

Science Knowledge Organiser

	Year 3	Term: Autumn 1	Topic: Gods and Mortals	Area of Science:
Prior substantive knowledge	Substantive knowledge taught		Disciplinary knowledge*	
	No Science taught			
National curriculum objective for substantive knowledge				
Vocabulary				
			Suggested experiments covered and questions	

*For previous and post disciplinary knowledge see Disciplinary knowledge progression document. Please note this is also a national curriculum objective.

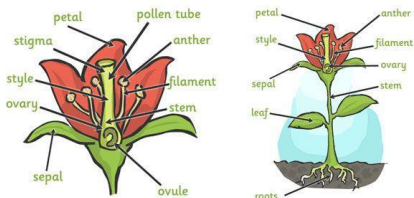
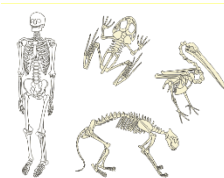
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Science Knowledge Organiser

	Year 3	Term: Spring 1	Topic: Predator	Area of Science: Rocks / Animals
Prior substantive knowledge		Substantive knowledge taught		Disciplinary knowledge*
Year 3 - Scrumdiddly-umptious – What plants need to grow. Year 2 – Wiggle and crawl – Plant parts Year 1 – Moon zoom – materials - Rock		Rocks: Fossils are remains from plants and animals from millions of years ago. Plants: The root holds the plant to the ground and keeps it upright. The roots store food for the plant. The stem of a plant carries water and nutrients to different parts of a plant. The leaves of a plant produce food for the plants through a process called photosynthesis .		Working Scientifically • Gather, record and use data in a variety of ways to answer a simple question. • Draw a simple conclusion based on evidence from an enquiry or observation. • Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts
National curriculum objective for substantive knowledge		 Flowers need water, air, light and nutrients from soil in able to grow. Plants grow towards sunlight. Animals: All food chains begin with a plant. This is called a producer. An example of the beginning of a food chain is algae. Animals and humans receive their nutrients from the food they eat. Humans and animals need specific food in order to survive. For example, humans need to eat a combination of protein, carbohydrates, fats, fibre and dairy in order to survive. Animals, like humans, have skeletons and muscles. Skeletons and muscles allow us to move properly and works as a support structure for the body. Animals can have different skeletons. For example, lions have a different shaped skeleton to a rabbit. 		Suggested experiments covered and questions -Dissect a plant identifying its main pollinating parts. Record using diagrams and writing frames. -How doe plants get water to the leaves and petals?. -Food colouring and carnation experiment to show water movement.
Vocabulary				
Rocks: Fossils roots stem nutrients photosynthesis. Transportation, Dispersal, Pollination, Flowers water, air, light nutrients soil in.. food chains producer. survive . protein, carbohydrates, fats, fibre and dairy skeletons and muscles. support structure				

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Science Knowledge Organiser

	Year 3	Term: Spring 2	Topic: Tribal Tales	Area of Science: Light
Prior substantive knowledge		Substantive knowledge taught		Disciplinary knowledge*
Year 2 – Street detectives – Material properties.		You need light to be able to see. Without light, we would not be able to see anything. Darkness is the absence of light. Light reflects from a surface. The best surfaces for reflecting light are very smooth, such as a glass mirror or polished metal. Light from the sun consists of UV rays which can be dangerous to people. When UV rays reach the skin, they can cause tanning and burning. Sometimes, UV rays can cause diseases such as cancer. It is important that we protect ourselves from the sun. We can do this by wearing suncream, staying in the shade and wearing clothes that will cover your skin. Sun glasses can also protect our eyes from the sun. A shadow is created when an opaque material or object is placed in front of a light source and prevents the light from passing through.		Working Scientifically
National curriculum objective for substantive knowledge				• Use ideas to pose questions, independently, about the world around them • Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts
Light • Recognise that they need light in order to see things and that dark is the absence of light • Notice that light is reflected from surfaces • Recognise that light from the sun can be dangerous and that there are ways to protect their eyes • Recognise that shadows are formed when the light from a light source is blocked by an opaque object • Sc L 5 Y3 Find patterns in the way that the size of shadows change Love to investigate: Why do shadows change?				
Vocabulary				Suggested experiments covered and questions
Darkness surface. reflecting UV rays tanning and burning. diseases cancer. opaque				• Sc L 5 Y3 Find patterns in the way that the size of shadows change Love to investigate: Why do shadows change?

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Science Knowledge Organiser

	Year 3	Term: Summer 1	Topic: Mighty Metals	Area of Science: Forces and Magnets
Prior substantive knowledge		Substantive knowledge taught		Disciplinary knowledge*
Year 2 – Street detectives – Material properties (Not including magnetism)		Forces and magnets: A force is either a push or a pull. When a force moves an object away from something, that is a push. When force brings an object closer, that is a pull. Gravity, friction and energy all influence how big or small a force is.		Working Scientifically
National curriculum objective for substantive knowledge		Gravity is the force that pull an object to the centre of the Earth (Not any object with a mass has gravity) Friction is the resistance that one surface or object encounters when moving over another.		• Discuss enquiry methods and describe a fair test • Take accurate measurements using standard units • Make predictions, explaining thinking, then test a range of magnets for their strength and polarity • Make a simple conclusion based on evidence from an enquiry or observation
Forces and Magnets • Describe forces in action (pulling and pushing) and whether the force requires direct contact between objects or whether the force can act at distance (magnetic force) • Compare how an object moves over surfaces made from different materials, making predictions and measuring the distance travelled • Sort and group materials into those that are magnetic and those that are not and identify patterns within the groups • Explain the terms ‘magnetic attraction’ and ‘repulsion’ and ‘magnetic poles’, using a model for assistance • Predict whether two magnets will attract or repel each other depending on which poles are facing		When objects move across different surfaces , their speed will change due to the friction pushing against the objects. Materials which are smooth have a smaller friction than materials which are rough and bumpy. Objects which are pushed across materials that are smooth will travel faster. Objects that are pushed across materials that are rough and bumpy will travel slower as there is a greater friction . Some materials are magnetic and some materials are not. Magnetic materials include: iron, nickel and cobalt . Materials that are not magnetic include: fabric, wood and lead . Magnetic attraction is when two magnets pull towards each other. Repulsion is when two magnets repel each other. Magnets have two poles: north and south . A magnet has two ends. One end is the north pole and the other is the south pole. If you try and place a north pole with another north pole they will repel each other.		• Discuss enquiry methods and describe a fair test • Record their findings using scientific language and present in note form, writing frames, diagrams, tables and charts
Vocabulary				Suggested experiments covered and questions
Forces and magnets: push pull . Gravity, friction energy force Magnetic surfaces iron, nickel and cobalt. Non magnetic fabric, wood lead. Magnetic attraction (Attract) Repulsion (repel) : north and south poles.				What material is magnetic? Test a range of materials for its magnetic properties. Measure the distance a material will move down a ramp. Friction test.

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Science Knowledge Organiser

	Year 3	Term: Summer 2	Topic: Tremors	Area of Science: Rocks
Prior substantive knowledge		Substantive knowledge taught		Disciplinary knowledge*
National curriculum objective for substantive knowledge	Rocks The <u>Earth</u> is made up of different <u>layers</u>. The <u>inner core</u> is made up of mostly <u>solid iron</u> and the <u>outer core</u> is made up of <u>liquid iron</u> and <u>nickel</u>. The <u>mantle</u> is made of <u>solid rock</u> and <u>liquid rock</u> called <u>magma</u>. The <u>crust</u> is a thin layer of <u>solid rock</u> that is broken into pieces called <u>tectonic plates</u>. These pieces move very slowly across the <u>mantle</u>.		Working Scientifically • Discuss enquiry methods and describe a fair test • Draw, a simple conclusion based on evidence from an enquiry or observation	
Rocks • Investigate the physical properties of one or a number of rock types and relate their properties to their appearance • Sc R 3 Y3 Recognise that soils are made from rocks and organic matter. Love to investigate: What is soil?	<u>Soil</u> is the uppermost <u>layer</u> of the <u>Earth</u>. It is a mixture of different things: • Minerals (the minerals in soil come from finely broken-down rock) • Air • Water • Organic matter (including living and dead plants and animals).		Suggested experiments covered and questions • Sc R 3 Y3 Recognise that soils are made from rocks and organic matter. Love to investigate: What is soil?	
Vocabulary	The Earth's crust is made up of many kinds of rock that have formed over millions of years. There are three main kinds of rock.		Suggested experiments covered and questions	
<u>Earth</u> inner core solid <u>iron</u> and the outer core is liquid <u>iron and nickel</u>. mantle solid rock and liquid rock called magma. crust tectonic plates. <u>Soil</u> - Minerals - Air - Water - Organic matter	Soil is the uppermost <u>layer</u> of the <u>Earth</u>. It is a mixture of different things: • Minerals (the minerals in soil come from finely broken-down rock) • Air • Water • Organic matter (including living and dead plants and animals). The Earth's crust is made up of many kinds of rock that have formed over millions of years. There are three main kinds of rock.		Working Scientifically • Discuss enquiry methods and describe a fair test • Draw, a simple conclusion based on evidence from an enquiry or observation Suggested experiments covered and questions • Sc R 3 Y3 Recognise that soils are made from rocks and organic matter. Love to investigate: What is soil?	

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