a physical disability this should be considered in line with their EHCP and/or APDR.
- Resources to support children to be independent with recording their learning/writing are used to allow greatest access to the curriculum (including, but not limited to chunky pencils, pencil grips, scribes, word processing).

Additional Learning Opportunities:

- Pre-teaching is used with children before specific lessons to prepare them for the learning objective or vocabulary.
- The need for all learners to acquire new vocabulary is reinforced; teachers model occasions when they also need to check the meaning of words or factual information.
- Children may be introduced to certain resources in advance of the lesson, particularly a practical lesson, to familiarise them with the equipment and how to use it.
- All adaptations and scaffolding are in place to support children's independent learning.

SMSC in Science

Spiritual	**Moral**
Using evidence to make sense of the world. Looking for meaning and purpose in natural and physical phenomena. Wonder about what is special about life. An awareness of the scale of living things from the small micro-organism to the largest. The interdependence of all living things and materials of the Earth. Emotional drive to know more and to wonder about the world. Wonder at the vastness of space and the beauty of natural objects. Making new discoveries to increase sense of awe and wonder at the complexities and elegance of the natural world	Pupils to become increasingly curious. Development of open mindedness to the suggestions of others. Scientific developments may give rise to moral dilemmas. Ethics behind certain medical treatments. The environmental impact of the science industry.
Social	**Cultural**
Group practical work. Team working skills and to taking responsibility. Taking responsibility for their own and other people's safety. Understanding that science has a major effect on the quality of our lives. Consider the benefits of scientific developments and the social responsibility involved. Take the views and opinions of others into account. Take turns and instructions from others	Scientific discoveries as a part of our culture. Scientific discoveries of other cultures. Scientific discoveries by a wide range of men and women in many different cultures. Explore and celebrate research and developments that take place in many different cultures, both past and present. Explore how scientific discoveries have shaped the beliefs, cultures and politics of the modern world.