

Bledlow Ridge School - Science Medium Term Plan

| Year group | Science - Autumn First half term | | | | | |
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| Year R | Understanding the Natural World: Children will know: - <ul style="list-style-type: none"> names of body parts: shoulders, elbows, ankles, knees 5 senses This time of year is the beginning of Autumn | | | Provision & Context: <ul style="list-style-type: none"> Drawing family portraits & Guiseppe Arcimboldo - portraits Key text: FunnyBones, looking at and giving simple names to bones Learning Eric Carle's "From Head to Toe" Linking body parts and senses eg using eyes to see, skin to feel etc | | |
| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
| Year 1 | Everyday Materials Naming Materials – identify and naming different materials. | Objects and Materials – telling the difference between an object and the material it is made from. | Properties – describing the properties of everyday materials | Testing Properties – identifying which materials have certain properties. | Umbrella Investigation – testing materials for an experiment, discussing and recording findings. | Sorting – sorting objects by their properties. |
| Year 2 | Fighting fit! How do you keep safe in daily life? What do you need to stay healthy? | What foods should we eat? Classifying foods & designing a balanced lunch. | Retrieval & presenting results – letter to Fussy Freda advocating benefits of a balanced diet. | Benefits of activity Design a simple keep fit activity (Linked to PE - before & after observation) | Keeping clean – Do we really need to wash our hands? Set up and do Comparative Test (hands/bread) | |
| Year 3 | Amazing Bodies What would we need to survive? What do we need to eat to stay healthy? | Amazing Bodies How does an adventure stay healthy? Why do we have a skeleton? How do we plan? (Plan a bones and vinegar experiment) | Planning and doing Plan a comparative experiment – yr 3and yr6. Complete experiment – recording or showing a result | Skeletons Design a new vertebrate species Harvest | Pattern spotting Is there a pattern between long legs and height? | Amazing bodies Does our bodies affect how well we do something (planning) Completed next term over Tuesday mornings in addition to science. |
| Year 4 | Solid, Liquid, Gas Classify materials by observing properties | What happens to ice? To plan a fair test about melting ice | What makes a difference to how fast ice melts? To collect, present and interpret data (from fair test) | What are melting & freezing? To observe some materials change state when heated/cooled | How can we get it dry? Investigate evaporation by carrying out a fair test TAPS Plan focus | Where does rain come from? Use models to explore water cycle (evaporation/condensation) |

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| Year 5 | Plant & Animal Reproduction To look for evidence on school grounds | To confirm life cycle & reproduction in flowering plants (seeds) | To discover other ways plants can reproduce eg runners, bulbs, cuttings | To compare & contrast reproduction in insects & amphibians (secondary research) | To compare & contrast reproduction in mammals & birds (secondary research) | To present research on one species in written diary – TAPS record results focus |
| Year 6 | Light To identify & classify wide range of light sources | To model and draw diagrams to show how light enables us to see | To discover how Ibn Al Haytham contributed to understanding about light/sight (secondary research) | To look for patterns in the way shadows are created – plan & do a fair test TAPS record results focus | To review results from fair test & write conclusions | Pattern Seeking enquiry, focus on conclusions “Is the position of animals’ eyes related to their place in the food chain?” |

| Year group | Science - Autumn second half term | | | | | |
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| Year R | Understanding the Natural World: Children will: - <ul style="list-style-type: none"> • Make collections of natural materials to investigate and talk about • Understand affect of changing seasons on the natural world | | | Provision & Context: <ul style="list-style-type: none"> • Key text: Leaf Thief • Autumn walk to investigate materials, discover autumn habitats, observe leaves changing colour • Learn difference between evergreen and deciduous trees • Days of the week to recognise daily weather changes | | |
| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
| Year 1 | Season Changes (Autumn and Winter) Seasons – describe how the weather changes across the seasons, describe the day length in Autumn. | Seasonal Weather (Autumn) – observe and describe the weather in Autumn, collect and record data about the weather in Autumn. | Autumn Walk – identify the signs of Autumn. | Autumn to Winter – describe how the day length varies from Autumn to Winter, identify changes in trees and clothes from Autumn to Winter, | Seasonal Weather (Winter) – observe and describe the weather in Winter, collect and record data about the weather in Winter. | Animals and Winter – Explain how some animals adapt to Winter. |
| Year 2 | How do we make sure we stay clean? Retrieval & presenting results | What do babies need? | How have we changed? Potential visitor in class | How do we change throughout our lives? | Do older children have bigger hands? (pattern seeking) TAPS review focus | X |

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| Year 3 | Forces How can you make it start moving? | Forces What is making it move? | Forces How well can an object slide on different materials? Which materials are magnetic? | Forces What is making it move? SEASON OBSERVATIONS - Tree leaves | Forces What can magnets do Parts1 and 2. | Forces How strong are magnets? How do magnets affect each other? |
| Year 4 | Where does the food go? Learn about basic parts of digestive system. | What sort of teeth do we have? Learn about types of teeth and how differ for adults/children | What do animals eat? Interpret and create food chains | What do animal's teeth tell us? Use animal skulls to identify position in food chain | Why do we have different types of teeth? Identify teeth in humans and their functions | How can we look after our teeth? To recognise how to look after our teeth and explain its importance TAPS review focus |
| Year 5 | Get Sorted: Materials 1 classifying by material and property, different ways of recording classification – use solid, liquid & gases to encourage questions | 2 developing comparison/contrast of solids – recording results focus | 3 Fair test – viscosity of liquids (focus is planning: independent planning of what we'll keep the same) | 4 Exploring metals Primary: magnetic? Led – walkabout to apply properties vocabulary & I wonder why task Secondary: aluminium foil | 6 Fair Test: Bounce or not to bounce Focus on planning – more independence this time | 5 Plastics to consolidate, introduce separation by sieving & filtering; use real-life examples of plastic pollution. Children to be engineers and invent a machine to help environment |
| Year 6 | Introduce inheritance – visit of Guinea Pig brothers, identify features/characteristics > imagining features of parents Contrast environmental characteristic v inherited characteristic | Explore birds beaks as adaptation to diet & feeding behaviour Adaptation can be specialist/generalist (not a learnt skill, result of small changes over time) Fair test; simulated beaks | Read text “MOTH” Unpick adaptation & inheritance in the story – offspring may vary from parents, sometimes this is helpful, often irrelevant, sometimes unhelpful. Can lead to species changing as helpful features survive & breed better. | MOTH Retell scenes from story through collage making. Introduce impact of habitat change and factors affecting biodiversity | Use existing knowledge to interpret fossils – try to identify diet, feeding behaviour , habitat etc Fossils used to give evidence about ancient past environments TAPS task review focus Evidence Support/refute | Carbon cycle Link to water cycle, where Carbon is found in environment Carbon sinks Introduce humans adding changing where C is stored, by burning fossil fuels and crushing limestone for cement |

| Year group | Science – Spring - first half term | | | | | |
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| Year R | Understanding the Natural World: Children will know: - <ul style="list-style-type: none"> • How materials change when cooking, cooling and heating, including melting • Planets in the solar system • How to explore light, dark and shadows | | | | | |
| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
| Year 1 | Plants Making Observations – describe and compare plants, seeds and bulbs. | Parts of a Plant – name and compare the parts of plants. | Garden and Wild Plants – identify and name some common garden and wild plants. | Terrific Trees – identify and name some common trees. | Fruit and Vegetable Plants – name, sort and compare some common fruit and vegetable plants. | Comparing Plants – name and compare some common plants and trees. |
| Year 2 | Talk about Materials Feely bag, using senses and then vision Build descriptive vocabulary | Go on Materials Safari Hunt for materials around school, begin to discuss why they were chosen | Make a good Choice Some rubbish inventions – why would a chocolate teapot be no good? | Which is the stretchiest material? Comparative test Focus on measuring / recording results | TAPS waterproof investigation Plan focus | X |
| Year 3 | Can you see me? What do we need to see? Which is the shiniest? | Can you see me? How can we make things easier to see at night? | Can you see me? How can I make a shadow? Can you change the shape of a shadow? | Can you see me? How can you change the size of a shadow? | Can you see me? What makes the best sunglasses? Intro (pick up on bright day) | X |
| Year 4 | What do we know about sounds? To describe what we know about sounds | How are sounds made? To explore different ways of making sounds | How do sounds travel? To explore how sounds travel from the source to our ears | How can we make a sound louder or quieter? To explore how we can make instruments louder and quieter | How do sounds change as we move away from the source? To measure how the loudness of a sound changes as the distance from the source increases | How can we change the pitch of a plucked note? To explore the different notes that plucked bands make and discover how to alter the pitch of a sound TAPS Plan focus |

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| Year 5 | Introduce Forces & Measuring: (1) Card sort Use Newton meters – recall friction Record results and explain | Gravity & air resistance – comparing ideas of Galileo & Aristotle: (2/4) Cupcake holders/A4 paper Collecting evidence – recording results (time) | Gravity - craters TAPS Recording Results focus (model plan) | Water-resistance (4) Float v sink Clay bow shape test Supported child-led planning | Mechanisms: (8) Recall automator animals & expand to test - levers/gears Children to plan | |
| Year 6 | Reversible & Irreversible Changes Identify changes of state as reversible changes Dissolving in different contexts, recovery of solute via evaporation. Separation of mixtures using sieving/magnets | Real World Context: Timeline discovery how CO ₂ affected atmosphere Glacier photos (Obsv over time) Reading Map & Line graphs (reading data & presenting data in different ways) Ice melting in different temperatures (fair test) Compare affect of ice in water v next to water melting Climate stripes – communicating data, making own version wool wraps | | Sugar cube tower – fair test, TAPS task record data focus | Contrast reversible & irreversible changes. <ul style="list-style-type: none"> • Rusting • Burning • Acid/alkali recording results (observation over time) Copper coins in different materials & Cream to butter – set up longer observation over time | Wax exploration – identify reversible and irreversible changes through wax Candle rolling Making candles in moulds Weigh burning candle Make wax wraps Classify wax products |

| Year group | Science – Spring - second half term | | | | | |
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| Year R | Understanding the Natural World: Children will: - <ul style="list-style-type: none"> • Be able to identify some dinosaurs and know their names • Identify carnivores and herbivores • Discover the different dinosaur periods – Jurassic, Cretaceous, Triassic and Mesozoic | | | | | |
| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
| Year 1 | Seasonal Changes Winter to Spring – describe how the day length varies, identify changes in the trees and clothes from Winter to Spring. | Seasonal Weather (Spring) – observe and describe the weather in Spring, collect and record data about the weather in Spring. | Spring Walk – identify signs of Spring. | X | X | X |

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| Year 2 | How Materials Change? How many ways can you change the shape of a piece of paper without ripping or cutting it? Compare with another material Vocab – bend, twist, stretch, squash | | Context: look at home-made toys, link with Geography Reusing materials – have shapes been changed? How? Make your own ball from scrap paper, plastic bags, fabric scraps etc | | Observation over time Conclusion focus Make clay or fimo model, notice ways of changing shape before, compare before & after air dried | Show me what you have learnt writing activity – knowledge and application assessment |
| Year 3 | Rock detectives What different types of rock are there? Which rock is which? | Rock detectives How do rocks change over time? How is soil made? | Rock detectives Are all rocks as hard as one another? Are all rocks waterproof? Testing focus | Rock detectives How are rocks used around our school? Recording focus | Rock detectives What is a fossil anyway? Who is Mary Anning and how was she famous? | Rock detectives How are fossils formed? Make our own fossils from clay and pushing in impressions. |
| Year 4 | Can you light the bulb? To make and record electric circuits | How does a circuit work? To explain, using a model, how an electrical circuit works | Why doesn't it work? To identify and correct problems with circuits | What does a switch do? To describe what a switch does and how it works | What can we use instead of wires? To sort materials by testing for a property that makes them suited to replace a wire in a circuit | What types of materials conduct electricity? obtaining more evidence TAPS Review focus |
| Year 5 | Which materials are used in our school building and why? Recognise range of ways materials are used & what specific purposes | Which is the best carrier bag? Plan comparative/fair test. Collect evidence and make recommendations | Which is the best type of plate? Plan and carry out tests on variety of picnic plates | Can the same container keep cold things cold and hot things hot? Use evidence to explain how an insulated bag works | Mystery material Observe measure, describe and explain what happens when water is added to mystery material | Can you recommend a champion tape? TAPs task review focus |
| Year 6 | Heart & Circulation Evidence from life about what is inside human body - Activities to feel circulation TAPS task – Plan asking Q | Explore why blood is needed to circulate – functions & components “blood cocktail” | Name & describe blood vessels Build models of circulatory system | Impacts of exercise, diet, inherited disease sickle cell on heart function Investigation plan & do TAPS task review focus | Heart rate v weight of different animals Pattern seeking enquiry Focus on conclusions - explaining what results show, potential reasons | |

| Year group | Science – Summer - first half term | | | | | |
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| Year R | Understanding the Natural World: Children will: - <ul style="list-style-type: none"> Know that seeds can turn into plants and begin to understand how it takes time to grow fruit and vegetables Plant and grow a fruit/vegetable or herb and name simple parts of a plant | | | | | |
| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
| Year 1 | Animals Including Humans Observing Animals – identify and name some common animals. | Comparing Animals – Describe and compare the structure of a variety of common animals. | Animal Diets – identify, name and sort animals that are herbivores, carnivores and omnivores. | The Human Body – name and label parts of the human body. | Senses – name the five senses and perform simple tests to find out more about them. | Sorting Animals – Sort animals according to a criteria. |
| Year 2 | Growing plants from seeds and bulbs (planted onions sets earlier in year) Observing, describing and comparing seeds | Set up comparative test to investigate germination and seedling growth: Different combinations of light, warmth & water – think about how to record results – observation over time & comparison Establish needs of seeds and plants Notice different plants are adapted to different amounts of warmth, light, water | | | | |
| Year 3 | How does your garden grow? What do we know about plants? What do we know about leaves? | How does your garden grow? What happens if a plant lost its leaves? | How does your garden grow? Are all roots the same? Root watching experiment. | How does your garden grow? Where does the water go? Plants and moving colours experiment. | How does your garden grow? Why do plants need stems? Observe last week’s experiment. | How does your garden grow? Where do new plants come from? |
| Year 4 | Who are you? To identify pond/seashore animals using a key | Who lives here? To use yes/no questions to sort animals found in a water habitat | How are vertebrates grouped? To classify vertebrates into groups using their key characteristics | How are invertebrates grouped? To recognise characteristics of some of the main invertebrate groups | How can we classify trees by looking at their leaves? To make observations of leaves in order to classify them TAPS Record results focus | How can we classify plants by looking at their flowers? To make observations of flowers to classify and identify them |
| Year 5 | What is a lifecycle? Compare plant & animal life cycles Review reproduction | Mammal Lifecycle? Define mammals & describe lifecycle | Amphibian lifecycle? Define & describe | Insect lifecycles? Look at metamorphosis & other lifecycles | Bird Lifecycles? Define and describe | Becoming Zoologists Compare lifecycles TAPS task report & present findings |

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| Year 6 | Electricity Minimal equipment circuit challenge Safety & short circuits Classify materials as electrical conductors or insulators/ magnetic or non-magnetic (Carroll diagram) | Draw circuit diagrams using recognised symbols | Plan & do investigation to test impact of changing one component of circuit TAPS task plan focus | Present results and conclusions to class Compare brightness/loudness of devices relating to number/voltage of cells used in circuit. | Challenge: Flood Alarm for Himalayan villages – link with Rivers in Geography – problem solving enquiry |
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| Year group | Science – Summer - second half term | | | | | |
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| Year R | Understanding the Natural World: Children will: - <ul style="list-style-type: none"> Explore and talk about forces, including magnets, floating/sinking and stretching | | | | | |
| | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
| Year 1 | Seasonal Changes (Spring and Summer) Spring Summer – describe how day length varies from Spring to Summer, identify changes in the trees and clothes from Spring to Summer. | Seasonal Weather (Summer) – observe and describe the weather in Summer, collect and record data about the weather in Summer. | Staying Safe in Summer - explain how to stay safe in the sun. | X | X | X |
| Year 2 | What is living? Dead? Was never alive? | Where do living things live? What is a habitat? | Animal habitats | Plant habitats | Introducing food chains | X |
| Year 3 | How does your garden grow? What do flowers have in common? | How does your garden grow? What do bees do? PSHE link – introduction to reproduction terminology. | How does your garden grow? How are seeds dispersed? | How does your garden grow? Can plants survive without leaves? | How does your garden grow? Am I the perfect plant? | Space for Fiona’s garden to move some slots across or for lessons to double up. Two science lesson’s a week. |

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| Year 4 | What impact do humans have? To give examples of positive and negative ways in which humans change the environment | How can we find out about litter? To plan a litter survey | What types of litter are dropped locally? To carry out a litter survey, collecting and presenting data | Why does cleaning litter matter? To research and present information about the impact of litter on animals TAPS Record results focus | What happens when a food chain is broken? To demonstrate understanding of the potential human impact on food chains in a UK habitat | What is the impact of habitat destruction? Demonstrate an understanding of human impact on food chains and habitats in another part of the world |
| Year 5 | What's in Space? Describing solar system esp. sun, moon & Earth | How do planets move? Act our orbiting and rotating | How does sun appear to move in the sky? Obsv over time | How do we get night and day? | Look for patterns in data about planets Consolidate understanding | |
| Year 6 | Investigate how classification has changed over time Create time line Think about micro-organisms and different roles they play | Classify photos of animals, building tree, adding names & key features > inverts building on vertebrate K&U. Recognising more groups lower down levels, fewer but more similar members | Invertebrate group – research, look out especially for what group members have in common TAPS task Record data focus Present information | Plant classification Tree samples from school field identify families – very similar in certain features. Look at wider plant groups; how plants reproduce is big classifying marker (contrast in animals structure) Visit Resthaven – botanical drawing, notices changes from previous visit | Water use in the body Snacks and food choices Reading food labels – comparative test How body uses food | |