Year 7 Autumn	Year 8 Autumn	Year 9 Autumn	GCSE year 10 Autumn	GCSE year 11 Autumn
Particles - Students will learn basic practical skills including using Bunsen Burners, drawing tables and graphs and how to perform an experiment safely. Pupils will also learn about kinetic theory of matter and diffusion.	Ecosystems - Students will focus on the role of plants in ecosystems and the feeding relationships in the system. The importance of photosynthesis will be discussed here.	Forces- Students will be studying Hooke's law and be able to calculate spring constant of a spring. They also will be calculating work done when a force is acting on an object.	Atomic structre and readioactivity - Students will learning about differnt types of radiation and its effect on our body.	Particle model of matter - Students will be learning about how to work out density of various objects and also about gas pressure.
Cells - Students will learn the basics of plant and animal cells and also learn how to use a microscope to view samples. They will look at specialised cells and unicellular organisms,	Earth - Students study the rock cycle, understand how different types of rock are formed, and introduce factors that contribute to climate change and global warning.	Atomic structure - Students will delve into greater detail, looking at the structure and history of the atom and the periodic table, identiyfing the subatomic particles that make up atoms, students will be able to use the periodic table to a much greater extent, understanding more of the information it contains.	Electricity - Students will be learning about the charecteristics of various components in circuits like resistors, diodes, LDRs and Thermistors	Magnetism and electromagntism - Students will be learning about magnetic fields and how make electromagnets
Forces - Pupils will learn about different types of forces and how objects move under various forces. This topic also inludes the difference between the terms mass and weight, and studying spring under tension.	Electricity - Pupils will be able to build diferent types of circuits and measure current and voltage. Then they will be able to relate it to resistance.	Health - Students study the circulatory system and how the body reponds to the demands of exercise.	Cell Structure and Cell Division - Students will develop their understanding of cell structure and prepare samples of cells to view under the microscope.	Ecology - Students will look at sampling techniques and how human activity affects the environment. They will look at the impact of global warming and the importance of interdependence in ecosystems
	Periodic table - Students will discuss and investigate trends and patterns in the periodic table, use their knowledge to predict proeprties of different subtacnes use chemcial fomrulae.	Cells - This unit builds on the work from Year 7 introducing prokayotic organisms and developing aseptic techniques to cultivate these.	Organisation and the digestive system - studenst will recap levels of organisation in living things and focus on the role of the digestive system. They will look at the role of enzymes in digestion	Genetics and Evolution
			The Heart and Blood vessels - Students will look at the circulatiry system in detail and also focus on coronary heart disease. They will look at the impact that lifestyle can have on health	Review of Chemical Analysis - A recap of the key analytical chemicstry that was covered at the end of Year 10 - this unit refreshes students understanding of key practical tasks such as chromatography and distillation.
			Reviewing Atomic Structure and Bonding - This is a recep of some of the key content from year 9 and aims to extend it to GCSE level. It will go over atomic structure, the different types of chemical bonding and how this relates to the properties of different subtances.	Rates and Equilbira - Students will learn about the factors that affect the speed of a chemical reaction and will be introduced to the fact that some reactions are reversible. Equilibria are a specific kind of reversible reaction and students will be able to explain factors that affect the position of equilbrium and the yield of a chemical reaction.

			Energy Changes and Electrolysis - The first main GCSE unit energy changes looks at exo- and endothermic reactions, and energy profile diagrams. Electrolysis is the separation of compounds into elements using electricity. Within this topic we will also look at electrochimcal cells and hydrogen fuel cells for triple science. There are two required practicals in this topic.	

Year 7 Spring	Year 8 Spring	Year 9 spring	GCSE year 10 Spring	GCSE year 11 Spring
Elements, compounds and chemical reactions - Students wil extend their understanding from the particles unit, learning about atoms, molecules and how this relates to elements and compounds. Students will also start using word equations to represent chemical equations and may progress to using chemical formuale, while developing more of their practical skills	Health and lifestyle - Looks at the impact of diet on health. Students learn how to test for teh main food groups and also how food is digested in the human body.	Particle model of matter - Studentss will learn about density and how to calculate density of regular and irregular objects. They will also be learning about change of states and gas pressure.	Energy - Students will be studying about various energy stores and how to calculate each. They will also be learning about specific heat capacity.	Biological Responses - Homeostasis - Students will study the processes by which a constant internal environment is maintained in the human body.
Body systems - Students learn about plant and animal organs and tissues. Also how these organs interact in organ systems. they will look at the role of muscles, joints and the skeleton in bringing about movement.	Separation techniques - Students will use a variety of practical techniques to separate different mixtures, they will be able to describe and explain why different methods are used, being able to describe the key differences between mixtures and compounds.	Diseases - Students will look at both communicable and non-communicable diseases. They will look at how lifestyle impacts on disease and also how the body responds to infection.	Waves - Students will be studying about progressive and stationary waves and then apply their knowledge, in learning about electromagnetic waves and their uses.	Biological responses - Nervous System - Students will study the anatomy of teh nervous system and also the pathways involved in nervous responses. They will investigate reaction times in humans and look at how these can be affected by other factors.
Motion and pressure - Students will be learning how to calculate speed and to interpret distance time graphs.They will also be learning about pressure in solids, liquids and gas.	Light - Students learn about properties of light and how to draw ray diagrams to show reflection and refraction of light. They will also be learning about the structure of eye and how we see colours.	Acid reactions - students will investigate the different reactions of acids with metals, hydroxides, oxides and carboantes and look at representing the chemical reactions using suitable word and formula equations	The Heart and Blood vessels - continued from the previous term	Biological Responses - Hormones - Students will study the role of homones on maintaining a stable environment within the body. This will focus mainly on the role of insulin in controlling blood glucose levels.
			Respiration	
			Quantitative Chemsitry - This topic is very caluclation heavy, this unit deals with chemical quantities, calculating formula and recting masses for Higher students it also introduce the concept of the mole - a chemical unit which measures how many atoms, ions or molecules are present in a substance. Triple students extend this concept further and look at moles in solutions and gases.	Forces - students will learn how to represent forces using free body diagrams and calculate resultant forces. They will also be calculating spring constant from force extension graphs.
				Motion - Students will be using equations of motion to calculate velocity and acceleration and also will be learning about Newton's laws of motion

				Organic Chemistry - Organic chemistry is the chemistry of carbon-based compounds. Students will look at petrochemicals - crude oil alkanes and alkenes. Triple students will also look at other more functionaliesd organic compounds. All students will need to be aware of different polymers and how they are represented.
				Atmosphere and Resources - Students will look at the histroy of our atmosphere and how it has changed over millions of years. We then move on to how we are currently changing our atmosphere through human activity. We then go on to look at the sustainable use of different resources and producing potable/drinkable water in different climates.

Year 7 Summer	Year 8 Summer	Year 9 Summer	GCSE Year 10 Summer	GCSE Year 11 Summer
Acids and alakali - Students will learn about the differences between acids and bases/alkalis, the role of indicators and how to identify a substance as an acid and an alkali. They will continue to build on the skills from the previous chemistry unit and work on writing word and possibly symbol equations for different chemcial reactions.	Metals and acids - Students will look at the reactions of metals, go over the concepts of different reactivities that were intoruced in the periodic table, discuss and investigate displacement reactions and consider the reactions of metals with acids and other materials such as oxygen and chlorine.	Motion - Students will be learning how to calculate accelaration and to interpret velocity time graphs. They will alos be learning about stopping distances of vehicles.	Domestic electricity - students will be comparing different ways of genrating electricity and also wiring of a three pin plug. They also be comparing power rating various appliances and the importance of fuse and earthing in household wiring.	Reproduction - Students will look at the advantages and disadvantges of sexual and asexual reproduction. Learn about hormones involved in the menstrual cycle and also understand the biological basis of contraception.
Reproduction - Students learn the basics of both pant and animal reproduction. This looks at how pollenation occurs in plants. Students will also gain an understanding of teh human menstrual cycle and the process of birth	Adaptations - Students study variation in living organisms and how this impacts on survival in different environments. This leads to an understanding of interdependence between species and how speices have evolved over time.	Bonding and structure - students will lean about the different structures of ionic, covalent and metallic materials and link these structures to the observable properties of these substances.	Infection and Response - Students will study communicable diseases, how they are spread and how the body deals with these via the immune system.	Students will be working on exam skills ahead of their GCSEs
Sound - Students will be learning about how sound waves are prodeced and how they travel through different medium. They will also be learning about the structure of the ear and hearing losses.	Magnetism - Students will be learning about magnetic and plotting magnetic field around a bar magnet. They will also be learning about electromagnets.	Ecology - Students will construct pyramids of numbers and biomass to show feeding relationships. They will use sampling methods to estimate population sizes and also look at how living organisms are classified.	Plant Organisation - Students will look at plant tissues and organs and relate these to the processes of transpiration and translocation.	
Space - During the space project, students will researching on objects in solar system. They also will be learning about seasons and how theories about solar system have changed over time.	Energy - Students will be able to analyse the energy content of variouss foods and look at different ways of heat transfer between materials.		Photosynthesis - Students will study the process of photosynthesis and experiment to see the affect of light intensity on the rate of photosynthesis.	
			Ecology introduction - students will cover the basics of estimating plant populations.	
			Reactions of metals - Meals make up arouud 2/3 of the periodic table, and are used extensively in our day-to-day lives. In this unit students shouhld be able to understand the different reactions that meats do with oxygen, halogens and acids, explain how they are extracted from ores and discuss displacement reacitons of metals and the electrolysis of aluminum oxide.	

			Chemical Analysis - Heavily learning towards practical chemistry the chemcial analysis looks at how we can use quailtiative chemical tests to identfiy the different substances present in an unknown material. We look at process including chromatography, ion flame tests and precipitate tests.	