

Developing an understanding of the human organism – the different systems that must operate together to ensure the human body functions correctly							
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Term 1	<p>Identify some different parts of the human body (head / arms / legs / etc.)</p> <p>Describe themselves to other members of the class</p> <p>Talk about:</p> <ul style="list-style-type: none"> • food they eat / teeth • how they grow up e.g. baby to child • learning to talk • learning to crawl then walk <p>Working Scientifically Make simple observations and say / describe what they have seen E.g. "I have a head / arms / legs / etc." Notice different eye / hair colour</p>	<p>Animals, including Humans</p> <ul style="list-style-type: none"> • Human body and senses <p>Working Scientifically See term 6</p>	<p>Animals, including Humans</p> <ul style="list-style-type: none"> • Animal reproduction • Healthy living • Basic needs <p>Working Scientifically See term 6</p>	<p>Animals, including humans</p> <ul style="list-style-type: none"> • Skeleton and muscles • Nutrition • Exercise and health <p>Working Scientifically Test to see if their right hand is as efficient as their left hand Explain to a partner why a test is a fair one e.g. lifting weights with right and left hand, etc.</p>	<p>Animals, including humans</p> <ul style="list-style-type: none"> • Digestive system • Teeth • Food chains <p>Working Scientifically Ask questions like: Why is the liver important in the digestive systems? Use research to find out how much time it takes to digest most of our food</p>	<p>Animals, including humans</p> <ul style="list-style-type: none"> • Changes as humans develop from birth to old age <p>Working Scientifically Set up an enquiry based investigation e.g. find out what adults / children can do now that they couldn't when a baby</p>	<p>Animals, including humans</p> <ul style="list-style-type: none"> • The circulatory system • Water transportation • Impact of exercise on body <p>Working Scientifically Know which type of investigation is needed to suit particular scientific enquiry e.g. looking at the relationship between pulse and exercise Know how to set up an enquiry based investigation e.g. what is the relationship between oxygen and blood?</p>
	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> • At a very simple level introduce the idea of the human body and some different parts to set the scene for developing an understanding of the human organism 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> • Builds on basic idea / concepts on the human body from EYFS • Sets the scene for developing Y2 basic needs / reproduction / etc. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> • Developing the idea of exercise / hygiene / healthy living as part of basic needs builds on food / teeth from EYFS / Y1. • Sets scene for skeletal system / nutrition / health in Y3. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> • Develop the pupils' knowledge of the skeletal/ muscular system from Y2 and link this with exercise / health / nutrition. • Concept of transport system (blood) for Y4 / Y6 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> • Concept of nutrition from Y3 – now "what happens to the food we eat?" • Function and role of teeth in nutrition / digestion • Food chains further developed from Y2 work. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> • Builds on reproduction from Y2 and changes in lifestyle from Y3 / Y4 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> • Builds on Y3 circulation work / balanced diet. • As pupils are developing looks at negative impacts of lifestyle on human system
	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> • Human • Baby / Boy / Girl • Head / arms / legs / etc. • Mouth / teeth 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> • Parts of the human body that can be seen • Names of 5 senses 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> • Exercise • Life cycle • Hygiene • Balanced Diet 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> • Skeleton / muscles • Nutrition • Blood (inc. arteries / veins) 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> • Digestion • Teeth (4 types) • Mouth – stomach – intestines • Food chains – producer (plants from Y3) / predator / prey 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> • Timeline / milestones • Life cycle • Growth and development 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> • Circulation system – heart / blood / 3 types of blood vessel • Healthy and un-healthy lifestyle choices
	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> • To know the names of the different senses. • To know what they can see, hear, smell, touch and taste within their school environment. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> • Know the name of parts of the human body that can be seen. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> • Know the basic stages in a life cycle for animals, (including humans) • Know why exercise, a balanced diet and good hygiene are important for humans. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> • Know about the importance of a nutritious, balanced diet. • Know how nutrients, water and oxygen are transported within animals and humans. • Know about the skeletal and muscular system of a human. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> • Identify and name the parts of the human digestive system. • Know the functions of the organs in the human digestive system. • Identify and know the different types of human teeth. • Know the functions of different human teeth. • Use and construct food chains to identify producers, predators and prey. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> • Create a timeline to indicate stages of growth in humans. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> • Identify and name the main parts of the human circulatory system. • Know the function of the heart, blood vessels and blood. • Know the impact of diet, exercise, drugs and lifestyle on health. • Know the ways in which nutrients and water are transported in animals, including humans.

Developing an understanding of what living things are, why they live in different places, how we can group similar types of animals together and how we can find out about animals from a long time ago							
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Term 2	<p>Explore the natural world around them</p> <p>Describe what they see, hear and feel whilst outside</p> <p>Recognise some environments that are different to the one in which they live</p> <p>Working Scientifically Make simple observations and say / describe what they have seen E.g. talk about the world around them</p>	<p>All living things and their habitats</p> <ul style="list-style-type: none"> Name common animals Carnivores, etc <p>Working Scientifically Put animals into groups based on what they eat – simple classification</p>	<p>All living things and their habitats</p> <ul style="list-style-type: none"> Alive or dead Habitats Adaptations Food chains <p>Working Scientifically Classify things by living, dead or never lived</p>	<p>Rocks</p> <ul style="list-style-type: none"> Fossil formation Compare and group rocks Soil <p>Working Scientifically Use research to find out what the main differences are between sedimentary and igneous rocks</p> <p>Ask questions like - Where does a fossil come from?</p>	<p>All living things and their habitats</p> <ul style="list-style-type: none"> Grouping living things Classification keys Adaptation of living things <ul style="list-style-type: none"> Use classification keys to group, identify and name living things Know how changes to an environment could endanger living things <p>Working Scientifically Create and use a simple classification key</p>	<p>All living things and their habitats</p> <ul style="list-style-type: none"> Life cycles – plants and animals Reproductive processes Famous naturalists <p>Working Scientifically Able to relate causal relationships when, for example, studying life cycles</p>	<p>Evolution and Inheritance</p> <ul style="list-style-type: none"> Identical and non-identical off-spring Fossil evidence and evolution Adaptation and evolution <p>Working Scientifically NA (Scientific method)</p>
	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Build an understanding that the world is different in different places Help pupils understand animals live in different places 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Builds on understanding of different animals / habitats from EYFS Sets scene for food chains / habitats in Y2. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Why carnivores, herbivores & omnivores live where they do – features of different habitats Beginning of energy transfer concept for Y4 (food chains) 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Standalone unit – lays groundwork for Y6 evolution / inheritance with work on fossils Classifying rocks – supports classification work in Y4. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Builds on grouping / classification from KS1 and Y3 Introduces concept of adaptation for Y6 Damage to habitats 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Uses human life cycle from term 1 to extend to plants / other animals Reproduction / inheritance / adaptation work from Y4/Y5 sets scene for Y6 work 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Pulling themes / work from last 6 years together to apply scientific method to evolution and inheritance
	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Desert / forest / ocean / arctic 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Living / non-living Herbivore / carnivore / omnivore Amphibian / bird / reptile / fish / mammal 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Habitat Food chain Living / dead / never lived 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Fossil 3 types of rock Properties Soil Classification 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Classification Adaptation Habitats / damage 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Life cycles Types of animals Reproduction stages – plants / animals 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Evolution Adaptation Habitat change over time Reproduction “Survival of fittest”
	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Name different types of animals. Understand some animals live in different places e.g. fish in the sea. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know how to classify a range of animals by amphibian, reptile, mammal, fish and birds. Know and classify animals by what they eat (carnivore, herbivore and omnivore). Know how to sort by living and non-living things. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Classify things by living, dead or never lived. Know how a specific habitat provides for the basic needs of things living there (plants and animals). Match living things to their habitat. Name some different sources of food for animals. Know about and explain a simple food chain. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Compare and group rocks based on their appearance and physical properties, giving reasons. Know how soil is made and how fossils are formed. Know about and explain the difference between sedimentary, metamorphic, and igneous rock. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Use classification keys to group, identify and name living things. Know how changes to an environment could endanger living things 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know the life cycle of different living things e.g. mammal, amphibian, insect and bird. Know the differences between different life cycles. Know the process of reproduction in plants. Know the process of reproduction in animals. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know how the Earth and living things have changed over time. Know how fossils can be used to find out about the past. Know about reproduction and offspring (recognising that offspring normally vary and are not identical to their parents). Know how animals and plants are adapted to suit their environment. Link adaptation over time to evolution. Know about evolution and can explain what it is.

Building an understanding of plants (EYFS to Y3) – links to term 2 work on food chains / webs and energy transfer. For Y4 and Y5 we build on an understanding of matter from KS1. For Y6 we complete the term two theme.							
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Term 3	<p>Explore the natural world around them (focus on plants)</p> <p>Describe what they see, hear and feel whilst outside (focus on plants)</p> <p>Recognise some environments that are different to the one in which they live</p> <p>Understanding the effect of changing seasons on the natural world around them</p> <p>Working Scientifically Make simple observations and say / describe what they have seen</p>	<p>Plants</p> <ul style="list-style-type: none"> Common plants Plant structure <p>Working Scientifically See term 6</p>	<p>Plants</p> <ul style="list-style-type: none"> Plant and seed growth Plant reproduction Keeping plants healthy <p>Working Scientifically Investigate plant growth factors</p>	<p>Plants</p> <ul style="list-style-type: none"> Plant life Basic structure and functions Life cycle Water transportation <p>Working Scientifically Observe which type of plants grow in different places e.g. bluebells in woodland, roses in domestic gardens, etc.</p> <p>Test to see which type of soil is most suitable when growing two similar plants</p> <p>Set up a fair test with different variables e.g. the best conditions for a plant to grow</p> <p>Group information according to common factors e.g. plants that grow in woodlands or plants that grow in gardens</p>	<p>States of Matter</p> <ul style="list-style-type: none"> Compare and group materials Solids, liquids and gases Changing state Water cycle <p>Working Scientifically Ask questions such as: Why are steam and ice the same thing?</p> <p>Explain to others why a test that has been set up is a fair one e.g. discover how fast ice melts in different temperatures</p> <p>Use a data logger to check on the time it takes ice to melt to water in different temperatures</p> <p>Use a thermometer to measure temperature and know there are two main scales used to measure temperature</p>	<p>Properties and changes in materials</p> <ul style="list-style-type: none"> Compare properties of everyday materials Soluble/ dissolving Reversible and irreversible substances <p>Working Scientifically Set up an investigation when it is appropriate e.g. finding out which materials dissolve or not</p>	<p>All living things and their habitats</p> <ul style="list-style-type: none"> Classification of living things and the reasons for it <p>Working Scientifically Able to give an example of something they have focused on when supporting a scientific theory e.g. classifying vertebrate and invertebrate creatures or why certain creatures choose their unique habitats</p>
	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> We make sure pupils know what plants are and have some understanding of seasons – which has developed through Term 1 to 3. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Build on names / plants work from EYFS. Springtime things start growing 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Laying foundation for plant life cycle work in Y3 Knowing what plants need to grow 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Bringing together KS1 work on plants with the plant life cycle and importance of water. Summarises all work on plants. (Food chain-producer) 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Water cycle link to water and plant growth in Y3. Introduction of the change of state – triple point 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Builds on changing state from Y4 and previous classification work 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Extends term two work from Y6 Summarises classification
	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Plants Plants parts / names 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Names of plant and tree parts 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Seeds / bulbs Water / light / heat (temperature – link to seasons / spring) 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Life cycle Names of parts of plants / trees Water transport 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Water cycle – condensation / evaporation Changing state Classification (S / L / G) 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Properties Solution / dissolving Separation techniques 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Classification Similarities / differences
	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> To know the basic parts of flowering plants. To know the basic needs of what a plant needs to grow. To know how to care for a plant. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know and name a variety of common wild and garden plants. Know and name the petals, stem, leaves and root of a plant. Know and name the roots, trunk, branches and leaves of a tree. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know and explain how seeds and bulbs grow into plants. Know what plants need in order to grow and stay healthy (water, light & suitable temperature). 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know the function of different parts of flowering plants and trees. Know how water is transported within plants. Know the plant life cycle, especially the importance of flowers. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know the temperature at which materials change state. Know about and explore how some materials can change state. Know the part played by evaporation and condensation in the water cycle. Group materials based on their state of matter (solid, liquid or gas). 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets. Know and explain how a material dissolves to form a solution. Know and show how to recover a substance from a solution. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Classify living things into broad groups according to observable characteristics and based on similarities and differences. Know how living things have been classified. Give reasons for classifying plants and animals in a specific way.

						<ul style="list-style-type: none">• Know and demonstrate how some materials can be separated (e.g. through filtering, sieving and evaporating).• Know and demonstrate that some changes are reversible and some are not.• Know how some changes result in the formation of a new material and that this is usually irreversible.	
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An understanding of simple materials in KS1 is then used to underpin work on forces and electricity in KS2							
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Term 4	<p>Explore the natural world around them</p> <p>Describe what they see, hear and feel whilst outside</p> <p>Recognise some environments that are different to the one in which they live</p> <p>Understanding the effect of changing seasons on the natural world around them</p> <p>Working Scientifically Make simple observations and say / describe what they have seen</p>	<p>Everyday Materials</p> <ul style="list-style-type: none"> Properties of materials Grouping materials <p>Working Scientifically Group & classify simply</p>	<p>Everyday Materials</p> <ul style="list-style-type: none"> Identify different materials Name everyday materials Properties of materials <p>Working Scientifically Test properties</p>	<p>Forces</p> <ul style="list-style-type: none"> Different Forces Magnets <p>Working Scientifically Investigate which materials are magnetic</p> <p>Investigate using a simple pulley to lift weights (and then lift without pulley)</p>	<p>Electricity</p> <ul style="list-style-type: none"> Uses of electricity Simple circuits and switches Conductors and insulators <p>Working Scientifically Use research to find out which materials make effective conductors and insulators of electricity Group information according to common factors e.g. materials that make good conductors or insulators</p>	<p>Forces</p> <ul style="list-style-type: none"> Gravity Friction Forces and motion of mechanical devices <p>Working Scientifically Set up a fair test when needed e.g. which surfaces create most friction? Know what the variables are in a given enquiry and can isolate each one when investigating e.g. finding out how effective parachutes are when made with different materials</p>	<p>Electricity</p> <ul style="list-style-type: none"> Electrical components Simple circuits Fuses and voltage <p>Working Scientifically Investigate the effects of adding more cells</p>
	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Children can use senses to explain what they see, feel, and hear in relation to weather changes. Can visibly see physical changes happening: leaves, plants, grass... 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Sets scene for Year Two materials, e.g. naming some materials and describing their properties. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Build on Year One knowledge. Examine properties of materials and see how they differ when changed. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> By understanding 'everyday' materials, children look at objects that are magnetic: what attracts / repels. How objects can be lifted and lowered. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Use knowledge of forces to create simple circuits. Know key elements of a circuit. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Builds on prior knowledge from Year Three. The effects of water and air resistance. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Reinforce learning from year Four. Use knowledge to accurately draw circuits. Look at voltage / cells and come up with reasons why components won't work.
	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Spring Growing 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Grouping Materials Key features: shiny; dull; soft hard. 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Squashing Bending Twisting Stretching 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Attract Repel Pulley Lift Lower 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Conductors Insulators Circuits (series) Lamp / buzzer / switch / cell / battery 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Gravity Friction Air / water resistance Levers. Pulleys Gears 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Cells Voltage Circuit diagram Electrical circuit components Volume & brightness
	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> To know how to sort objects into groups. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know the name of the materials an object is made from. Know about the properties of everyday materials. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know how materials can be changed by squashing, bending, twisting and stretching. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know about and describe how objects move on different surfaces. Know how a simple pulley works and use to on to lift an object. Know how some forces require contact and some do not, giving examples. Know about and explain how magnets attract and repel Predict whether magnets will attract or repel and give a reason. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Identify and name appliances that require electricity to function. Construct a series circuit. Identify and name the components in a series circuit (including cells, wires, bulbs, switches and buzzers). Predict and test whether a lamp will light within a circuit. Know the function of a switch. Know the difference between a conductor and an insulator; giving examples of each. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know what gravity is and its impact on our lives. Identify and know the effect of air and water resistance. Identify and know the effect of friction. Explain how levers, pulleys and gears allow a smaller force to have a greater effect. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Compare and give reasons for why components work and do not work in a circuit. Draw circuit diagrams using correct symbols. Know how the number and voltage of cells in a circuit links to the brightness of a lamp or the volume of a buzzer.

An understanding of the natural world and seasons supports development of the concepts of light and earth & space. Materials work is focused on transparent / translucent / opaque.							
	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Term 5	<p>Explore the natural world around them</p> <p>Describe what they see, hear and feel whilst outside</p> <p>Recognise some environments that are different to the one in which they live</p> <p>Understanding the effect of changing seasons on the natural world around them</p> <p>Working Scientifically Make simple observations and say / describe what they have seen</p>	<p>Seasonal Change</p> <ul style="list-style-type: none"> The four seasons Seasonal weather <p>Working Scientifically Make observations of the weather over time</p>	<p>Everyday Materials</p> <ul style="list-style-type: none"> Compare the use of different materials Compare movement on different surfaces <p>Working Scientifically Compare pulling force needed for different surfaces</p>	<p>Light</p> <ul style="list-style-type: none"> Reflections Shadows <p>Working Scientifically Ask questions like: Why do shadows change during the day? Why does the moon appear as different shapes in the night sky?</p> <p>Observe at what time of day a shadow is likely to be at its longest and shortest</p> <p>Use research to find out how reflection can help us see things that are around the corner</p> <p>Be confident to stand in front of others and explain what has been found out, for example about how the moon changes shape</p>	<p>Sound</p> <ul style="list-style-type: none"> How sounds are made Sound vibrations Pitch and Volume <p>Working Scientifically Ask questions such as: What do we mean by 'pitch' when it comes to sound?</p> <p>Set up a fair test with more than one variable e.g. using different materials to cut out sound</p>	<p>Earth and Space</p> <ul style="list-style-type: none"> Movement of the Earth and the planets Movement of the Moon Night and day <p>Working Scientifically Using balls to represent sun / moon / Earth and torches – EXPLAIN how the moon appears to change shape and / or eclipses</p>	<p>Light</p> <ul style="list-style-type: none"> How light travels Reflection Ray models of light <p>Working Scientifically Know which type of investigation is needed to suit particular scientific enquiry e.g. looking at the relationship between pulse and exercise</p>
	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Build on from Term 3 that focussed on plants. What is different in the world now and what can be seen (compared to last season) 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> To use what they have already learnt from EYFS to explain the world around us, in greater detail. Seasonal changes – what's different? 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Use knowledge gained from Term 4 to identify specific materials that might / might not be best suited for something. Explain using terminology. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> First time light is met formally – but builds on EYFS / KS1 work on natural world / seasons plants Lays the concepts for Y5 Night & day and Y6 light units 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Stand-alone unit sound is only done once Children can learn key differences between light and sound. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Gravity is covered in term 4 of Y5. Use knowledge of light for day / night. Light source of the Sun, reflection of light from the Moon. 	<p><u>Why here and why now?</u></p> <ul style="list-style-type: none"> Builds on Year Three light. Use knowledge to explain how periscopes, binoculars and mirrors work. Importance of search lights and periscopes used on boats – linked to WW2 learning.
	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Weather Seasons Greenery 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Seasons: Autumn, Winter, Spring, Summer Weather Changes 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Squashing Bending Twisting Stretching Pulling 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Reflection Light Shadow Light Sources 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Vibration Pitch Volume Source Frequency 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Spherical Reflection Earth / sun / moon Shadow 	<p><u>Key Vocabulary?</u></p> <ul style="list-style-type: none"> Transparent, translucent, opaque. Light sources. Straight line
	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> To know what can be found in a school environment (indoors / outdoors). To know where to find certain objects. 	<p><u>Core Knowledge</u></p> <p>Name the seasons and know about the type of weather in each season</p>	<p><u>Core Knowledge</u></p> <p>Know why a material might or might not be used for a specific job</p>	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know that dark is the absence of light. Know that light is needed to see and is reflected from a surface. Know and demonstrate how a shadow is formed and explain how a shadow changes shape. Know about the danger of direct sunlight and describe how to keep protected. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know how sound is made, associating some of them with vibrating. Know how sound travels from a source to our ears. Know the correlation between pitch and the object producing a sound. Know the correlation between the volume of a sound and the strength of the vibrations that produced it. Know what happens to a sound as it travels away from its source. 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know about and explain the movement of the Earth and other planets relative to the Sun. Know about and explain the movement of the Moon relative to the Earth. Know and demonstrate how night and day are created. Describe the Sun, Earth and Moon (using the term spherical). 	<p><u>Core Knowledge</u></p> <ul style="list-style-type: none"> Know how light travels. Know and demonstrate how we see objects. Know why shadows have the same shape as the object that casts them. Know how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.

We develop the scientific method from simple observation through the cycle of planning / observing / analysing / evaluating to an understanding of the empirical method of acquiring knowledge that has supported the development of science

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Term 6	<p>Explore the natural world around them</p> <p>Describe what they see, hear and feel whilst outside</p> <p>Recognise some environments that are different to the one in which they live</p> <p>Understanding the effect of changing seasons on the natural world around them</p> <p>Working Scientifically Make simple observations and say / describe what they have seen</p>	<p>Working Scientifically</p> <p>Ask questions such as:</p> <ul style="list-style-type: none"> Why are flowers different colours? Why do some animals eat meat and others do not? <p>Set up a test to see which materials keeps things warmest, know if the test has been successful and can say what has been learned</p> <p>Explain to someone what has been learned from an investigation they have been involved with and draw conclusions from the answers to the questions asked</p> <p>Measures (within Year 1 mathematical limits) to help find out more about the investigations undertaken</p>	<p>Working Scientifically</p> <p>Ask questions such as:</p> <p>Why do some trees lose their leaves in Autumn and others do not? How long are roots of tall trees? Why do some animals have underground habitats?</p> <p>Use equipment such as thermometers and rain gauges to help observe changes to local environment as the year progresses</p> <p>Use microscopes to find out more about small creatures and plants</p> <p>Know how to set up a fair test and do so when finding out about how seeds grow best</p> <p>Classify or group things according to a given criteria, e.g. deciduous and coniferous trees</p> <p>Draw conclusions from fair tests and explain what has been found out</p> <p>Use measures (within Year 2 mathematical limits) to help find out more about the investigations they are engaged with</p>	<p>Working Scientifically</p> <p>A great deal will have been covered in the 5 terms above, the following are areas to cover (either in the above or as a “stand alone” investigation in term 6 to draw “working scientifically together”)</p> <p>Measure carefully (taking account of mathematical knowledge up to Year 3) and add to scientific learning</p> <p>Use a thermometer to measure temperature and know there are two main scales used to measure temperature</p> <p>Gather and record information using a chart, matrix or tally chart, depending on what is most sensible</p> <p>Use bar charts and other statistical tables (in line with Year 3 mathematics statistics) to record findings</p> <p>Know how to use a key to help understand information presented on a chart</p> <p>Present findings using written explanations and include diagrams when needed</p> <p>Make sense of findings and draw conclusions which help them to understand more about scientific information</p> <p>Amend predictions according to findings</p> <p>Be prepared to change ideas as a result of what has been found out during a scientific enquiry</p>	<p>Working Scientifically</p> <p>A great deal will have been covered in the 5 terms above, the following are areas to cover (either in the above or as a “stand alone” investigation in term 6 to draw “working scientifically together”)</p> <p>Carry out tests to see, for example, which of two instruments make the highest or lowest sounds and to see if a glass of ice weighs the same as a glass of water</p> <p>Measure carefully (taking account of mathematical knowledge up to Year 4) and add to scientific learning</p> <p>Gather and record information using a chart, matrix or tally chart, depending on what is most sensible</p> <p>Use bar charts and other statistical tables (in line with Year 4 mathematics statistics) to record findings</p> <p>Present findings using written explanations and include diagrams, when needed</p> <p>Write up findings using a planning, doing and evaluating process</p> <p>Make sense of findings and draw conclusions which helps them understand more about the scientific information that has been learned</p> <p>When making predictions there are plausible reasons as to why they have done so</p> <p>Able to amend predictions according to findings</p> <p>Prepared to change ideas as a result of what has been found out during a scientific enquiry</p>	<p>Working Scientifically</p> <p>Use all measurements as set out in Year 5 mathematics (measurement), including capacity and mass</p> <p>Use other scientific instruments as needed e.g. thermometer, rain gauge, spring scales (for measuring Newtons)</p> <p>Able to record data and present them in a range of ways including diagrams, labels, classification keys, tables, scatter graphs and bar and line graphs</p> <p>Make predictions based on information gleaned from investigations</p> <p>Create new investigations which take account of what has been learned previously</p> <p>Able to present information related to scientific enquiries in a range of ways including using IT such as power-point and iMovie</p> <p>Use diagrams, as and when necessary, to support writing</p> <p>Is evaluative when explaining findings from scientific enquiry</p> <p>Clear about what has been found out from recent enquiry and can relate this to other enquiries, where appropriate</p> <p>Their explanations set out clearly why something has happened and its possible impact on other things</p> <p>Able to give an example of something focused on when supporting a scientific theory e.g. how much easier it is to lift a heavy object using pulleys</p> <p>Keep an on-going record of new scientific words that they have come across for the first time</p> <p>Frequently carry out research when investigating a scientific principle or theory</p>	<p>Working Scientifically</p> <p>Know what the variables are in a given enquiry and can isolate each one when investigating</p> <p>Justify which variable has been isolated in scientific investigation</p> <p>Use all measurements as set out in Year 6 mathematics (measurement), including capacity, mass, ratio and proportion</p> <p>Able to record data and present them in a range of ways including diagrams, labels, classification keys, tables, scatter graphs and bar and line graphs</p> <p>Make accurate predictions based on information gleaned from their investigations and create new investigations as a result</p> <p>Able to present information related to scientific enquiries in a range of ways including using IT such as power-point, animation and iMovie</p> <p>Use a range of written methods to report findings, including focusing on the planning, doing and evaluating phases</p> <p>Clear about what has been found out from their enquiry and can relate this to others in class</p> <p>Explanations set out clearly why something has happened and its possible impact on other things</p> <p>Aware of the need to support conclusions with evidence</p> <p>Keep an on-going record of new scientific words that they have come across for the first time and use these regularly in future scientific write ups</p> <p>Use diagrams, as and when necessary, to support writing and be confident enough to present findings orally in front of the class</p> <p>Frequently carry out research when investigating a scientific principle or theory</p>
	<i>Why here and why now? Introduces the basic skills of observing & questioning</i>	<i>Why here and why now? Takes questioning & observation and moves to setting up a simple test / making measurements or observations and explaining what has been found out – answer to question</i>	<i>Why here and why now? Builds on Y1 and adds the concepts of fair test and using equipment to take measurements</i>	<i>Why here and why now? Builds on Y2 and adds accurate measurements / charts & tables / gathering and recording information – children start to write down their findings inc. use of diagrams, make & amend predictions – be willing to change ideas</i>	<i>Why here and why now? More structured approach to presenting & writing up findings – giving reasons for amending predictions Evaluations become key here</i>	<i>Why here and why now? Planning new investigations based on previous investigation. Providing explanations for why things have happened Use of technology / ICT</i>	<i>Why here and why now? Pulls all the work from EYFS to Y5 into formal scientific investigations using line graphs, average results, identifying rouge results, predictions based on scientific knowledge and amended predictions for new experiment</i>
	<u>Key Vocabulary?</u> Observation Question	<u>Key Vocabulary?</u> Question Observation / measurement	<u>Key Vocabulary?</u> Equipment Fair Test	<u>Key Vocabulary?</u> Charts & tables Prediction	<u>Key Vocabulary?</u> Evaluation	<u>Key Vocabulary?</u> Scientific Method formally met	<u>Key Vocabulary?</u>

	<i>Say / describe</i>	<i>Answer to question – explanation or conclusion</i>	<i>Classify / group</i>	<i>Diagrams Accuracy</i>	<i>Prediction – amend with reasons</i>	<i>Planning / observing / analysing / Evaluating = new plan</i>	<i>Children to record new scientific vocabulary / terminology encountered</i>
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