Year Group 3	Light (Autumn Term 1)	Plants (Autumn Term 2)	Rocks (Spring Term 1)	Forces and Magnets (Spring Term 2)	Animals including humans Skeletal & Muscular (Summer Term 1 & 2)
Year 3 and 4 Year A	Johannes Kepler I can recognise that we need light in order to see things and that dark is the absence of light. I can notice that light is reflected from surfaces. I can recognise that light from the sun can be dangerous and that there are ways to protect our eyes. I can recognise that shadows are formed when the light from a light source is blocked by an opaque object. I can find patterns in the way the size of shadows change. **Art** **Maths**	George Washington Carver I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. I can explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. I can investigate the way in which water is transported within plants. I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. **Forest schools** **DT** **PHSE**	William Smith Mary Anning I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. I can describe in simple terms how fossils are formed when things that have lived are trapped within rock. I can recognise that soils are made from rocks and organic matter. **History** **Geography**	Charles Duffay I can compare how things move on different surfaces. I can notice that some forces need contact between two objects, but magnetic forces can act at a distance. I can observe how magnets attract or repel each other and attract some materials and not others. I can compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials. I can describe magnets as having two poles. I can predict whether two magnets will attract or repel each other, depending on which poles are facing.	Marie Curie Rosalind Franklin I can identify 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. I can identify that humans and some other animals have skeletons and muscles for support, protection and movement. **PHSE** **PE**

				DT	

Science skills mapped	I talk about links between cause and effect and (with help) pose a relevant fair test question. I plan a fair test and decide what data to collect. I decide what equipment to use to make observations. I make records using tables. I draw simple conclusions and answer questions from my fair tests, make predictions for new values and raise further questions. I communicate and explain simple causal relationships using scientific ideas. I suggest ways that I can improve my fair tests.	I talk about things changing and decide when questions can be answered by observing over time. I decide what observations to make, how often a what equipment to use. I make records using tables, bar charts or labelled diagrams I draw simple conclusions and answer questions using the changes I observed, make predictions for new values raise further questions. I communicate the changes using scientific ideas. I suggest improvements to the way I observe. I talk about links between cause and effect and (with help) pose a relevant fair test question.	I talk about things that can be grouped and decide when questions can be answered by sorting and classifying. I talk about what criteria I will use to sort and classify things. I decide what equipment to use to identify and classify things. Carry out simple tests to sort and classify according to properties or behaviour. Use Carroll diagrams, Venn diagrams and more complex tables to sort things. I draw simple conclusions and answer questions about the	I talk about things that can be grouped and decide when questions can be answered by sorting and classifying. I talk about what criteria I will use to sort and classify things. I decide what equipment to use to identify and classify things. Carry out simple tests to sort and classify according to properties or behaviour. I draw simple conclusions and answer questions about things the t I have sorted and classified. I communicate the similarities and differences I identified using scientific ideas. Suggest improvements to the way I sort and identify things. I talk about where patterns might be found and decide when by	I talk about how things are and the wat they work and decide when questions can be answered by research using secondary sources. Use information sources to find the information I need Record what I found out in my own words. Present information in different ways. I draw simple conclusions and answer questions from what I found out, and raise further questions. I communicate what the information and data means using scientific idea I suggest ways to improve how I find out things.

		I plan a fair test and decide what data to collect.	things I have sorted r an classified. d I communicate the similarities and differenced I identified using scientific ideas.	questions can be investigated to pattern seeking. make I decide on which sets of data collect, what observations to and what equipment to use.	
		I decide what equipment to use to make observations. I can select and use a range of equipment accurately to collect data using standard units I draw simple conclusions and answer questions from my fair tests, make predictions for new values and raise further questions. I communicate and explain simple causal relationships using scientific ideas. I suggest ways that I can improve my fair tests.	Suggest improvements to the way I sort and identify things.	I make records using tables, bar charts or simple scatter graphs. I draw simple conclusions ad answer questions about simple patterns between two sets of data and raise further questions. I communicate the patterns usi ng scientific ideas. I suggest ed improvements to the way I loo for patterns.	

Investigation type focus	Comparative and fair testing **How does the distance between the shadow puppet and the screen affect the size of the shadow?**	Observing over time **What happens to celery when it is left in a glass of coloured water?** Comparative and fair testin ვ	Identifying, classifying and grouping **Can you use the identification key to fi out the name of each the rocks in your collection?** **nd** **of**	Identifying, classifying and grouping **Which materials are magnetic?** **Does the size and shape of a magnet affect how strong it is?**	Pattern Seeking **Do male humans have larger skulls than female humans?**

Notes and guidance (non statutory) The table below contains notes and guidance for each science topic for your year group. These have come from the National Curriculum and might help when planning lessons. This should also help with the progression of learning throughout the school and stop year groups from teaching the same thing twice.

Plants
-Pupils should be introduced to the relationship between structure and function: the idea that every part has a job to do. They should explore questions that focus on the role of the roots and stem in nutrition and support, leaves for nutrition and flowers for reproduction. -Note: pupils can be introduced to the idea that plants can make their own food, but at this stage they do not need to understand how this happens. -Pupils might work scientifically by: comparing the effect of different factors on plant growth, for example, the amount of light, the amount of fertiliser; discovering how seeds are formed by observing the different stages of plant life cycles over a period of time; looking for patterns in the structure of fruits that relate to how the seeds are dispersed. They might observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.
Animals including humans
-Pupils should continue to learn about the importance of nutrition and should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions. -Pupils might work scientifically by: identifying and grouping animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons. They might compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us healthy, and design meals based on what they find out.
Rocks

-Linked with work in geography, pupils should explore different kinds of rocks and soils, including those in the local environment.
-Pupils might work scientifically by: observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time; using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them. Pupils might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed. Pupils could explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water. They can raise and answer questions about the way soils are formed.

Light

-Pupils should explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves. They should think about why it is important to protect their eyes from bright lights. They should look for, and measure, shadows, and find out how they are formed and what might cause the shadows to change.
-Note: pupils should be warned that it is not safe to look directly at the sun, even when wearing dark glasses.
-Pupils might work scientifically by: looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.

Forces and magnets

-Pupils should observe that magnetic forces can act without direct contact, unlike most forces, where direct contact is necessary (for example, opening a door, pushing a swing). They should explore the behaviour and everyday uses of different magnets (for example, bar, ring, button and horseshoe).

-Pupils might work scientifically by: comparing how different things move and grouping them; raising questions and carrying out tests to find out how far things move on different surfaces, and gathering and recording data to find answers to their questions; exploring the strengths of different magnets and finding a fair way to compare them; sorting materials into those that are magnetic and those that are not; looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another; identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.