

Mount Pleasant Primary School

Science Curriculum



At Mount Pleasant Primary, we believe that every child is entitled to a high-quality science education that develops curiosity, deepens understanding of the natural world and prepares them to engage thoughtfully with an increasingly scientific and technological society. Through the CUSP Science curriculum, pupils develop a coherent understanding of biology, chemistry and physics whilst recognising the importance of science in explaining the world around them. Our curriculum is ambitious, inclusive and carefully sequenced to ensure that all pupils acquire the knowledge and understanding needed for future learning and life beyond primary school.

Our Science curriculum is built upon the principles of cumulative knowledge, where carefully selected content is deliberately sequenced to enable pupils to build secure schemas over time. Each unit has been designed to strengthen substantive knowledge—the scientific facts, concepts and principles that pupils need to know—alongside disciplinary knowledge, enabling children to understand how scientific knowledge is established, refined and communicated. The explicit teaching of the CUSP "Big Ideas" in science, alongside carefully planned retrieval practice and high-quality scientific vocabulary, ensures that pupils revisit and strengthen prior learning, make meaningful connections across units and retain knowledge in their long-term memory.

Working Scientifically is woven throughout the curriculum rather than taught in isolation. Pupils progressively develop the disciplinary knowledge needed to think and work as scientists by asking questions, making observations, identifying patterns, planning and carrying out enquiries, using evidence to draw conclusions and communicating their findings with increasing precision. Scientific enquiry is purposeful and carefully matched to the substantive knowledge being taught, ensuring that practical work deepens conceptual understanding rather than becoming an end in itself.

Every lesson follows a consistent structure that reduces cognitive load and enables all pupils to access ambitious scientific learning. Prior knowledge is routinely revisited, misconceptions are identified and addressed through responsive teaching, and opportunities for discussion encourage pupils to articulate their thinking using accurate scientific language. Assessment is used formatively throughout the learning process to inform teaching and secure pupils' understanding before new knowledge is introduced.

By the end of Year 6, pupils leave Mount Pleasant Primary with a secure and connected body of scientific knowledge, an understanding of the nature of science and how scientific knowledge is developed, and the confidence to question, investigate and reason scientifically. They are well prepared for the demands of secondary science and equipped with the curiosity and critical thinking skills needed to understand and contribute to the world around them.

Science Long Term Planning

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Explore the natural world around them, making observations and drawing pictures of animals and plants Exploring the school environment and grounds. Seasons Understanding changes in weather and the seasons— Autumn hunt, exploring the woodland	Seasons Understand some important processes and changes in the natural world around them, including the and changing states of matter. Changes in weather and the seasons— Winter Noticing frost and ice, exploring how to melt ice	Explore the natural world around them, making observations and drawing pictures of animals Night and Day time Nocturnal animals	Seasons Understanding changes in weather and the seasons— Spring Planting and growing Explore the natural world around them, making observations and drawing pictures of animals and plants Eggs and chicks (visiting nursery)	Explore the natural world around them, making observations and drawing pictures of animals and plants Caring for animals and the environment. Drawing pictures of flowers and animals. understanding different minibeasts and their habitats Planting	Seasons Understanding changes in weather and the seasons— Summer Planting—Growth and decay Explore the natural world around them, making observations and drawing pictures of animals and plants Sea creatures
Year	Everyday Materials	Animals, Including Humans Seasonal Change	Animals, Including Humans	Plants Seasonal Change	Plants	Animals, Including Humans Seasonal Change
Year 2	Revisit Yr1 Materials Materials	Animals including humans	Revisit Materials Introduce Living things and their habitats.	Revisit (Yr1) Plants Plants	Plants	Revisit Animals including humans Living things and their habitats
Year 3	Rocks	Introduce Animal including Humans	Plants	Forces and Magnets	Light	Revisit Yr2 Animals Revisit - Rocks
Year 4	Electricity	States of Matter	Living things and their Habitats	Animals, including Humans	Living things and their Habitats (revisit)	Sound

Year 5	Properties and changes of materials Everyday Materials	Earth and Space	Animals Including Humans	Living Things and their Habitats	Forces (end point- not covered again)	Revisit Living Things and their Habitats
Year 6	Introduce Evolution and Inheritance	Introduce Living Things and their Habitats	Revisit Yr4 Electricity and Introduce Yr6 Electricity	Animals including Humans (circulatory system)	Animals including Humans – water transportation	Light

Science Medium Term Planning (core curriculum)

Y1	Everyday Materials	Seasonal changes and weather	Animals, Including Humans (animals)	Plants including trees	Revisit Plants	Revisit Plants and Animals, Including Humans (animals including herbivores and carnivores)
Big Ideas	Biology	Biology	Chemistry	Biology	Biology	Biology
Disciplinary Knowledge	- Identify and classify animals. - Compare animal groups. - Observe features closely. - Use observations to answer questions.	- Observe seasonal changes over time. - Measure and record weather. - Identify patterns. - Present findings.	- Identify and classify materials. - Compare material properties. - Carry out simple tests. - Record observations.	- Identify and classify plants and trees. - Observe plant features closely. - Compare similarities and differences. - Observe changes over time.	- Recall and apply prior knowledge. - Identify and compare plants. - Observe plant features. - Use scientific vocabulary to explain observations.	- Identify and classify plants and animals. - Compare similarities and differences. - Explain findings using scientific vocabulary.
Learning Questions	- What is an animal? - What types of animals are there?	- What are the four seasons? - What's the weather like in	What are materials?	What are the parts of a plant?	What do I remember about plants?	How can we identify and classify different

	3. What is similar and what is different? 4. What does food tell us about an animal? 5. What makes me an animal? What senses do I have?	Autumn, Winter, Spring and Summer? 3. Why does day become night	2. What are things made of in school? 3. How can I describe materials? 4. Which materials are waterproof and which are not? 5. Which materials are transparent and which are opaque? What's the best material for the job? Why?	2. What are wild plants and where do you find them? 3. What are garden plants and where do you find them? 4. What makes a tree? 5. What types of tree are there? (Trees that live around my school) 6. What's the difference between trees?	2. What are the parts of a plant? 3. What are deciduous and evergreen trees?	groups of animals? 2. What can we find out about a chosen animal? 3. How can we identify and describe different plants?
Vocabulary	Blood, Senses Young, feather Fur, scales Mammal, amphibian Reptile, herbivore Carnivore, omnivore	Dawn, dusk, mild Rotate, soaked Weather, month Season, Spring Summer, Autumn Winter	Absorb, rough Smooth, waterproof Metal, plastic Materials, properties Flexible, transparent Opaque, physical	Bud, trunk Branch, bark Seed, wild Nutrients, stem Deciduous, evergreen	Bud, trunk Branch, bark Seed, wild Nutrients, stem Deciduous, evergreen	Blood. senses Young. feather Fur, scales Mammal, amphibian Reptile, herbivore Carnivore, omnivore

Y2	Use Of Everyday Materials	Animals including humans	Living things and their habitats.	Revisit: Plants Revisit: Animals Including Humans	Plants	Revisit: Living things and their habitats Revisit: Everyday materials
Big Ideas	Chemistry	Biology	Biology	Biology	Biology	Biology
Disciplinary Knowledge	- Identify and classify materials. - Compare material properties. - Carry out simple	- Observe growth and change. - Classify animals using observable features.	- Identify and classify living things. - Observe habitats and food chains. - Record observations.	- Observe and compare plants and animals. - Identify similarities and differences.	- Observe plant growth over time. - Carry out simple comparative tests. - Measure and record	- Identify and classify materials and living things. - Compare similarities and differences.

	comparative tests. • Record and use evidence to answer questions.	• Gather and record observations. • Use evidence to explain healthy choices.	• Identify patterns in nature.	• Use scientific vocabulary to explain observations.	changes. • Use evidence to explain plant needs.	• Explain ideas using scientific vocabulary.
Learning Questions	1. What are materials used for? Categorise and compare wood, metal, plastic and glass. 2. What are materials used for? Categorise and compare ceramics, rock, paper and card, and fabric. 3. What happens when we squash, bend, twist or stretch a material? 4. What's the right material for the job? 5. What's the most absorbent material? 6. Who invented waterproofing?	1. What is an animal? 2. How do animals change as they mature? 3. How do we change as we mature? 4. What do all animals need to stay alive? 5. Keeping healthy: why do we exercise? 6. Keeping healthy: why do we eat different types of food?	1. What is alive and what is not? 2. What do all living things have in common? 3. Where do plants and animals live? 4. What plants and animals live in our local environment? 5. What are food chains? How are they connected? Why do plants and animals need each other?	1. How do seeds and bulbs grow? 2. What do I know about animals, including humans? 3. What do plants need to thrive and be healthy?	1. How do seeds germinate and what happens? 2. What happens when bulbs sprout? 3. What do plants need to thrive and be healthy? 4. What can happen if plants don't get the things they need? 5. What do I notice about plants around the school? How are they healthy? How are they unhealthy? 6. Show what you know: How do seeds and bulbs grow? What do plants need to be healthy?	1. What is it made from? 2. Compare: what is alive, what is not alive and what has never been alive? 3. What materials do our pets have or need? Why is that?
Vocabulary	Artificial, brittle Extracted, fabric Manufactured Natural, Ceramic Durable, Inflexible Reflective, Rigid Translucent	Healthy, Survive Exercise, Heart Lungs, Muscles Hygiene, Larva Pupa, Vertebrates Invertebrates Metamorphosis	Thrive, Depend Producer, Consume Prey, Predator Oxygen, Nutrition Respiration, Sensitivity, Excretion Reproduction,	Wither, Dormant Mature, Bulb Anchor, Sustain Germination Perennial Carbon Dioxide Glucose, Clone	Wither, Dormant Mature, Bulb Anchor, Sustain Germination Perennial Carbon Dioxide Glucose, Clone	Artificial, Brittle Extracted, Fabric Manufactured Natural, Ceramic Durable, Inflexible Reflective, Rigid Translucent

Y3	Rocks	Animals Including Humans	Plants	Forces And Magnets	Light	Revisit Rocks Revisit Animals Including Humans
Big Ideas	Chemistry	Biology	Biology	Physics	Physics	Chemistry Biology
Disciplinary Knowledge	- Identify and classify rocks. - Compare rock properties. - Carry out simple comparative tests. - Use observations as evidence.	- Gather and interpret data. - Identify patterns in nutrition and health. - Use models and secondary sources. - Explain findings using evidence.	- Observe plant growth over time. - Carry out comparative investigations. - Record observations systematically. - Identify patterns and relationships.	- Plan and carry out comparative tests. - Measure and record results accurately. - Identify patterns from evidence. - Draw simple conclusions.	- Carry out comparative investigations. - Observe and measure changes. - Identify patterns in results. - Use evidence to explain observations.	- Compare properties. - Explain findings using evidence. - Interpret information from observations and secondary sources. - Identify patterns. - Communicate scientific ideas clearly.
Learning Questions	- How are rocks formed? - What types of rocks are there? - Can rocks change? - How can we test a rock to see if it is limestone or chalk? - Is soil just dirt? What makes soil? - How are fossils formed?	- What effect does the food we eat have? - Where is my skeleton and what does it do? - Where are my muscles and what do they do?	- What are the parts of a flowering plant? What do they do? - Do all plants need the same things to thrive and grow? - How do leaves make food for the plant? - How does water move through a plant? - What do flowers do?	- What are contact forces? - How do surfaces affect the motion of an object? - How does friction affect moving objects? - What is a non contact force? How is this different to a contact force? - How do magnets attract and repel?	- Do we need light to see things? - How are shadows formed? - What happens to the size of a shadow when the object moves closer to, or away from, the light source?	- How are rocks formed and what types are there? - How can rocks change? - How are fossils formed and how do we know? - What effect does the food we eat have? - Where is my skeleton and what does it do?

			6. What is pollination?	6. Which materials are magnetic?		3. Where are my muscles and what do they do?
Vocabulary	Cemented Compacted, Decay Prehistoric, Soil Transform, Fossil Igneous, Magma Metamorphic Minerals Sedimentary	Minerals, Skeleton Skull, Voluntary Involuntary, Nerves Biceps, Triceps Vertebrae, Vitamins Proteins Carbohydrates	Adapt, Essential Glucose, Transport Variety, Vital Transpiration Stoma, Pollination Stamen, Pistil Photosynthesis	Consequence, Contact Force, Attract North, South Magnet, Resistance Friction, Repel Pole, Magnetic field	Absence, Cast Impenetrable Reflect, Shadow Source, Constant Dependent, Illuminate Independent, Translucent, Variable	Cemented, Minerals Compacted, Decay Prehistoric, Soil Transform, Fossil Igneous, Magma Metamorphic Sedimentary

Y4	Electricity	States Of Matter	Living Things And Their Habitats	Animals Including Humans	Revisit: Living Things and Their Habitats	Sound
Big Ideas	Physics	Chemistry	Biology	Biology	Biology	Physics
Disciplinary Knowledge	- Construct and test simple circuits. - Carry out comparative investigations. - Record and interpret results. - Use evidence to explain findings.	- Observe changes over time. - Carry out comparative investigations. - Measure and record accurately. - Identify patterns in results.	- Identify and classify organisms. - Use and construct classification keys. - Gather evidence through observation. - Explain relationships within habitats.	- Use models and secondary sources. - Identify patterns in digestion and teeth. - Record observations. - Explain findings using evidence.	- Classify living things accurately. - Use classification keys. - Communicate scientific ideas clearly.	- Carry out comparative investigations. - Measure and record observations. - Identify patterns in sound. - Draw conclusions from evidence.
Learning Questions	- What appliances use electricity? What sort of power makes them work? - What are the components in a simple series circuit? - What are the effects of changing	- What is matter? What does 'state' mean? - What are solids, liquids and gases? - Melting: how do materials change state? - Evaporating: how do materials change state?	- What are the characteristics of living things? - What animals are vertebrates? - What animals are invertebrates? - What groups are plants classified in?	- What teeth do humans have? What do they do? - How does our mouth and teeth help digestion? What's the process? - Can teeth tell us what animals eat?	- What animals are vertebrates and invertebrates? - What groups are plants classified in? - What's a classification key and how do you use it?	- What is sound? - How does sound travel? - What is the pitch and loudness of sound?

	circuit components and batteries?	5. Condensing: how do materials change state? 6. How do materials change their state of matter?	5. What is classification? How do I use a key? 6. What happens if the environment in a habitat changes?			
Vocabulary	Associate, Identify Portable, Effect Appliance, Series Component Insulator Conductor, Circuit Hypothesis, Variable	Permanent, Particle Solid, Liquid Gas, Vapour Evaporate, Volume Condense, Melt Matter, State	Classification, Environment Interdependence, Interact Beneficial, Hierarchy Vertebrate, Invertebrate Biotic, Ecosystem Species, Niche	Expel, Compact Digestion, Acid Stomach, Intestines Incisor, Canine Molar, Enzyme Saliva, Peristalsis	Classification, Environment Interdependence, Interact Beneficial, Hierarchy Vertebrate, Invertebrate Biotic, Ecosystem Species, Niche	Produce, Property Source, Frequent Regular, Affect Vibrate, Pitch Volume, Medium Vacuum Sound Wave

Y5	Properties And Changes of Materials	Earth and Space	Animals Including Humans	Living Things and Their Habitats	Forces	Revisit: Living Things and Their Habitats
Big Ideas	Chemistry	Physics	Biology	Biology	Physics	Biology
Disciplinary Knowledge	- Plan and carry out comparative investigations. - Observe and measure changes accurately. - Record results systematically. - Use evidence to explain physical and chemical changes.	- Use models and secondary sources. - Observe and identify patterns. - Interpret scientific evidence. - Communicate scientific explanations.	- Observe changes over time. - Interpret data and evidence. - Compare life stages. - Explain patterns using scientific knowledge.	- Compare life cycles. - Use evidence from observations and research. - Identify patterns and similarities. - Communicate scientific explanations.	- Plan fair tests and comparative investigations. - Measure and record accurately. - Interpret results. - Draw conclusions using evidence.	- Recall and apply prior knowledge. - Compare life cycles and reproduction. - Interpret evidence. - Explain scientific ideas using correct vocabulary.
Learning Questions	1. What properties do materials have? How do we use them?	1. What are the planets in our solar system? 2. How does our view of the Moon	1. What is the human timeline? 2. How do we change into adults?	1. Life cycle differences what's the difference between a	1. When is friction helpful and when is it not? 2. What's the effect of air resistance?	1. What's the difference between an insect and an amphibian?

	2. What is a solution and what is a mixture? 3. How can we separate materials from a mixture? 4. How can we separate materials from a solution? 5. What changes are reversible? 6. What changes are irreversible?	change in a lunar month? 3. Why does the rotation of Earth result in night and day? 4. Why is the Earth's tilt (axis) responsible for the seasons? 5. What you know about Earth and Space?	3. How does human and animal lifespan compare?	mammal and an amphibian? 2. What's the difference between an insect and a bird? 3. What is similar and what is different between the life cycles of a mammal, an insect, an amphibian and a bird? 4. Who was Maria Merion and what did she do? 5. How do living things reproduce? 6. What's the life process of reproduction?	3. What's the effect of water resistance? 4. Who was Galileo Galilei? 5. How do levers help us? 6. How do pulleys and gears help us?	2. What is similar and what is different between the life cycles of an insect and an amphibian? 3. What's the process of reproduction?
Vocabulary	Property, Particle Separate, Combine Recover, Comparative Atom, Molecule Chemical change Physical change Reversible, Reaction	Luminous Phenomenon Attraction Approximately Relative, Apparent Orbit, Crescent Axis, Gravitational Waxing, Waning	Development Diverse, Unique Generation Mature, Equipped Adolescence Puberty, Gestation Embryo, Foetus Womb	Deduce, Process Re-form, Transform Adolescence Contrast, Embryo Sexual, Incubate Metamorphosis Biochemical Fertilisation	Opposite, Reaction Advantage, Displace, Weight Mass, Pulley Gear, Pivot Fulcrum, Lever Upthrust	Deduce, Process Re-form, Transform Adolescence, Contrast Embryo, Sexual Metamorphosis Incubate, Biochemical Fertilisation

Y6	Evolution And Inheritance	Living Things and Their Habitats	Electricity	Animals Including Systems	Animals Including Systems – Water transportation	Light
Big Ideas	Biology	Biology	Physics	Biology	Biology	Physics

Disciplinary Knowledge	• Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute arguments. • Present findings in written form, displays and other presentation	• Identify and classify organisms. • Use and construct classification keys. • Gather evidence through observation. • Use evidence from observations and research. • Identify patterns and similarities. • Communicate scientific explanations.	• Construct and test circuits. • Carry out comparative investigations. • Record and interpret results. • Use evidence to explain findings.	• Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. • Use test results to make predictions to set up further comparative and fair tests	• Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions. • Present findings in written form, displays and other presentations. • Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.	• Plan enquiries, including recognising and controlling variables where necessary. • Record and interpret results. • Use evidence to explain findings.
Learning Questions	1. How have living things changed over time? How do we know? 2. How has life evolved over time? 3. What is DNA and what does it do? 4. Are all offspring identical to their parents? 5. What evidence did they share to argue the case for evolution?	1. Who was the scientist Carl Linnaeus and what did he do? 2. How do we classify vertebrates? 3. How do we classify invertebrates we know? 4. How do we classify invertebrates we don't know?	1. What is electricity? How does it work? 2. What are the components in a series circuit? 3. What are the effects and consequences of changing circuit components and batteries?	1. What is blood made of and why do we need it 2. Why do our bodies need nutrients and how are they transported? 3. What is our circulatory system? 4. What is our heart like inside? How does it work? 5. Who influenced what we know about our	1. Circulation and digestion: how are these two systems connected? 2. Where are the kidneys and what do they do? 3. How do kidneys keep us healthy?	1. How does light travel? 2. What colour is light made of? 3. How does light help us to see objects? 4. What surfaces make the best reflectors? 5. Why do we see objects as a particular colour? 6. What happens to the appearance of

	6. How have animals adapted and evolved to suit their environment?	(Sponges, Jellyfish and Flatworms) 5. What animals can I classify? 6. What animals and plants exist in my local environment?		circulatory system? 6. What can we do to keep healthy? 7. Present and explain what we know about the circulatory system, nutrients and keeping healthy		objects when placed in water?
Vocabulary	Characteristics Adaptation, Acquire Theory, Modify Generation, Evolve Survival, Species Clone, Inherit fossil	Characteristics Interdependence Specific, Categorise Primitive, Hierarchy Fungus, Arthropod Taxonomy, Kingdom Phylum, genus	Component, Systematic, Represent Consequence, Source, Generate Proton, Neutron Electron, Terminal Series Potential difference	Cell, Chamber System, Circulation Vessel, Clot, Plasma, Platelet, artery Capillary, Vein Ventricle	Filter, Substance Expel, Function Regulate, Transform Kidney, Bladder Urine, Excretion Toxin, Nutrient	Component, Source Consequence Systematic, Represent Generate, Proton Neutron, Electron Terminal, Series voltage