Bledlow Ridge School
Medium Term Plan

<table>
<tr><th>Year group</th><th colspan="6">Science
Autumn 2023 First half term</th></tr>
<tr><td>Reception</td><td colspan="3">Understanding the World – The Natural World:
I will know
- Children will know the names of body parts: shoulders, elbows, knees, ankles.
- Children will know the 5 senses.
- That this time of year is the beginning of Autumn.</td><td colspan="3">Provision and Context:
- Drawing family portraits
- Key text – funny bones, looking at bones and naming simple/key bones.
- Learning Eric Carle's 'From Head to Toe'.
- Giuseppe Arcimboldo - portraits
- The five senses - You use your eyes to see, your ears to hear, your nose to smell, your tongue to taste, and your skin to feel.</td></tr>
<tr><td></td><td>Week 1</td><td>Week 2</td><td>Week 3</td><td>Week 4</td><td>Week 5</td><td>Week 6</td></tr>
<tr><td>Year 1</td><td>Everyday Materials Naming Materials – identify and naming different materials.</td><td>Objects and Materials – telling the difference between an object and the material it is made from.</td><td>Properties – describing the properties of everyday materials</td><td>Testing Properties – identifying which materials have certain properties.</td><td>Umbrella Investigation – testing materials for an experiment, discussing and recording findings.</td><td>Sorting – sorting objects by their properties.</td></tr>
<tr><td rowspan="2">Year 2</td><td>Fighting fit!
What do we need for survival ?(water, food and air) What do you need to stay healthy?</td><td>What foods should we eat?
Classifying foods & designing a balanced lunch.</td><td colspan="2">Retrieval & presenting results
– letter to Fussy Freda
advocating benefits of a balanced diet.

(Use of English Lessons to plan & write letter)</td><td colspan="2">Benefits of activity</td></tr>
<tr><td colspan="2">Keeping clean – Do we really need to wash our hands?
Set up and do Comparative Test (hands/bread)</td><td colspan="4">Design a simple keep fit activity
(Linked to PE over 3 weeks & observation before & after)</td></tr>
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	food journal – do I eat a balanced meal? Categorising food groups and looking at class data.					
Year 3	**Amazing Bodies** What would we need to survive? What do we need to eat to stay healthy? ***SEASON OBSERVATIONS*** **What colour are berries (school)**	**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)
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 (Arabian Nights)** 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	To look for patterns in the way shadows are created – plan & do a fair test	To review results from fair test & write conclusions	Improve conclusions – using Pattern seeking enquiry Does the position of animals eyes relate to their place in the food chain?

			(secondary research) **(English – biography writing/legacy)**	TAPS record results focus		

Year group	Science Autumn 2023 Second half term					
Reception	**Understanding the World - The Natural World** - Children will make collections of natural materials to investigate and talk about. - Understand the effect of changing seasons on the natural world around them.			**Provision and Context:** - Key Text – The Leaf Thief - Autumn walk around local area to investigate materials, discover autumnal animal habitats, watch the colours of trees change - Learn the difference between evergreen and deciduous - Days of the week to see and recognise the 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 date 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 tress and clothes from Autumn to Winter,	**Seasonal Weather (Winter)** – observe and describe the weather in Winter, collect and record date about the weather in Winter.	**Animals and Winter –** Explain how some animals adapt in 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?**		**X**
	Do older children have bigger hands? (pattern seeking) TAPS review focus			**Do older children have ---------- children suggest things to investigate** **(reinforce previous investigation)**		
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*** **What colour are berries (school)**	**Forces** What can magnets do Pasrt1 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	2 developing comparison/contrast of solids – recording results focus	**3 Fair test – viscosity of liquids** **(focus is planning: independent planning**	**4 Exploring metals** **Primary: magnetic?** **Led – walkabout to apply properties**	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**

	solid, liquid & gases to encourage questions		**of what we'll keep the same)**	**vocabulary & I wonder why task** **Secondary: aluminium foil**		**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 Introduce impact of habitat change	**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.	(cross – curric /Art) MOTH Retell scenes from story through collage making.	**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 & climate change** – evidence from range of sources, growth in body of evidence, language of IPCC summaries, reading graphs. Impact on plants, animals, humans, landscape. (?Climate Change day)

Year group	**Science** **Spring 2023 First half term**
Reception	***Understanding the World – The Natural World*** - Children will know how materials change when cooking, cooling and heating. - Children will know how materials change when melting. - Children will investigate light, dark and shadows.

	The children will know the planets in the solar system					
	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	**Building up work to talk about material** Feely bag, using senses of touch & then vision Build descriptive science vocab	**Going on Material's Safari** – hunting for materials around school and begin to discuss reasons why they were chosen	**What makes a good choice?** Some rubbish inventions – why wouldn't a chocolate teapot be any good.	**Fair/Comparative test: which material is stretchiest?** (for multi-size costume) Focus measuring and recording results	**TAPS Waterproof investigation** – planning focus	
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? What do mirrors do?	**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?	
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
Year 5	**Introduce Forces & Measuring: (1)** Card sort Use Newton meters – recall friction Record results and explain	**Gravity & air resistance – comparing ideas of Galileo & Aristostle: (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	Sugar cube tower – fair test, TAPS task record data focus	Contrast reversible & irreversible changes. • Rusting • Burning • Acid/alkali recording results (observation over time) Copper coins in different materials – set up longer observation over time	Collecting data to find best combination of materials to create gas (planning)	Wax exploration – identify reversible and irreversible changes through wax Candle rolling Making candles in moulds Weigh burning candle Make wax wraps Classify wax products	Making new materials through irreversible changes Cream to butter Milk + vinegar baking

Year group	Science Spring 2023 Second half term					
Reception	***Understanding the World – The Natural World*** - The children will be able to identify some dinosaurs and know the name - They will be able to identify carnivores and herbivores - They will be discovering the different dinosaur periods; Jurassic, cretaceous and Triassic, Mesozoic					
	Week 1	***Week 2***	***Week 3***	***Week 4***	***Week 5***	***Week 6***
Year 1	**Seasonal Changes (Spring and Summer) Winter to Spring –** describe how the day length varies from Winter to Spring, 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**
Year 2	**How Materials Change?** How many ways can you change the shape of a piece of paper without ripping or cutting? Compare with one other chosen material. Review vocab – stretch, bend, twist, squash	**Context focus: look at home-made toys (Geography link)** Materials re-used to make something new how have the shapes been change? Make your own ball – scrap paper, plastic bags, fabric scraps		**Observation over time: conclusion focus** make fimo/clay model, notice ways of changing shape before, make something and compare when air dried. Shall I bend it? Stretch it? Squash it? Twist it?	**Show me what you've learnt writing activity – knowledge & application assessment.**	**X**

Year 3	**Rock detectives** What different types of rock are there? Which rock is which?	**Rock detectives** How are rocks used around our school? Recording focus	**Rock detectives** **Are all rocks as hard as one another?** **Are all rocks waterproof?** **Testing focus**	**Rock detectives** **Using mini-microscopes** How do rocks change over time? How is soil made?	**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?** To strengthen a conclusion about materials that are good conductors of electricity by obtaining more evidence TAPS Review focus
Year 5	**Which materials are used in our school building and why?** To recognise that materials are used in many different ways and for particular purposes within buildings.	**Which is the best carrier bag?** To plan a fair test to investigate different carrier bags and collect evidence to make recommendations regarding their use	**Which is the best type of plate?** To plan and carry out comparative tests to find out which material is best for picnic plates	**Can the same container keep cold things cold and hot things hot?** To use evidence from investigations to explain how a cool bag works as an insulator	**Mystery Material: What will happen if we add water to the material?** To observe, measure, describe and explain the changes that happen to a mystery material when water is added.	**Can you recommend a Champion Tape?** TAPS Review focus

Year 6	**Heart & Circulation** Review other systems. Evidence from life about what is inside human body - Activities to feel circulation TAPS task – Planning asking Questions	Heart rate v weight of different animals Pattern seeking enquiry	Name & describe blood vessels Build models of circulatory system	Explore why blood is needed to circulate – functions & components "blood cocktail"	(cross – curric/ English) Extended piece of writing "day in the life of a drop of blood" Impacts of exercise, diet, altitude, excitement/fear on heart function. Link back to inherited disease eg. sickle cell	Fair Test Investigation plan & do TAPS task review focus

Year group	**Science** **Summer 2023 First half term**					
Reception	***Understanding the World – The Natural World:*** - Children will know that seeds can turn into plants. Children will begin to understand how it takes time to grow fruit and vegetables. - Children will plant and grow a fruit/vegetable/herb - The children will 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 perfume simple tests to find out more about them.	**Sorting Animals –** Sort animals according to a criteria.

Year 2	Spring term catch up	Spring term catch up	**Apprentice Gardener:** How can we set up tests to answer questions about seeds? T asks questions about how to plant seeds "I wonder …..?" > (2/3) Demo planting seeds in clear bags to observe & small groups setting up different comparative tests – eg depth, orientation, position on /under soil. Start seed diaries.	**How do seeds change as they germinate?** Observe any changes since last week. Record. (2) Ch'n turn ideas/predictions into questions we can observe over coming weeks. (1) Observe range of seeds with magnifying glasses, describe, draw results.	**How can we tell if a plant is healthy? And how can we care for it?** (4) Observe further changes & record. (6) Show healthy and unhealthy bedding plants – describe, spot differences, what could be wrong? Small groups decide how to help unhealthy plants. Draw/ take photo – to see improvement over time	**TAPS – Do Recording changes over time Across unit – both sides of half term**
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	**How can we classify trees by looking at their leaves? (our changing world)** To make observations of	**How can we classify plants by looking at their flowers? (our changing world)** To make observations of

				some of the main invertebrate groups	leaves in order to classify them TAPS Record results focus	flowers that appear at different times of the year and to classify and identify them
Year 5	**What is a lifecycle?** To compare the life cycle of different animals.	**What do we know about the lifecycles of mammals?** To define what a mammal is and describe its life cycle.	**What do we know about the life cycles of amphibians?** To define an amphibian and describe its life cycle	**What do we know about the life cycles of insects?** To define what insects are and describe the different types of life cycle, including the process of metamorphosis	**What do we know about the life cycles or birds?** To define what a bird is and describe its life cycle.	**Becoming zoologists.** Use knowledge to describe the differences between life cycles of mammals, amphibians and bird. TAPS task- report and present findings.
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	(Cross-curric / DT) Fairground ride making	

Year group	Science Summer 2023 Second half term					
Reception	***Understanding the World – The Natural World*** Children will 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	How have seedlings and plants changed? (7) Observe changes in each enquiry, ch'n to feed back to class. Germination video. Add to seed diaries. Review what class has found out about growing from seed. Check Q from 2nd	We are Scientists. Enrichment Week – link Y2 work to focus scientists & their work/skills (5) Pattern Seeking Enquiry: do big seeds grow biggest plants? Measuring > producing bar chart (8) Work out & write conclusions from comparative test (first lesson) (9) How Expert are we? > write a guide to growing from seed/looking after plants		**What is your habitat? What is a habitat? (1) Walk in contrasting local area / school grounds eg. field, playground, hedge, woodland to observe different habitats & identify things you see as "living, once were living, never lived".**	What do animals eat in their habitat? (2) Use video (secondary resources) to find out about what animals in woodland find to eat. Introduce simple food chains – using The Gruffalo as a way in. Draw simple food chains, arrow showing	**Where can I live? (3) Use slideshow to review parts of a tree then look at where in an oak tree different animals live. Look at simple adaptations to where animals live. Classify animals by where they would live.**

	lesson, have we answered any/all? (EL4) Watch video "do plants need soil?"	well (Literacy focus, science content – use English lesson(		**TAPS – Record results, tally woodlice found (or birds seen etc)**	energy going to the eater	**Talk about why? What makes you think that?**
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.**
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						
Year 6	Investigate how classification has changed over time Create time line	Classify photos of animals, building tree, adding names & key features > inverts building on vertebrate K&U.	Invertebrate group – secondary research, look out especially for what group members have in common	(Cross-Curric / Geography) Chalk Streams officer visit classification of samples	Plant classification Tree samples from school field identify families – very similar in certain features.	Measuring in tree nursey, adding to data > growth rate patterns Botanical drawing identification

	Think about possible future changes - predict	Recognising more groups lower down eg levels, fewer but more similar members	TAPS task Record data focus Present information		Look at wider plant groups; how plants reproduce is big classifying marker (contrast in animals structure)	
Water use in the body	Snacks and food choices Reading food labels How body uses food	(cross-curric PSHE) Drug & lifestyle impact on bodies				