

Curriculum Content Map													Subject: Science Year 7																					
Month		Term 1											Term 2											Term 3										
		September			October			November			December			January			February			March			April			May			June			July		
Cultural Transmission	Units of Work		Enquiry process – working scientifically 5 Lessons Unit 1- Forces Speed 4 lessons	Unit 1- Gravity Gravity 1 lesson Unit 5- Matter Particle model 8 lessons	Unit 5- Matter Particle model 8 lessons Unit 8- Organisms Movement 4 lessons	Unit 8- Organisms Cells 5 lessons	Unit 5- Matter Separating mixtures 6 lessons	Unit 3-Energy Energy costs 3 lessons Unit 3-Energy Energy transfer 2 lessons	Unit 9- Ecosystems Interdependence 4 lessons	Unit 9- Ecosystems Plant reproduction 3 lessons	Unit 6- Reactions Acids and alkalis 6 lessons	Unit 6- Reactions Metals and non-metals 6 Lessons.	Unit 14 Forensics - Working scientifically project																					
	National Curriculum area – KS3		Page 58 and 59. Working scientifically Page 64 – 65. Describing motion Forces	Page 65. Forces and motion Forces Page 62 The particulate nature of matter Pure and impure substances	Page 60 The skeletal and muscular systems Page 62 The particulate nature of matter Pure and impure substances	Page 59 and 60 Cells and organisation	Page 62 and 63 Pure and impure substances	Page 64 Calculations of fuel uses and costs in the domestic context Energy changes and transfers	Page 66 Current electricity Page 61 Interactions and interdependencies	Page 60 Reproduction	Page 63 Chemical reactions	Page 63 The periodic table	Page 58 and 59. Working scientifically																					
	Substantive Knowledge	The What!	Enquiry Process Asking scientific questions Planning investigations Recording data Analysing patterns Evaluating data Unit 1 Introduction to forces Balanced and unbalanced forces	Unit 1 Speed Distance-time graph Gravity Unit 5 The particle model States of matter	Unit 5 The particle model States of matter Unit 8- Organisms Level of organisation The skeleton Movement: joints Movement: muscles Unicellular organisms	Organisms Observing cells Plants and animal cells Specialised cells Movement of substances Unicellular organisms	Pure substances and mixtures Solutions Solubility Chromatography Filtration Evaporation and distillation	Food and fuels Energy resources Energy and power Energy adds up Energy dissipation	Food chains and webs Disruption to food chains and webs Ecosystems Competition	Flowers and pollination Fertilisation and germination Seed dispersal	Acids and alkalis Chemical reactions Acids and alkalis Indicators and pH Acid strength Neutralisation Making salts	More about elements Chemical reactions of metals and non- metals Metals and acids Metals and oxygen Metals and water Metal displacement reactions	Working scientifically project																					
	Disciplinary Knowledge	The How!	Enquiry Process Practical work throughout most lessons to apply knowledge of asking scientific questions and planning an investigation. Unit 1- Speed Students to use newton meters to calculate force needed to carry out different activities. Students to describe and act out how to change motion when you ride a bicycle.	Unit 1- Gravity Students to investigate the effect of a selected variable on the average speed of a toy car. Students introduced to distance time graphs. Students to use sealed containers with sand to describe how weight changes on a journey to the moon. Unit 5- Students build their own model of the particle model Students to complete a practical on state changes	Unit 8- Organisms Students to research different organ systems and create a presentation Students to build and label a skeleton Students to look at the muscles in a chicken leg and compare to human's leg muscles	Unit 8- Organisms Students to write an instruction leaflet for the microscope. Practical observing cheek cell under a microscope Students to compare different specialised cells. Students to compare animal, plant and bacterial cells. Students to do a practical to test how substances move in and out of cells	Students devise ways to separate different mixtures using appropriate techniques, justifying use of techniques. Students use every day examples to define solute, solvent and solution. Explain solubility graphs and carry out experiment to find out whether solubility of salt in seawater differs depending on temperature. Students solve a problem of separating salt from a mixture of rock and salt by filtration and evaporation. Students observe a demo of the distillation ofinky water. Students carry out a practical of chromatography.	Students extract information from food labels about energy intake per portion. Students decide and justify which of the activities they do during a typical school day has the greatest energy requirement, and compare their choices. Students to carry out research on the topics posed in the activity regarding the generation of electricity. Students produce a poster or leaflet. Students summarise ways to reduce energy bills. Students will carry out a circus activity where they identify energy stores before and after an energy transfer, in addition to the energy transfers taking place during the experiment. Students complete practical investigating the efficiency of lightbulbs.	Students make their own food webs using organisms provided. Students create a graph showing the information provided on the gannet population on the island of Grassholm over a period of 18 years. Students carry out investigation on the school field on plant abundance using sampling techniques. Students to use graphs to explain prey-predator relationships Unit 11 Students to carry out a flower dissection. Students use seed packets to discuss weather conditions needed for germination and growth.	Students to carry out a flower dissection. Students use seed packets to discuss weather conditions needed for germination and growth.	Students carry out a series of reactions to observe what happens and define chemical reactions. Students revise hazard symbols and apply them to the use of acids and alkalis. Students to carry out a simple practical using universal indicator to find pH of solutions. Students compare the reaction of magnesium ribbon with strong and weak acids. Students use a molecular model kit to model hydrochloric acid when they are added to water. Students follow tips to plan an investigation to test two indigestion tablets	Students research elements in small groups and produce information posters to make a class periodic table. Practical where students add different metals to dilute hydrochloric acid and test for gas produced. Students plan and carry out an investigation to test reactivity of three metals in water and acid.	Students analyse a mock-up of a crime scene to gather evidence that will help them throughout this topic Students study different types of finger prints Students take their own finger prints Students learn about different blood types Students do a blood analysis test Circus of the following activities: Hair analysis under microscope Footprint analysis under microscope Thread analysis under microscope Chromatography DNA extraction experiment Put together a prosecution case																					
	Sequencing (Flow)	Retrieval & Extension	Enquiry Process: builds from KS2: Working scientifically skills developed at lower and upper KS2 Throughout KS3 and KS4 as part of investigations and experimental work in lessons Year 7 unit 13 Year 8 unit 12 Year 9 unit 13 Year 9 unit 15 Unit 1 is further developed in Year 7 unit 3 Year 9 unit 1 Year 9 unit 4	Unit 1 builds from KS2: Topic of forces covered in year 5 Unit 5 builds from KS2: Topic of properties and changes of materials covered in year 5 Unit 1 is further developed in Year 9 unit 1 and unit 2 Unit 5 is further developed Year 7 unit 7 Year 8 unit 11 Year 8 unit 12 Year 9 unit 5 Year 9 unit 12 Year 9 unit 6	Unit 5 builds from KS2: Topic of properties and changes of materials covered in year 5 Unit 8- Organisms: builds from KS2: Topic of animals, including humans covered in year 3 Unit 5 is further developed Year 7 unit 7 Year 8 unit 11 Year 8 unit 12 Year 9 unit 5 Year 9 unit 6	Unit 8- Organisms builds from KS2: Students haven't covered this topic at KS2. Some basic introduction to topic in the topic of living things and their habitat in year 5 and 6. Year 7 unit 4 Unit 8- Organisms: is further developed in Year 8 unit 9 Year 8 unit 10 Year 9 unit 9	Unit 5- Matter: builds from KS2: Topic of properties and changes of materials covered in year 5 Year 7 unit 6 Unit 5- Matter is further developed Year 7 unit 7 Year 8 unit 11 Year 8 unit 12 Year 9 unit 5 Year 9 unit 6	Unit 3-Energy No KS2 links to topics energy costs and energy transfer. Retrieval to find misconceptions they may already have such renewable energy being energy that can renew itself.	Unit 9- Ecosystems: builds from KS2 Topic of Living things and their habitat covered in year 5 and 6. Unit 9- Ecosystems is further developed in Year 8 unit 3 Year 9 unit 8	Unit 11 builds from KS2 Topic of Living things and their habitat covered in year 5 and 6. Unit 11 is further developed Year 8 unit 4 Year 9 unit 9	Unit 6- Reactions builds from KS2 Students haven't covered this topic at KS2. Some basic introduction to topic in the topic properties and changes of materials covered in year 5 Further developed in: Year 8 unit 11 Year 8 unit 12 Year 9 unit 5 Year 9 unit 6	Unit 6- Reactions builds from KS2 Students haven't covered this topic at KS2. Some basic introduction to topic in the topic properties and changes of materials covered in year 5 Year 7 unit 13 Further developed in: Year 8 unit 11 Year 8 unit 12 Year 9 unit 5 Year 9 unit 6	Unit 14 builds from KS2 Working scientifically skills developed at lower and upper KS2 Unit 14 is further developed in Throughout KS3 and KS4 as part of investigations and experimental work in lessons Year 8 unit 13 Year 9 unit 14 Year 9 unit 16																					
Summative Assessment				AP1 Assessment- to include Unit 5- Matter. Unit 1 forces and Enquiry process			AP2 to include Unit 5 Matter- Unit 3 Energy costs and Energy transfer.																											
Personal Empowerment	Virtue		Friendliness & Civility	Justice & Truthfulness	Courage	Generosity	Gratitude	Good Speech	Good Temper & Humour	Self-Mastery	Self-Mastery	Compassion	Good Sense																					
	Link to Virtue	The opportunity to reflect, think deeply and critically about an issue.	Enquiry Process: Students will work together in small groups to carry out investigations to develop their disciplinary knowledge which they have learned at KS2 Unit 1: Students will reflect on why there are national speed limits and how this is in place to ensure everyone is safe and civil with each other.	Unit 1- Gravity: Students will think about the truthfulness of 'weight' in everyday terms and how that compared to the physics definition of it. Is our weight and mass the same? Unit 5- Matter: Students will use courage and resilience when students investigate the factors affecting diffusion.	Unit 5- Matter: Students will use courage and resilience when students investigate the factors affecting diffusion. Unit 8- Organisms: Students will learn the truth behind how our bodies are supported by the skeleton and how joints and muscles work to allow us to move successfully.	Students will use courage when being introduced for the first time to the topic of cells. They will use courage to develop their understanding of cells, specialised cells and observing cells	Unit 5- Matter Students will demonstrate gratitude to how separating techniques are used to produce drinking water and chromatography is used for forensic and drug testing.	Students will be using good speech when discussing energy resources and evaluating the advantages and disadvantages of using renewable and non-renewable sources Students will need to use good speech when doing different experiments to work out the energy store and how the energy is transferred in each case.	Students will use good temper and humour to look at the relationship between different species and how they need to work together to both survive. This will help students understand that we need good temper and humour to work together.	Students will demonstrate self-mastery when learning about the importance of plant reproduction and seed dispersal. They will also compare the difference between plant and animal reproduction and will need to demonstrate self-mastery and be sensible.	Students will be compassionate with each other when predicting which household products can be used if someone else is stung by a bee or wasp.	Students will use self-mastery when carrying on experiments with chemicals which are more dangerous and watching class demos.	Students will use good sense to deduct and predict outcomes of different investigations they will carry out in teams.																					
Preparation for Work	Skill	Transferable skills	Listening	Leadership	Problem-Solving	Creativity	Staying Positive	Speaking	Staying Positive	Aiming High	Aiming High	Speaking	Teamwork																					
	Link to Skill		Enquiry Process: Students will use their listening skills to follow simple new instructions based in a secondary school lab Unit 1: Students to use listening skills when they describe to each other distance-time graphs and in pair the other student has to draw what was described.	Unit 1- Gravity: Students will use leadership skills to work in groups to work out how gravity changes in different planets. Unit 5- Matter: Students will use problem solving to investigate the factors which affect diffusion.	Unit 5- Matter: Students will use problem solving to investigate the factors which affect diffusion. Unit 8- Organisms: Students will demonstrate leadership when carrying out experiments to investigate the skeleton, joints and muscles	Unit 8- Organisms Students will use problem solving skills when researching the uses of different specialised cells and trying to work out how their specialisation allows them to carry out a particular job	Students will need to stay positive to carry out various experiments to investigate the different separating techniques	Students will use good speaking skills when debating on the use of non-renewable and renewable sources Students will be using their speaking skills when carrying out a practical to work out the energy store in each experiment and what is the energy transfer	Students will stay positive when learning that although some animals are preys and some are predators, each species has a particular purpose in the food chain and therefore there is a bigger picture	Students will aim high by demonstrating good understanding of new terminology and learning definition of new keywords.	Students will use good speaking skills when carrying out investigations such as making salts and neutralisation.	Students to aim high when predicting the products of various chemical reactions depending on the reactants being used. Students to be challenged further to start thinking about conservation of mass.	Students will work in groups when carrying out various experiments to build and cement their disciplinary knowledge.																					
Preparation for Citizenship	SMSC & British Values	Developing opinions on current issues																																
	Link to SMSC & British Values		Students to demonstrate tolerance and respect when carrying out investigations.	Students to demonstrate tolerance when learning about different organ systems and the skeleton and being respectful of each other		Students to demonstrate responsibility when carrying out experiments in group work	Students to demonstrate responsibility when carrying out experiments in group work.	Students to apply respect when learning how different populations rely on each other for their own existence.																										