	Year 9	Pathway 2/3/4	Science - Autumn Term 1			
Learning Intention: <u>Chemistry</u> - Properties and Changes of Materials						
Periodic table/Chemical Reactions						
 The topics that students will be focusing on are the following: To recap safety in the Science Lab, describe the particle arrangement of solids Liquids and gases To gain further understanding of the Kinetic Theory To gain a deeper understanding of the properties of the elements in the periodic elements including the 'transition elements' To explore the factors that affect rates of a reaction and identify elements by using flame tests 						
Key knowledge that should be learned during this SoW		All	Most	Some		
Concept:	This 'Properties and Changes of Materials' unit will teach students about different materials, their uses and their properties, as well as dissolving, separating mixtures and irreversible changes. Students will sort and classify objects according to their properties. They will explore the properties of materials to find the most suitable material for different purposes. The students will work scientifically and collaboratively to investigate, making predictions and forming conclusions.					
Knowledge:		 To recall some safety in the Science Lab To practise and record the particle arrangement when heating ice 	 To recall most safety in the Science Lab To practise lighting the Bunsen burner and a night light in a sand tray with some support 	 To recall all safety in the Science Lab To practise lighting the Bunsen burner and a night light in a sand tray 		

	 To know facts about the Periodic Table To use Molymods for 'Mighty Molecule Building' To understand rates of reaction To observe closely how some materials burn 	 To recap the particle arrangement of solids, liquids and gases To identify hazards and risks when burning materials 	 To have an understanding of the Kinetic Theory
Key Skills:	To <u>recognise</u> and link basic Maths and English skills in context to help students develop their application skills, to improve on their transferable skills such as time-keeping, teamwork and develop students' learning skills and independence so they can go on to be life-long learners.	To <i>begin</i> to link basic Maths and English skills in context to help students develop their application skills, to improve on their transferable skills such as time-keeping, teamwork and develop students' learning skills and independence so they can go on to be life-long learners.	To <i>implement independent</i> links to basic Maths and English skills in context to help students develop their application skills, to improve on their transferable skills such as time-keeping, teamwork and develop students' learning skills and independence so they can go on to be life-long learners.
Language and/or communication skills:	AtomsElementsCompounds	CombustionChemical reaction	CatalystProductReactant
Curricular Links	Links to other learning within the subject are: Science/Resistant Materials/ PSHCE/PE		

	Year 9	Pathway 2/3/4	Science - Autumn Term 2				
Learning In	Learning Intention: Chemistry - Rocks						
The Earth and Rock The topics that students will be focusing on are the following: • To gain an understanding of the Earth's Tectonic Plates • To recall the names of types of rock • To learn about the rock cycle and the different types of rocks in more detail and how they are formed • To extend their learning about the Earth's resources and why we should recycle the Earth's natural resources • To grasp the concept of gravitational force • To calculate weight if the mass and gravitational force is given • To recap the planets and explore space exploration							
Key knowledge th during this SoW	at should be learned	All	Most	Some			
Concept:	Concept: They will test different hypotheses, measure and record different variables. Students will then have the opportu to evaluate their results to find out there is a link between the dependent and independent variables. They will begin to make meaningful connections in maths, science, and technology content to solve real-world problems through hands-on learning activities and creative design.			dents will then have the opportunity independent variables.They will also ent to solve real-world problems			
Knowledge:		 To investigate which balloon will travel the furthest when moving on different types of strings. Making a string telephone To use a choice chamber to investigate the choices regarding habitat made by woodlice. 	 To measure and record data accurately(Runny lava investigation) Investigating absorbency of different materials To investigate the effects of counter balances on how far a missile travels. 	 To measure , record data, and evaluate data accurately(Runny lava investigation) Investigating absorbency of different materials To investigate the effects of counter balances on how far a missile travels. 			

	 Use the Model of a teeth investigation to learn how to brush the teeth correctly. Fruit painting practical 	 To investigate the rate at which different types of chocolate melt. Build a rocket investigation. Limited support when taking part in practical task 	 To investigate the rate at which different types of chocolate melt. To find out what variable they need to control to get their Rocket to travel the furthest during (Build a rocket investigation). Little/no support when taking part in practical task
Key Skills:	To be able to recognise that scientists can use their knowledge of Maths, Engineering and Technology to solve problems.	To be able to understand that scientists can use their knowledge of Maths, Engineering and Technology to solve problems.	To gain understanding of how scientists can use their knowledge of Maths, Engineering and Technology to solve problems.
Language and/or communication skills:	 Control variables Prediction 	 Dependent Control variables 	 Independent variable Gravity Air resistance Thrust
Curricular Links	Links to other learning within the subject are: Science/Resistant Materials/ PSHCE/PE		