West Heath Primary School

Curriculum Map Science

Intent:

At West Heath, it is our intention to recognise the importance of science in every aspect of daily life. We give the teaching and learning of science the prominence it requires, through both theory and practical opportunities. The scientific area of learning is concerned with increasing pupils' knowledge and their understanding of our world, along with developing skills associated with science as a process of enquiry. Our science curriculum encourages the development and natural curiosity of the child; encourages respect for living organisms and the physical environment; whilst also providing opportunities for evaluation and critical thinking. We intend to build a science curriculum which develops learning and curiosity, results in the acquisition of knowledge and inspires a love of the subject. Links to sustainability and our responsibility to take care of our planet will be emphasised and embedded too. We strive to enable children to become enquiry based, knowledge-thirsty learners, who appreciate the science of yesterday, today and the future.

Implementation:

- Deliver a designated Science lesson of 90 minutes each week.
- Follow a clear and comprehensive scheme of work in line with the National Curriculum, where teaching and learning should show progression across all key stages within the strands of science.
- Children have access to key language and meanings in order to understand and readily apply scientific vocabulary in their written and verbal communication.
- Children will use a range of resources to develop their knowledge and understanding that is integral to their learning and further develop their understanding of working scientifically.
- A clear and comprehensive scheme of work, in line with the National Curriculum, ensures teaching and learning plans for practical investigative opportunities within science lessons.
- Children will reflect on previous learning and cross-curricular links will be made wherever possible.
- Children will be able to build on prior knowledge and link ideas together, enabling them to question and become enquiry-based learners.
- Regular formative and summative assessments will be made in order to plan future lessons and to support or stretch pupils as required.
- Where applicable, to enhance other areas of the curriculum, links to science will be made to develop the children's topical learning. Specific links to our sustainability school project will be made on a regular basis.
- Science at the Foundation Stage is covered in the, Understanding the World area of the EYFS curriculum. It is introduced indirectly through activities that encourage every child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them. It is from here that the children then access our science scheme of learning, which aims to develop all pupils to know more, remember more and do more within the context of science.

Impact:

At West Heath, we ensure that pupils have the opportunity to secure and retain knowledge that is pertinent to science with a real-life context. We want children to be able to question ideas and reflect on their own knowledge (new and gained). The Science curriculum encourages them to work collaboratively and practically to investigate and experiment, whilst building on a child's science capital. This then allows our pupils to explain the process they have taken and be able to reason scientifically. Our science curriculum is high quality, well thought out and is planned to demonstrate progression across key phases and subject areas. We focus on progression of knowledge and skills.

We measure the impact of our curriculum through the following methods:

- Assessing children's understanding of subject specific vocabulary and prior knowledge before and after the unit is taught.
- Recording images and videos of the children's practical learning.

- Pupil voice.
- Moderation staff meetings where pupil's books are scrutinised and there is the opportunity for a dialogue between teachers to understand their class's work.
- Annual reporting of standards across the curriculum.
- Marking of work in books.
- FFT Aspire assessments completed at the end of every half term.

EYFS

Through dynamic and discrete learning opportunities, EYFS pupils experience Science through their continuous provision and through the ELG Understanding the World. Staff question pupils deepening their knowledge and expanding their understanding of a topic area.

Engineering

Children explore how things work and how they are made.

Suggestions:

- Provide mechanical equipment for children to play with and investigate: wind-up toys, pulleys, sets of cogs with pegs and boards.
- Building bridges and structures with a purpose (e.g. bridge, boat, shelters)

Growing

Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things. Show and explain the concepts of growth, change and decay with natural materials.

Suggestions:

- Plant seeds and bulbs so children observe growth and decay over time
- Observe an apple core going brown and mouldy over time
- Help children to care for animals and take part in first-hand scientific explorations of animal life cycles, such as caterpillars or chick eggs.
- Plan and introduce new vocabulary related to the exploration.
- Encourage children to use it in their discussions, as they care for living things.
- Name and describe some plants and animals children are likely to see
- Understand the effect of changing seasons on the natural world around them.
- Guide children's understanding by draw children's attention to the weather and seasonal features. Provide opportunities for children to note and record the weather.

- Select texts to share with the children about the changing seasons.

Forces

Explore and talk about different forces they can feel. Draw children's attention to forces.

Suggestions:

- How the water pushes up when they try to push a plastic boat under it
- How they can stretch elastic, snap a twig, but cannot bend a metal rod
- Magnetic attraction and repulsion opportunities with materials
- Plan and introduce new vocabulary related to the exploration and encourage children to use it.
- Talk about the differences between materials and changes they notice.
- Explore how different materials sink and float

Materials

Provide children with opportunities to change materials from one state to another.

Suggestions:

- cooking – combining different ingredients, and then cooling or heating (cooking) them
- melting – leave ice cubes out in the sun, see what happens when you shake salt onto them (children should not touch to avoid danger of frostbite)
- Observe and interact with natural processes, such as ice melting,

Light and sound

Explore light and sound around them in their indoor and outdoor environments.

Suggestions:

- Explore how you can shine light through some materials, but not others.
- Investigate shadows – size, shape.
- Plan and introduce new vocabulary related to the exploration and encourage children to use it
- Discuss a sound causing a vibration
- Light travelling through transparent and blocked by opaque materials
- Show and make shadows by demonstrating objects blocking light and casting a shadow

CURRICULUM MAP
Year 1
Maths Links: standard units length, capacity full empty, mass heavier lighter
Geography Links: weather and climate
PE Links: limbs of the body, bone names, muscles, movement types, senses

HEART: Excellence Respect Collaboration Honesty Resilience Determination Empathy					
AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Everyday Materials	**Humans and their senses**	**Plants**	**Seasonal changes**	**Animals**	**Consolidation unit**
HEAD Substantive Knowledge 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 to include strength, texture, absorbency • Compare and group together a variety of everyday materials on the basis of their simple physical properties using a Venn Diagram **Working Scientifically** • Make simple predictions	HEAD Substantive Knowledge Pupils should be taught to: • Identify and name the basic parts of the body • Draw and label the basic parts of the human body • Know and define each sense • Identify which part of the body is associated with each sense **Working Scientifically** • Identify and classify • Observe using simple equipment • Perform simple tests	HEAD Substantive Knowledge Pupils should be taught to: • Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. • Group and classify plants by their key features • Identify and describe the basic structure of a variety of common flowering plants, including trees. • Understand that plants grow **Working Scientifically** • Observation from images • Observations over time • Classify into groups	HEAD Substantive Knowledge Pupils should be taught to: • Identify and name the four seasons • Know the key characteristics of each season • Observe changes across the four seasons • Observe and describe weather associated with the seasons • Describe how day length varies in the seasons **Working Scientifically** • Observations from images and videos • Ask simple questions • Make simple predictions	HEAD Substantive Knowledge Pupils should be taught: • Identify, name and sort 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) **Working Scientifically** • Make observations	**Year 1 consolidation of learning from across the year group.** Pupils will recap knowledge from: - Materials Autumn 1 - Animals Autumn 2 - Plants Spring 1 - Seasons Spring 2 - Human and senses Summer 1

• Perform simple tests • Record simple observations				from photographs • Classify animals based on their animal groups	
Key vocabulary for unit Hard, sort, stretchy, stiff shiny dull, rough, smooth, waterproof, material object, test, predict	**Key vocabulary for unit:** Head, mouth, shoulder, arm, hand, fingers, foot, eyes, nose, ears, chest, abdomen, knee, toes, see, touch, smell, taste, hear	**Key vocabulary for unit:** Plant, tree, deciduous, evergreen, flower, roots, stem, leaf	**Key vocabulary for unit:** Spring, summer, autumn, winter, change, seasons, rain, wind, sun, snow	**Key vocabulary for unit:** Mammal, fish, bird, reptile, amphibians, compare, carnivore, omnivore, herbivore	

CURRICULUM MAP					
Year 2					
Maths Links: cm, g, kg, mls, l, temperature tally, block, pictogram, tables					
Geography Links: climate, environments					
PE Links: rate of breathing, impact of exercise, healthy diet and lifestyle, bones, muscles, how the body works, movement types					
HEART: Excellence Respect Collaboration Honesty Resilience Determination Empathy					
AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2

Uses of everyday materials	Animals, including humans	Plants	Living things and their habitats	Consolidation unit	Consolidation unit
HEAD Substantive Knowledge 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. **Working scientifically** • Collect information to answer a question in a tally chart • Interpret results and use to draw conclusions.	HEAD Substantive Knowledge Pupils should be taught to: • The difference between, living and non-living things including things that were once alive • Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). • Know and use the term offspring • Notice that animals, including humans, have offspring, which grow into adults. • Know the 5 food groups and the fact that a balanced diet includes elements of each • Know why good hygiene is important, including teeth brushing and handwashing	HEAD Substantive Knowledge Pupils should be taught to: • To identify and name a range of plants and flowers • Observe and describe how seeds and bulbs grow into mature plants • Understand the basic life cycle of a plant • Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy **Working scientifically** • Identify and classify • Observe and explain a life cycle • Comparative test • Make a prediction	HEAD Substantive Knowledge Pupils should be taught to: • Explore and compare the differences between things that are living, dead, and things that have never been alive • Understand that all living things need to experience life processes • Identify that most living things live in habitats to which they are suited • Identify different habitat types • 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	**Working Scientifically Measurement taught with links to materials, plants, animals, living things.** **Teachers must assign a focus topic (see above topic areas) in order to complete the investigations.** Pupils should be taught to: • Use a ruler to take accurate measurements with cms (length) • Use meter sticks to take accurate measurements in m and cm (length) • Use scales to weigh and measure weight accurately (mass) • Read capacity measuring jugs to measure liquid (volume) **Working scientifically**	**Year 1 and 2 consolidation of learning from across the phase group.** Pupils will recap knowledge from: - Materials - Animals including humans - Plants - Seasons - Human and senses - Living things and their habitat

	Working scientifically • Collect relevant data in relation to growing in a table • Measure accurately using a ruler • Draw simple conclusions		from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. **Working scientifically** • Identify and classify • Observe through images and videos • Explore and observe the local environment • Make a prediction • Answer simple questions		
Key vocabulary for unit: Properties, material, uses, push, pull, twist stretch, change,	**Key vocabulary for unit:** Living, non-living, animal, plant, exercise, offspring, exercise, health, protein, carbohydrate, fat, vitamin, minerals, fat, hygiene, germs	**Key vocabulary for unit:** Plant, bulb, seed, tree, flower, root, stem, leaf, life cycle,	**Key vocabulary for unit:** Living thing, alive, dead, living, habitat, microhabitat, conditions, adapted, food chain		

CURRICULUM MAP					
Year 3					
Maths Links: Year 3 bar charts two way tables mm, cm, mg, kg, mls, li					
Geography Links: rock formation, fossils, land types					
PE Links: impact of exercise, healthy diet and lifestyle, bones, muscles, how the body works, movement types					
HEART: Excellence Respect Collaboration Honesty Resilience Determination Empathy					
AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2

Rocks	Light	Animals, including humans	Plants	Forces and Magnets	Consolidation unit
HEAD Pupils should be taught to: • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties including permeability • Know that rocks are sedimentary, metamorphic or igneous and know some of the properties of each group. • 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. **Working Scientifically** • Use a simple classification	HEAD Pupils should be taught to: • Know what a light source is and identify sources of light • 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 and skin • Recognise that shadows are formed when the light from a light source is blocked by an opaque object • Understand and use the terms opaque, transparent and translucent. **Working Scientifically**	HEAD Pupils should be taught to: • Identify that animals, including humans, need the right types and amount of nutrition • Know what a healthy and unhealthy diet is • Understand that animals 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. • Compare and group animals based on their body structure • Understand the terms vertebrate and invertebrate • Identify and name basic bones and muscles within the human body	HEAD 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 **Working Scientifically**	HEAD 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,	**Year 3 consolidation of learning from across the year group.** Pupils will recap knowledge from: - Rocks Autumn 1 - Light Autumn 2 - Animals Spring 1 - Plants Spring 2 - Forces Summer 1

table to name different rocks. • Carry out simple test into • Make predictions based on observable properties • Carry out a fair test and identify which variables are kept the same and which change • Measure accurately using a measuring cylinder	• Understand what observations are record in a table • Find patterns in the way that the size of shadows change. • Identify how to keep a test fair by identify the variables that will change and those that will stay the same. • Measure accurately using a ruler	**Working Scientifically** • Create a table and bar chart of data • Identify and classify images of animals • Compare and contract different diets • Research what nutrients humans need to stay healthy • Make predictions	• Make a prediction based on knowledge • Compare external factors affecting plant growth • Observe over time how water travels through plants/flowers • Identify fair tests • Record observations	depending on which poles are facing. **Working Scientifically** • Make predictions on how surfaces affect movement • Compare and group items based on how they move • Record data accurately • Measure with a ruler • Sort and classify based on magnetic properties	
Key vocabulary for unit: Sedimentary rock, igneous rock, metamorphic rock, permeable, permeability, classification key, fair test, variable, predication, fossil, soil	**Key vocabulary for unit:** Light source, darkness, reflect, UV light, eye, pupil, damage, observations, fair test, variables, measure, shadow, opaque, transparent, translucent.	**Key vocabulary for unit:** Nutrition, skeleton, bones, muscles, diet, vertebrate, invertebrate, healthy, unhealthy	**Key vocabulary for unit:** Plant, tree, flower, roots, stem, leaf, seed, blub, nutrients, pollination, fertilisation, formation, dispersal	**Key vocabulary for unit:** Force, magnet, contact, non-contact, attract, repel, magnetic, non-magnetic, iron	

CURRICULUM MAP					
Year 4					
Maths Links: Year 4 read an interpret tables, line graphs interpret and draw					
Geography Links: habitats, environments, climate					
PE Links: impact of exercise, healthy diet and lifestyle, bones, muscles, how the body works, movement types					
HEART: Excellence Respect Collaboration Honesty Resilience Determination Empathy					
AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
States of Matter	**Animals, including humans**	**Living things and their habitats**	**Sound**	**Electricity**	**Consolidation unit**

HEAD	HEAD	HEAD	HEAD	HEAD	**Year 4 consolidation of learning from across the year group.**
Pupils should be taught to: • Identify a solid, liquid and gas, being able to explain their characteristics • 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 • Measure or research the temperature at which materials change their state in degrees Celsius (°C). • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. **Working scientifically** • Make prediction based on prior and taught knowledge	Pupils should be taught to: • Describe the simple functions of the basic parts of the digestive system in humans including the mouth, oesophogues, stomach, small and large intestines and the anus • Identify the different types of teeth (molars, canines and incisors) in humans and their simple functions. • Know why it is important to keep your teeth healthy and how this can be done • Explain the impact of a diet high in sugar on the teeth • Use the terms omnivore, carnivore and herbivore correctly • Construct and interpret a variety of food chains, identifying producers, predators and prey.	Pupils should be taught to: • Distinguish between living and non-living objects • Know the seven life processes • 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. • Understand the impact of human choice on the world around them **Working scientifically** • Identify and classify using classification keys	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. • Know that in space there is no sound • Find patterns between the pitch of a sound and the 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. **Working scientifically** • Measure accurately using a trundle wheel	Pupils should be taught to: • Identify common appliances that run on electricity – mains and battery • Understand how mains electricity is transported from power stations • Know why batteries run out of charge • 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	Pupils will recap knowledge from: - Sound Autumn 1 - Animas Autumn 2 - Living Things Spring 1 - States of Matter Spring 2 - Electricity Summer 1

• Set up simple practical tests, using suitable equipment for the task • Measure accurately with a thermometer • Observe changes over time	**Working scientifically** • Make systematic observations over time • Draw conclusion based upon observable results.	• Gather data for analysis • Generate tally charts and bar charts • Report on findings through presentation	• Make predictions based on prior knowledge • Design and carry out a fair test into sound insulation, identifying the variables to change and keep the same.	lamp lights in a simple series circuit. • Know and be able to explain what a conductor and insulator is • Recognise some common conductors and insulators, and associate metals with being good conductors. **Working scientifically** • Ask relevant questions and use different types of enquiry to answer them • Set up simple circuits to answer questions • Use results to draw valid conclusions • Identify and classify conductors and insulators • Use scientific evidence to answer questions and draw valid conclusions	
Key vocabulary for unit: Change, collection, condensation,	**Key vocabulary for unit:** Predator, prey, consumer, food chain,	**Key vocabulary for unit:** Environment, classify, invertebrate, vertebrate,	**Key vocabulary for unit:** Pitch, volume, vibration, wave, insulation,	**Key vocabulary for unit:** Appliance, electricity, battery, circuit,	

evaporation, freeze, gas, liquid, solid, heat, precipitation, temperature, thermometer	molar, canines, incisors, oesophagus, mouth, stomach, small intestine, large intestine, nutrients, blood stream, decay, plaque	exoskeleton, key, adaption, pollution	measure, fair test, variable, prediction	component, circuit, conductor, current, insulator, mains power, portable, pylon, power station, switch	
CURRICULUM MAP					
Year 5					
Maths Links: graphs and tables					
Geography Links: Real world context, natural systems					
PE Links: respiratory system, cardiovascular system, impact of exercise, healthy diet and lifestyle, bones, muscles, how the body works, movement types					
HEART: Excellence Respect Collaboration Honesty Resilience Determination Empathy					
AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Forces	**Animals, including humans**	**Properties and changes of materials**	**Earth and Space**	**Consolidation unit**	**Consolidation unit**

HEAD Pupils should be taught to: • Define and explain what gravity, air resistance and friction is • 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 • Know how forces are helpful and unhelpful in various scenarios, identifying which force it is • Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. **Working scientifically**	HEAD Pupils should be taught to: • Describe the human life cycle and the changes that take place at each stage • Describe the differences in the life cycles of a mammal, an amphibian, reptile an insect and a bird • Describe the seven life processes of all living things • Explain reproduction in humans and one other animal group in detail • Know how plants reproduce • Know and explain the main stages in the life cycle of a plant including germination, reproduction, pollination, seed dispersal **Working Scientifically** • Answer scientific questions using information from	HEAD 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 • 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,	HEAD Pupils should be taught to: • Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. • Know the order of the planets of the solar system • Know that the sun is a star and without it, life on Earth would cease to exist • Describe the movement of the Moon relative to the Earth. • Know that the moon is not a light source • Describe the Sun, Earth and Moon as approximately spherical bodies. • Know that the earth takes 365 days to orbit the sun • Know why we have leap years • Know that the earth takes 24 hours to rotate on its axis.	**Scientist Research Project and Presentation** Pupils need to be taught: • How to research effectively • How to use a search engine suitably • How to use their findings to present relevant information • Know the scientists and why they are famous: - David Attenborough - Jane Goodall - Isaac Newton - Ptolemy - Alhazen - Copernicus - Galileo Galilei - Mary Anning - Isaac Newton - Albert Einstein - Marie Curie *This list is not exhaustive. Teacher discretion applied.* Children will – Research a given scientist creating a presentation through the medium of	**Year 5 consolidation of learning from across the year group.** Pupils will recap knowledge from: - Earth and Space Autumn 1 - Animals Autumn 2 - Properties and changes of materials Spring 1 - Forces Spring 2

• Plan different types of scientific enquiry to answer questions • Make predictions • Take accurate measurements using a range of equipment • Record results and data using scientific diagrams, labels and graphs • Report and present findings from scientific enquiry	text books and internet research.	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. **Working Scientifically** • Identify and classify materials based on properties • Plan a scientific experiment to test the effectiveness of materials for a given job • Measure with increasing accuracy • Record data and results increasing in complexity • Report and present findings	• Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. **Working Scientifically** • Plan a fair test to investigate how shadows change across the course of the day • Measure accurately in cm and m • Record results in a table • Produce a line graph to illustrate results. • Draw conclusions based on results	their choice (PPT, paper, verbal, poster) to inform their peers of the work of their scientist. **Working scientifically** • Research, in detail, a given scientist • Present findings of research for understanding	

		from scientific enquiry			
Key vocabulary for unit: Force, friction, gravity, pull, push, repel, resistance, drag, streamlined, up-thrust, buoyancy, Newton (N), gear, lever, pulley	**Key vocabulary for unit** Mammals, amphibians, insects, birds, gestation, reproduction, movement, respiration, sensitivity, growth, excretion, nutrition, pollination, germination, seed dispersal	**Key vocabulary for unit:** Soluble, insoluble, saturation, solution, filtration, boiling, condensing, evaporation, freezing, melting, melting point, chemical change, physical change, reversible change, irreversible change	**Key vocabulary for unit:** Earth, sun, moon, orbit, rotate, axis, year, planet, star, shadow, day, night,		
CURRICULUM MAP					
Year 6					
Maths Links: average (mean) pie charts, dual bar charts					
Geography Links: fossils, natural systems, real world context, environments					
PE Links: respiratory system, cardiovascular system, impact of exercise, healthy diet and lifestyle, bones, muscles, how the body works, movement types					
HEART: Excellence Respect Collaboration Honesty Resilience Determination Empathy					
AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Light	**Animals, including humans**	**Living things and their habitats**	**Evolution and inheritance**	**Electricity**	**Consolidation unit**

HEAD	HEAD	HEAD	HEAD	HEAD	**Key Stage 2 consolidation of learning.**
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 • Draw clear scientific diagrams to show the path of light from a light source to our 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 • Know how mirrors reflect light • Know how mirrors can be used to solve problems including the use of periscopes • Know that white light is made of a spectrum of	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 9 veins, arteries and capillaries) and blood • Recognise the impact of a balanced diet containing all food groups on the way the body functions. • Recognise the impact exercise has on both peoples physical and mental health • Recognise the impact drugs such as nicotine, alcohol and other substances have on the body and understand how people can become addicted to these. • Know the difference between recreational drugs and medicines, but now both can be harmful.	Pupils should be taught to: • Know that living things can be classified • 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 • understand how to use a classification key to group things • understand that microorganisms are living things • identify key characteristics of living things to help classify • give reasons for classifying plants and animals based on specific characteristics • know who Carl Linnaeus us and be able to explain why he	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 • explain what inheritance is and what characteristics can be inherited • define and explain the term evolution • know what adaptation is and give examples of adaptations in living things • identify how animals and plants are adapted to suit their environment in different ways and	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 **Working scientifically** • use scientific evidence to refute ideas or arguments • conduct a fair test to investigate how voltage affects the performance of components in a circuit	Pupils will recap knowledge from key stage 2 scientific modules: Animals including humans Living things and their habitat Materials Rocks Light Magnets and forces Earth and space Electricity Sound Evolution and inheritance

colours and know the colours of the rainbow • use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them **Working scientifically** • independently plan an investigation into how to change the size of a shadow, identifying variables and deciding how to collect results and analyse them	• describe the ways in which nutrients and water are transported within animals, including humans **Working scientifically** • Understand the importance of taking multiple readings of results and using these to calculate averages.	is an important scientist **Working scientifically** • Classify using a classification key • Make predictions based on information provided • Plan an investigation to explore is yeast is a micro-organism • Present data and results, drawing valid conclusion • Research and present findings about a key scientist	that adaptation may lead to evolution • define and understand the process of natural selection **Working scientifically** • Plan an investigation to identify which beak is better adapted to pick up the seed. • Take accurate measurements • Present data and results during valid conclusions	• use test results to make predictions to set up further comparative judgements and fair tests • Answer questions using scientific reasoning around why circuits will/will not work	
Key vocabulary for unit: Light source, light ray, reflection, prism, spectrum, opaque, transparent, translucent, eye, pupil, rainbow	**Key vocabulary for unit:** Circulation, heart, ventricles, atrium, aorta, vein, capillary, average, drugs, medicine, alcohol, addiction, nutrition, protein, carbohydrate, vitamin, minerals, fats, physical health, mental health	**Key vocabulary for unit:** Classify, micro-organism, vertebrae, invertebrate, exoskeleton, vascular, non-vascular, taxonomy, Carl Linnaeus	**Key vocabulary for unit:** Adaptation, environment, evolution, gene, natural selection, inheritance, organism, species, micro-organism	**Key vocabulary for unit:** Appliance, battery, circuit, components, conductor, electrical, insulator, mains power, pylon, renewable energy, non-renewable energy	