

	TERM 1 Electricity		TERM 2A Solids, liquids and gases (states of matter) Visits: Teddington Lock (investigating water conditions)		TERM 2B Forces		TERM 3 Animals including humans Visits: Teddington Lock (investigating water conditions)	
	Key knowledge	Key skills	Key knowledge	Key skills	Key knowledge	Key skills	Key knowledge	Key skills
	<p>To know how to use recognised symbols when representing a simple circuit in a diagram.</p> <p>To know how to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>To know different symbols when representing a simple circuit in a diagram.</p> <p>To know the brightness of a lamp, the volume of a buzzer or power of a motor is associated with the number and voltage of cells used in the circuit.</p> <p>To know how to recognise some common conductors and insulators and associate metals with being good conductors.</p> <p>To understand that electricity is a form of energy.</p> <p>To know that electricity gives us light, sound, heat and movement.</p> <p>To know about the work of Lewis Howard Latimer, Thomas Edison and Michael Faraday.</p>	<p>To be able to compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p> <p>To be able to set up fair tests to investigate different variables in a circuit.</p> <p>To be able to problem solve different circuits.</p> <p>To be able to make predictions about what components are needed for a circuit.</p> <p>To be able to formulate questions to further understanding about electricity and how it works.</p>	<p>To know materials can be classified as either a solid, liquid or gas.</p> <p>To know changes of state occur as a result of heating or cooling.</p> <p>To know some materials will dissolve in liquid to form a solution.</p> <p>To know when a solid dissolves in a liquid, it means it has broken down into pieces.</p> <p>To know some solids dissolve while others do not.</p> <p>To know when a solid dissolves in a liquid, a solution is created.</p> <p>To know solids dissolve at different rates.</p> <p>To know substances that dissolve in a liquid are known as soluble substances and those that do not dissolve in a liquid are known as insoluble.</p> <p>To know about the work of Archimedes, Robert Boyle and Marie Curie.</p>	<p>To be able to compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>To be able to describe how to recover a substance from a solution.</p> <p>To be able to observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</p> <p>To be able to compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.</p> <p>To be able to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>To be able to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p>	<p>To know how to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>To know forces are at work on everyday things all the time.</p> <p>To know everything that changes speed, stops, starts and changes direction has forces acting on it.</p> <p>To know a force is a result of a push or a pull.</p> <p>To know gravity is an example of a pulling force – a force that pulls objects towards the centre of the Earth.</p> <p>To know force is measured in Newtons, named after Sir Isaac Newton, a prominent scientist in this field.</p> <p>To know levers, pulleys and gears are simple machines, or mechanisms.</p> <p>To know there are two types of forces – those that work at distance (non-contact) and those that are in contact.</p> <p>To know gravity and magnetism work at a distance, whereas friction, air resistance and water resistance work in contact.</p> <p>To know if an object is stationary or moving at a constant speed, then the forces acting on it are balanced.</p> <p>To know unbalanced forces cause changes to movement (start, stop, speed up, slow down and changes of direction).</p> <p>To know about the work of Archimedes, Sir Isaac Newton and Maggie Aderin-Pocock.</p>	<p>To be able to identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> <p>To be able to recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> <p>To be able to investigate using force meters to measure force.</p>	<p>To know animals, including humans, need the right types and amount of nutrition.</p> <p>To know they cannot make their own food; they get nutrition from what they eat.</p> <p>To know our body needs food to provide it with the right energy, vitamins and minerals.</p> <p>To know we need to have a balanced diet.</p> <p>To know the digestive system acts in stages to digest our food. Each stage is important and prepares the food for the next stage.</p> <p>To know the first set of teeth known as ‘baby teeth’ slowly grow in and they total to twenty baby teeth.</p> <p>To know when our adult teeth grow in, we have a total of thirty-two teeth.</p> <p>To know humans have four different types of teeth in our mouths: incisors, canines, premolars and molars. It is important to have good dental hygiene.</p> <p>To know the type of teeth an organism has helps us to identify whether it is a carnivore, herbivore or omnivore.</p> <p>To know humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>To know humans and some other animals have an internal skeleton made of bone. These animals all have a backbone (spine) made up of bones called vertebrae.</p> <p>To know these animals are called vertebrates. Mammals, fish, birds and reptiles are all vertebrates.</p> <p>To know insects have an external skeleton (a hard outer covering) known as an exoskeleton. The skeleton provides support (maintains the animal’s shape), helps with movement and offers protection.</p> <p>To know the human skeleton (and that of most other vertebrates) contains a skull to protect the brain, ribs to protect the heart and lungs,</p>	<p>To be able to identify the different types of teeth in humans and their simple functions.</p> <p>To be able to describe the simple functions of the basic parts of the digestive system in humans.</p> <p>To be able to identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>

							and the spine to protect the spinal cord.  To know about the work of Pierre Fauchard (dentistry), Jamie Oliver (nutrition), William Beaumont, (digestion), Wilhelm Conrad Rontgen (x-ray) and Marie Curie (radiation).	
	<b>Key vocabulary (tier 2)</b> break brightness diagram electricity heat light movement sound symbols	<b>Key vocabulary (tier 3)</b> battery/cell Benjamin Franklin bulb buzzer circuit conductor incandescent insulator Lewis Howard Latimer Michael Faraday motor parallel series switch Thomas Edison	<b>Key vocabulary (tier 2)</b> boil cool freeze gas hardness heat liquid materials melt result solid	<b>Key vocabulary (tier 3)</b> atomic density dissolve evaporation filter insoluble Melitta Bentz mixture particle saturate sieve solidify soluble solution	<b>Key vocabulary (tier 2)</b> contact force measure non-contact pull push	<b>Key vocabulary (tier 3)</b> air/water resistance balanced force buoyancy friction gravity lever Maggie Aderin-Pocock magnetism mechanism newton Nikola Tesla pulley Sir Isaac Newton streamlined unbalanced force	<b>Key vocabulary (tier 2)</b> animal diet fats food fruits humans sugars teeth tooth vegetables	<b>Key vocabulary (tier 3)</b> anus balanced diet canine carbohydrates cementum dairy dentin digestive system enamel endoskeleton exoskeleton food groups hydrostatic skeleton incisor invertebrate large intestine molar nutrition oesophagus patella plaque premolar pulp ribcage small intestine stomach tooth decay vegetables vertebrae vertebrate wisdom teeth