

## WHOLE SCHOOL SUBJECT OVERVIEW

**SUBJECT:** Science

**SUBJECT LEADER:** Charlotte Clementson

YEAR GROUP				
EYFS	Please refer to the EYFS overview on the curriculum page for details			
YEAR GROUP	CURRICULUM DELIVERY METHOD (taught weekly throughout the year). Taught as a topic in one particular term. Blocked into a theme day, week. Covered through termly T.A.S.C days. Taught weekly by specialist etc.)	ACTIVITIES PLANNED AND THEMATIC/TOPIC LINKS (What activities will be taught? What cross-curricular/ topic context will this be in?)	NC CONTENT AND SKILLS COVERED  (Which key skills and content from NC is covered)	ENRICHMENT/EXTRA-CURRICULAR OPPORTUNITIES
1	Weekly science lessons. Science elements also integrated into creative, enquiry based creative curriculum. Two year rolling program differentiated throughout the key stage.	AUTUMN: Year A: Seasons How are the seasons different?	<b>Seasonal changes</b> <ul style="list-style-type: none"> <li>- observe changes across the 4 seasons</li> <li>- observe and describe weather associated with the seasons and how day length varies</li> </ul>	Science and technology week. Health and Sports Week. Educational Visits (e.g. Stockbridge food technology centre, sea-side, Wetlands, walk in locality) Cookery and nutrition lessons
SPRING: Year A: What can we find out about buildings?		<b>Everyday Materials</b> <ul style="list-style-type: none"> <li>- distinguish between an object and the material from which it is made</li> <li>- identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>- describe the simple physical properties of a variety of everyday materials</li> <li>- compare and group together a variety of everyday materials on the basis of their simple physical properties</li> </ul>		
SUMMER: Year A How do plants grow? Plants and lifecycles		<b>Plants</b> <ul style="list-style-type: none"> <li>- identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>- identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>		

			<ul style="list-style-type: none"> <li>- -observe and describe how seeds and bulbs grow into mature plants</li> <li>- -find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>	
2	Weekly science lessons. Science elements also integrated into creative, enquiry based creative curriculum. Two year rolling program differentiated throughout the key stage.	AUTUMN: Year B: Materials? Let's investigate everyday materials?	<b>Uses of Everyday Materials</b> <ul style="list-style-type: none"> <li>- -identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>- -find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	Science and technology week.  Health and Sports Week.  Educational Visits (e.g. Stockbridge food technology centre, sea-side, Wetlands, walk in locality)
		SPRING: Year B: What can we find out about animals including humans?	<b>Animals Including Humans</b> <ul style="list-style-type: none"> <li>- -identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals</li> <li>- -identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> <li>- -describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</li> <li>- -identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> <li>- -notice that animals, including humans, have offspring which grow into adults</li> <li>- -find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>- -describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul>	Cookery and nutrition lessons
		SUMMER: Year B: What lives there? Animals and habitats	<b>Animals in their habitats</b> <ul style="list-style-type: none"> <li>- -explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>- -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</li> <li>- -identify and name a variety of plants and animals in their habitats, including micro-habitats</li> </ul> <b>Animals Including Humans</b> <ul style="list-style-type: none"> <li>- -describe how animals obtain their food from plants and other animals, using the idea of a</li> <li>- -notice that animals, including humans, have offspring which grow into adults</li> <li>- -find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>- -describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene .simple food chain, and identify and name different sources of food.</li> </ul>	

3	Weekly science lessons. Science elements also integrated into creative, enquiry based creative curriculum.	<b>AUTUMN:</b> What can we find out about the lifecycle of plants and seed dispersal? What can we discover about forces and magnets?	<b>Plants</b> <ul style="list-style-type: none"> <li>- identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>- -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</li> <li>- -investigate the way in which water is transported within plants</li> <li>- -explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul> <b>Forces and magnets</b> <ul style="list-style-type: none"> <li>- -compare how things move on different surfaces</li> <li>- -notice that some forces need contact between two objects, but magnetic forces can act at a distance</li> <li>- -observe how magnets attract or repel each other and attract some materials and not others</li> <li>- -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</li> <li>- -describe magnets as having two poles</li> </ul>	Science and technology week. Health and Sports Week. Educational Visits: The Deep Cookery and nutrition lessons
		<b>SPRING:</b> Let's investigate rocks and soils	<b>Rocks</b> <ul style="list-style-type: none"> <li>- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>- describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>- recognise that soils are made from rocks and organic matter.</li> </ul>	
		<b>SUMMER:</b> Investigating light and shadows What is life like underwater?	<b>Light</b> <ul style="list-style-type: none"> <li>- recognise that they need light in order to see things and that dark is the absence of light</li> <li>- notice that light is reflected from surfaces</li> <li>- recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>- recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>- find patterns in the way that the size of shadows change.</li> </ul>	
4	Weekly science lessons. Science elements also integrated into creative, enquiry	<b>AUTUMN:</b> What are states of matter? What can we find out about electricity?	<b>States of matter</b> <ul style="list-style-type: none"> <li>- -compare and group materials together, according to whether they are solids, liquids or gases</li> <li>- -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)</li> </ul>	Science and technology week. Cookery and nutrition lessons

	based creative curriculum.		<ul style="list-style-type: none"> <li>- -identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul> <p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>- -identify common appliances that run on electricity</li> <li>- -construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>- -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</li> <li>- -recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>- -recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul>	Health and Sports Week.
		<p>SPRING: Let's investigate variation and classification What can we discover about food chains?</p>	<p><b>Living things in their habitats</b></p> <ul style="list-style-type: none"> <li>- -recognise that living things can be grouped in a variety of ways</li> <li>- -explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>- -recognise that environments can change and that this can sometimes pose dangers to living things.</li> <li>- -construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	
		<p>SUMMER: How does the digestive system work? What on Earth is beyond our planet? Space and the solar system</p>	<p><b>Animals including humans (Health and Sport Week)</b></p> <ul style="list-style-type: none"> <li>- -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</li> <li>- -identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> <li>- -describe the simple functions of the basic parts of the digestive system in humans</li> <li>- -identify the different types of teeth in humans and their simple functions</li> </ul> <p><b>Earth and Space</b></p> <ul style="list-style-type: none"> <li>- -describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>- -describe the movement of the Moon relative to the Earth</li> <li>- -describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>- -use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> </ul>	
5	Weekly science lessons. Science elements also	AUTUMN: Light	<p><b>Light</b></p> <ul style="list-style-type: none"> <li>- -associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> </ul>	Science and technology week.

	integrated into creative, enquiry based creative curriculum.	Evolution and inheritance (exploring fossils during the school residential).	<ul style="list-style-type: none"> <li>- 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</li> <li>- use recognised symbols when representing a simple circuit in a diagram.</li> </ul>	Health and Sports Week. Educational Visits: Whitby Cookery and nutrition lessons
		<p>SPRING:</p> <p>What are forces? What can we find out about sound?</p>	<p><b>Forces</b></p> <ul style="list-style-type: none"> <li>- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>- identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul> <p><b>Sound</b></p> <ul style="list-style-type: none"> <li>- identify how sounds are made, associating some of them with something vibrating</li> <li>- recognise that vibrations from sounds travel through a medium to the ear</li> <li>- find patterns between the pitch of a sound and features of the object that produced it</li> <li>- find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>- recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>	
		<p>SUMMER:</p> <p>I'm a celebrity get me out of here? All living things, habitats, plants and lifecycles</p>	<p><b>Living things and their habitats</b></p> <ul style="list-style-type: none"> <li>- describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>- describe the life process of reproduction in some plants and animals</li> <li>- describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</li> <li>- give reasons for classifying plants and animals based on specific characteristics.</li> </ul> <p><b>Animals including humans</b></p> <ul style="list-style-type: none"> <li>- describe the changes as humans develop to old age.</li> <li>- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> </ul>	
6	Weekly science lessons. Science elements also	<p>AUTUMN:</p> <p><b>Electricity</b></p>	<p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>- associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> </ul>	Science and technology week.

integrated into creative, enquiry based creative curriculum.		<ul style="list-style-type: none"> <li>- 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</li> <li>- use recognised symbols when representing a simple circuit in a diagram.</li> </ul>	Health and Sports Week. Educational Visits: Crucial Crew
	SPRING: What is the story behind chocolate?	<b>Properties and changes of materials</b> <ul style="list-style-type: none"> <li>- 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</li> <li>- know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>- use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>- give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>- demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>- 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.</li> </ul>	Workshop: chocolate making Cookery and nutrition lessons
	SUMMER: Animals including humans (nutrition, diet, health blocked during Sport and Health Week). Electricity	<b>Animals including humans</b> <ul style="list-style-type: none"> <li>- describe the changes as humans develop to old age.</li> <li>- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>- recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> </ul>	

**PRACTICAL SCIENTIFIC METHODS KS1:** During discreet science lessons and through learning opportunities planned into the wider integrated curriculum pupils will have the opportunity to develop the following practical scientific methods.

- 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

**PRACTICAL SCIENTIFIC METHODS LOWER KS2:** During discreet science lessons and through learning opportunities planned into the wider integrated curriculum pupils will have the opportunity to develop the following practical scientific methods.

- 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.

**PRACTICAL SCIENTIFIC METHODS UPPERKS2:** During discreet science lessons and through learning opportunities planned into the wider integrated curriculum pupils will have the opportunity to develop the following practical scientific methods.

- 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.

**ADDITIONAL WHOLE SCHOOL INFORMATION:** (displays, website, theme weeks, initiatives, community links, competitions, etc.)

**Community Cohesion, enrichment and extra-curricular:** School takes part in National Events (science and technology week). Children compete in interschool, local and national events and competitions. Pupils have the opportunity to take part in school trips to further their scientific learning. Through assemblies, theme weeks and lesson time pupils have the opportunity to explore the importance of Science locally, globally and culturally.

**Theme Weeks:** We have an annual science and technology week, sport and health week and annual science based performance or workshops.

**PLT challenges:** Many of our half termly PLY challenges have a scientific focus

**Pupil Premium/Dis:** Any events or activities in school requesting a voluntary contribution PP funding is used to ensure engagement from all PP|Dis students. Teachers are aware of the individuals making up this group within the class and monitor progress and attainment closely.

**G&T/Challenge:** All Science activities are differentiated. During Interfaith and philosophy week pupils have the opportunity to work on a range of projects facilitated by teaching staff. Teachers are aware of the individuals making up this group within the class and monitor progress and attainment closely.

**SEN/Inclusion:** All lessons are differentiated and the school's inclusion policy followed. Teachers are aware of the individuals making up this group within the class and monitor progress and attainment closely.