Subject	Science		
	Interpretation of National Curriculum into Year group Endpoints		
Year	**Term 1**	**Term 2**	**Term 3**
8	Students will desribe and explain the concepts of: **Speed and Pressure** quantitative relationship between average speed, distance and time (speed = distance ÷ time), the representation of a journey on a distance-time graph and relative motion atmospheric pressure, pressure in liquids and pressure measured by ratio of force over area **Voltage & Resistance** potential difference (V), resistance (Ohms) as the ratio of potential difference to current and differences in resistance between conducting and insulating components **Current** electric current (measured in Amperes) in series and parallel circuits, current as flow of charge and static electricity **Electromagnets & Magnetism** the magnetic effect of a current to make an electromagnet and its application in making motors magnetic poles, magnetic fields and the Earth's magnetism used for navigation **Energy Costs** fuels and energy resources, generating electricity and calculation of fuel uses and costs in the domestic context **Energy Transfer** processes that involve energy transfer: changing motion, dropping an object, completing an electrical circuit, stretching a spring, metabolism of food, burning fuels and energy as a quantity that can be quantified and calculated	Students will desribe and explain the concepts of: **Work** forces being needed to cause objects to stop or start moving, or to change their speed or direction of motion, the concept of levers and moments **Heating & Cooling** heating and thermal equilibrium: temperature difference between two objects leading to energy transfer from the hotter to the cooler one, through conduction or radiation **Separating Mixtures & Periodic Table** the concept of a pure substance and a mixtures and simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography the varying physical and chemical properties of different elements, the principles underpinning the Periodic Table and how patterns in reactions can be predicted with reference to the Periodic Table **Metals & Non-Metals** the properties of metals and non-metals, the chemical properties of metal and non-metal oxides with respect to acidity and reactions of acids with metals to produce a salt plus hydrogen and properties of ceramics, polymers and composites **Earth Structure** the composition and structure of the Earth and the rock cycle and the formation of igneous, sedimentary and metamorphic rocks **Climate & Earth's Resources** the composition of the atmosphere, the Carbon cycle and the production of carbon dioxide by human activity and the impact on climate Earth as a source of limited resources and the efficacy of recycling	Students will desribe and explain the concepts of: **Digestion** the tissues and organs of the human digestive system, the importance of enzymes and bacteria in the digestive system, the content of a healthy human diet and the consequences of imbalances in the diet **Respiration & Photosynthesis** aerobic and anaerobic respiration in living organisms in terms of the reactants, the products formed and the implications for the organism plants making carbohydrates in their leaves by photosynthesis gaining mineral nutrients and water from the soil via their roots and the dependence of almost all life on Earth on the ability of photosynthetic organisms to use sunlight in photosynthesis to build organic molecules Interdependence the interdependence of organisms in an ecosystem, the importance of plant reproduction through insect pollination in human food security and how organisms affect, and are affected by, their environment **Variation & Evolution** differences between species and the variation between individuals within a species being continuous or discontinuous the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection **Inheritance** heredity as the process by which genetic information is transmitted from one generation to the next including a simple model of chromosomes, genes and DNA