



Year 7 Science

Subject Learning Scheme 2016-2017



Year 7 KS3	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Prior Learning						
Key Learning and Activities. <ul style="list-style-type: none"> • knowledge • skills • experiences 	Science Skills Cells	Particles, Solids, Liquids and Gases Energy and Heat Transfer	Digestion Solution and Mixtures	Contact and Non-contact Forces Atoms and Elements and Compounds	Simple Electrical Circuits Simple Chemical Reactions	Interdependence
Key Activities promoting SMSC and British Values.	<p>Pupils learn about laboratory rules, hazard symbols, scientific equipment and how to use a Bunsen burner. They also complete a core practical that involves investigating the effects of a blue and orange Bunsen flame on the temperature rise of water.</p> <p>Pupils learn about animal and plant cells, their basic structures and the hierarchical organisation of cells to create organs. They will do core practicals involving the preparation of cheek cell and onion cell slides to</p>	<p>Pupils will carry out a core practical investigating the properties of solids liquids and gases and use the particle model to explain their observations.</p> <p>Pupils will learn how to calculate fuel uses and costs in the domestic context and compare power ratings of appliances. They will learn to compare the amounts of energy transfer and learn about domestic fuel bills, fuel use and costs. Pupils will learn about the different types of fossil fuels including their source and formation. Pupils will learn about other types of energy resources both</p>	<p>Pupils will learn about the seven nutrients including their roles and create healthy eating plates to represent a balanced diet. They will learn about the consequences of a poor diet and learn about the organs of the digestive system including their location, structure and role.</p> <p>Pupils carry out a core practical investigating the boiling point of water with and without adding salt. Pupils carry out core practical investigating the effect of temperature on the time sugar takes to dissolve in</p>	<p>Pupils will learn about forces as pushes or pulls, arising from the interaction between two objects. They will learn to use arrows in diagrams, adding forces in one dimension, balanced and unbalanced forces. They will learn about moments as the turning effect of a force and forces associated with deforming objects; stretching and squashing – springs; with rubbing and friction between surfaces, with pushing things out of the way. They will also learn about resistance to motion of air and water and that forces measured in Newtons, measurements of stretch or compression</p>	<p>Pupils will learn about simple electrical circuits and take part in a number of investigations to learn the rules governing series and parallel circuits, the relationship between voltage and current, and the devices we use to measure the natural phenomena.</p> <p>Pupils carry out a core practical investigating six different chemical reactions. Pupils carry out a core practical investigating chemical reactions and reversible changes. Pupils carry out a core practical investigating the products of burning reactions. Pupils learn about the definition of an element and carry out a core data analysis task</p>	<p>Pupils will learn about the interdependencies of organisms within an ecosystem. Becoming fluent in the use of food chains and more complex food webs. The importance of insects to pollinate crops for human use and the effect of toxic accumulation within an organism will be highlighted.</p>

	view under the light microscope. They will have the opportunity to do an extended writing task on the comparisons of plant and animal cells.	renewable and non-renewable	water. Pupils learn about diffusion and observe a core demo of the diffusion of potassium permanganate crystals as they dissolve in water. Pupils carry out a core practical investigating the effect of temperature on the rate of diffusion of potassium permanganate crystals in water. Pupils carry out core practical investigating filtration, evaporation and distillation as simple separating techniques.	as force is changed. They will learn about work done and energy changes on deformation. Non-contact forces: gravity forces acting at a distance on Earth and in space, forces between magnets and forces due to static electricity. Pupils learn about the early ideas of atoms including the names of important scientists. Pupils complete core investigating some common elements, their symbols and properties. Pupils will carry out a core practical investigating the key properties of metals and non-metals. Pupils will carry out a core practical investigating the properties of iron and sulphur before and after reacting. Pupils carry out practical investigating the separation of sand, salt and water using separation techniques learned previously.	on the properties of some common elements. Pupils carry out a core practical investigating the chemical patterns of some common metal elements in water. Pupils carry out a core practical investigating the chemical patterns of some common metal elements in acid.	
Key Homework	Drawing Graphs Homework Sheet	Jolly Jelly Level Assessed Task	Nutrition and Digestion Report 1	Measuring Force Level Assessed Task	Electrical Circuits Level Assessed Task	Predator and Prey Graph

	Cells Level Assessed Task Cell Model Level Assessed Task	Paradise Island Level Assessed Task	Nutrition and Digestion Report 2 Solutions Level Assessed Task	Burning Magnesium Level Assessed Task Iron and Sulphur Level Assessed Task	Candle Level Assessed Task	
Key Assessment incl. dates	End of Topic Test	End of Topic Test	End of Topic Test			



Year 8 Science

Subject Learning Scheme 2016-2017



Year 8 KS3	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Key Learning and Activities <ul style="list-style-type: none"> • knowledge • skills • experiences 	Acids and Alkalis Variation	Space Reproduction	Light waves	Evolution Sound waves	Gas exchange and respiration.	Earth structure and rocks
Key Activities promoting SMSC and British Values.	<p>Pupils will learn about acids and alkalis and their many reactions relating to the context in real world situations. Many practical activities are undertaken including the reading of pH and neutralisation reactions, all underpinned with a strong emphasis on safety. This topic forms an excellent foundation for more in-depth coverage at GCSE.</p> <p>Pupils will study the differences between</p>	<p>The phenomena of gravity will be investigated and its relationship with the celestial bodies of the solar system. Our sun will be covered as one star in a galaxy containing billions of stars, and that galaxy being one of billions of other galaxies. Closer to home, we will investigate why the seasonal changes happen in relation to the Earth's position in orbit around the</p>	<p>Students will be introduced to waves and their ability to transfer energy over distances. The uses of electromagnetic radiation for transferring information will also be covered. Students will carry out a series of core practicals to investigate the properties of light waves and how colour is observed</p>	<p>Students will learn about sound waves and their propagation, the values we use in measurement of sound and the auditory hearing range of humans and animals. The effects of sound waves on the ear drum will also be demonstrated and investigated.</p> <p>The process of natural selection will be studied in detail to relate the adaptation of</p>	<p>Students will learn about gas exchange within humans including the mechanism of breathing and the adaptations of the body to facilitate this. The impact of asthma, exercise and smoking on the body will be identified. Cellular respiration in mammals- (anaerobic and aerobic) will be covered and the differences between them clearly identified.</p>	<p>Students will study the composition and structure of the Earth. Our use of the Earth for its natural resources and the impact this has on our environment and the climate will be discussed in detail. The carbon cycle and the composition of the atmosphere will also be touched upon.</p>

