

MJS SCIENCE Medium Term Plan Cycle 1 - Mixed Year Groups

2021-22	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Yr. 5 & 6	Physics	Chemistry	Physics	Physics	Biology	Biology
Y5 pos.	Earth & Space	Properties and changes of materials	Forces	Forces	Living things and their habitats	Animals, inc. humans
Key Curriculum Content	• The Earth • The Moon • The Sun • The Solar System planets • Movement • Night and day	• Compare & group materials • Dissolving & reversible changes • Separating mixtures • Change that produces new materials	• Gravity • Air resistance • Water resistance	• Friction • Levers, pulleys and gears	• Animal – different life cycles • Reproduction in some plants and animals	• Changes as humans develop to old age
Knowledge and Skills	○ Know and describe the movement of the Earth, and other planets, relative to the Sun in the solar system ○ Know about the movement of the Moon relative to the Earth ○ Describe the Sun, Earth and Moon as approximately spherical bodies ○ Explain day & night using knowledge about Earth's rotation.	○ Know how to compare & group everyday materials based on their properties, inc. hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets ○ Know that some materials will dissolve in liquid to form a solution, ○ Describe how to recover a substance from a solution ○ Use knowledge of solids, liquids and gases to decide how	○ Know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth & the falling object ○ Find out how scientists e.g. Newton and Galileo helped to develop the theory of gravitation ○ Identify the effects of air & water resistance	○ Identify the effects of friction, that act between moving surfaces ○ Understand that force and motion can be transferred through mechanical devices such as gears, pulleys, levers & springs allowing a small force to have a greater effect	○ Identify the differences in the life cycles of a mammal, an amphibian, an insect and a bird ○ Describe the life process of reproduction in some plants and animals	○ Describe the changes as humans develop from birth to old age ○ Know about the changes experienced in puberty

		mixtures might be separated (filtered, sieved and evaporated) ○ Know the reasons, for the uses of everyday materials, including metals, wood and plastic (based on evidence from comparative and fair tests) ○ Identify that dissolving, mixing and changes of state are reversible changes ○ Know that some changes result in the formation of new materials, and that this kind of change is not usually reversible				
Key Questions	○ Can you explain day and night? ○ What is our solar system? How does it work? ○ What is a moon? ○ How has our understanding of the solar system changed over time? ○ How do time zones work?	○ What are reversible and irreversible changes? ○ Which material is best for this job? ○ How do chemists create new materials? ○ How do chemical changes impact on our lives? ○ What did Ruth Benerito and Spencer Silver achieve?	○ What happens when objects fall? ○ What makes things begin to move, get faster or slow down? ○ How does air and water resistance affect falling objects? ○ How did Galileo Galileo and Isaac Newton help develop the theory of gravitation?	○ How does friction work? ○ How do levers, pulleys and simple machines work?	○ How are life cycles similar or different? ○ How do life cycles of living things change? ○ What have David Attenborough and Jane Goodall achieved? ○ What are the different types of reproduction?	○ What happens in puberty? ○ How are gestation periods different for different living things including humans?

		○ What are polymers, super-sticky and super-thin materials?				
2021-22	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Yr. 3 & 4	Physics	Biology	Biology	Physics	Chemistry	Biology
Y3 pos.	Light	Forces and magnets	Plants	Plants	Rocks	Animals, inc. humans
Key Curriculum Content	• Need for light to see • How shadows are formed - Size of shadows	• Compare different surfaces • Magnets	• Life cycle of plants	• Function - including how water is transported	• Group different rocks • How they are formed • Fossils	• Need for the right amount of nutrition • Skeletons • Muscles •
Knowledge and Skills	○ Know that they need light in order to see things ○ Know that dark is the absence of light ○ Identify that light is reflected from surfaces ○ Know that light from the sun can be dangerous and that there are ways to protect their eyes ○ Know that shadows are formed when the light from a light	○ Identify how things move on different surfaces ○ Know some forces need contact between objects, but magnetic forces can act at a distance ○ Identify how magnets attract or repel each other or some materials and not others	○ Identify and describe the functions of different parts of flowering plants ○ Know the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) ○ Understand variety from plant to plant	○ Identify the way in which water's transported within plants ○ Know the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	○ Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties ○ Describe (in simple terms) how fossils are formed	Know that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat Know that humans and some other

	source is blocked by an opaque object Find patterns in the way that the size of shadows change	- Compare and group everyday materials based on if they're attracted to a magnet - Know magnetic materials - Know magnets have two poles and explore if they'll attract or repel each other			when things that have lived are trapped within rock Know that soils are made from rocks and organic matter.	animals have skeletons and muscles for support, protection and movement
Key Questions	- What happens when light reflects off a mirror? - How does light behave? - Why is it important to protect our eyes from bright lights? - How are shadows formed? Why do they change?	- How do magnetic forces act? - How do we use magnets? How else could we use them? - How do objects move differently with magnets? - Which magnet is strongest? - Which materials are magnetic?	- How do plants grow? - What is the job of a particular plant part? - What speeds up plant growth?	- How is water transported in plants? - How are seeds formed? - How are seeds dispersed? - What patterns can you see?	- Can you classify this rock? - How and why might rocks change over time? - What can you see in these rocks (fossils)? - How is soil formed? - How can soils be different?	What are our main body parts? How could we group animals? How do these animals move? How can humans stay healthy?