Alcester Academy Curriculum Planning: Key Stage 3

Department: *Science*						Year Group: 8
Term	Topic/Subject	Assessment Objectives and Knowledge (include differentiation)	Skills (include differentiation)	Literacy, Numeracy (including wider reading)	Personal Development (SMSC, British Values, Careers, Healthy Living, Citizenship Equality and Diversity, Preparation for next stages)	AFL/Summative Assessment
autumn	Diet	To understand what is meant by a balanced diet Describe the constituents of a balanced diet and their role within the body Describe how to test foods for starch, lipids and protein To explain the effects of malnutrition / deficiency Identify the parts of the digestive system To explain the role of the digestive system Explain the role of bacteria and enzyme in digestion Describe the energy requirements for different groups of people	To carry out food tests. To use information to explain the digestive process and the effects of malnutrition. Analyse information from food labels	Numeracy- Using patterns in data to evaluate risk between diet and diseases. Understanding surface area. Literacy to explain the digestive system and the processes. Interpret food labels eg per portion and 100g Use units	Impact of lifestyle choice on health (e.g. cardiovascular disease, fitness, BMI etc.) Careers in medicine.	Data **Diet and drugs**
autumn	Drugs	To understand the effects of medicinal, recreational and illegal drugs. Classify drugs into suitable groups Describe the effects of a range of drugs on the body including alcohol and tobacco Identify what is meant by passive smoking and how laws around smoking have changed Identify what is meant by addiction and withdrawal	To interpret data into the effect of drugs. Evaluate the consequences of drug use	To use data to explain the potential risk.	Effects of drugs – social and economic impacts Understanding the laws around the use of recreational drugs Effects of drugs during pregnancy Careers in medicine.	Literacy Thalidomide reading comprehension End of term test
autumn	Electricity	To be able to understand simple electrical circuits and their uses in domestic life. Identify the components that make up a	To carry out practical investigations to see	Numeracy calculating, resistant, current	Safe use of electricity. Use of electricity in	Skills **Circuit diagrams**

		circuit Identify circuits as series and parallel	patterns in current, potential difference and resistance.	and potential difference.	the modern world.	
autumn	Magnetism	To be able to understand magnetic fields. To describe how we use magnetic fields in everyday life.	To carry out practical investigations to see patterns in magnetic fields and in making electromagnets.	Wider reading- electrical bells, and elays.		
autumn	Periodic table	To be able to understand how atoms are arranged in terms of their properties To be to understand the reactivity of certain elements. To understand how the periodic table was developed	Carry out practical's to discover the properties of certain elements. To be able to use and write chemical symbols to describe a reaction. Use data to describe trends of elements.	Literacy into how the periodic table was developed. Numeracy using data's to identify properties and trends. Wider reading- research into the discovery of certain elements and their uses.	Understanding and appreciating personal influences- Celebrating the role scientists have played in our society- Mendeleev British valves- The Rule of Law Undertake safe practices, following class rules during projects and activities for the benefit of all	Exam style questions of periodicity from Activate 2 - Formative assessment
Spring	Metals and other Materials	Identify the properties of metals Identify what an acid is and how UI shows the pH scale Learn the reactivity sequence for metals and be able to apply this to individual experiment results Describe how metals react with water, acid and oxygen including the associated equations Identify the test for hydrogen Describe how metal oxides react with acids Describe metal displacement reactions and explain why they happen Explain how displacement is used to extract metals from their ores Identify where ceramics are used and their properties Describe what a polymer is and how some	Carry out practicals and record data in suitable ways including tables and graphs Use appropriate equipment safely Use equations to show reactions and balance symbol equations Use data to describe trends of elements Carry out practical's to discover the properties of metals.	Balance symbol equations Convert between units Carry out simple calculations including %including ratio Use graphs or data to extract information Wider reading around the use of plastics and polymers Wider reading- the recycling and reusing of metals	Work collaboratively in lessons Evaluate the use different materials and their environmental impact including plastics Be aware of careers around polymer sciences	End of year test Metal reactivity data assessment

		are used To understand commercial uses of materials according to their properties particularly metals.				
Spring	Energy	Identify the main stores of energy Describe how energy is transferred Explain why energy transfers are not perfect State the law of the conservation of energy Describe the difference between heat and temperature Describe how heat is transferred by conduction, convection and radiation Identify methods of insulating and reducing heat transfer Identify ways of generating electricity from both renewable and non-renewable sources Evaluate the cost of electricity and the amount used Identify how simple levers and gears work in machines To be able to explain how heat can be transferred. To be able to describe power and efficiency.	Be able to carry out simple calculations to show energy transfer and efficiency Carry out practicals and record data in suitable ways including tables and graphs Use appropriate equipment safely Evaluate various methods of insulation Evaluate the use of a variety of electricity generation methods Carry out calculations to show the cost of electricity Carry out calculations to show work done	Convert between units Carry out simple calculations including % efficiency Re-arrange simple formulae Represent transfers graphically Use graphs or data to extract information Reading comprehension clockwork radio Reading comprehension energy saving light bulbs Writing a letter to MP about renewable sources	Work collaboratively in lessons Evaluate ways of reducing heat loss and identify possible economic and environmental impacts Discuss the impact of renewable and non-renewable methods on the environment Evaluate the cost of electricity and ways of reducing energy consumption Discuss possible reasons for climate change and the impact of this	Clockwork radio reading comprehension End of year test
spring	Adaptation and inheritance	To describe how organisms are adapted to their environment. To explain the laws of inheritance and the theory of evolutions.	To explain characteristics of organisms. To be able to use Punnett square. To be able to piece evidence together to explain how it supports a theory.	Numeracy, probability from Punnett squares. Literacy explain natural selection Wider reading- origin of the species	SMSC- Discussion of genetic diseases. Debate over Darwin's theory and evolution of humans.	Design a Well adapted creature- formative. End of term test
Summer	Ecosystem processes	Describe the process of photosynthesis including the equation Identify the key structures in plants and the structure within the leaf	Be able to carry out practicals safely Write a method for testing a leaf for	Convert between units Carry out simple calculations	Discuss the use of farm chemicals and the consequences of these on humans	Quadrats assessment

		Describe how gases are exchange by diffusion Explain why plants need minerals and the consequences of these Identify what is meant by chemosynthesis Describe the process of respiration Describe the process of anaerobic respiration and how this is used by humans in food and drink production Identify the organisms within a food chain and web and their interdependence Link the use of chemicals to the food chains and potential damage	starch Make links between key processes in plants and animals Analyse data showing gas exchange and breathing / heart rate	including % Reading comprehension on carnivorous plants Reading comprehension on parasites	Understand the limitations of humans in exploring the oceans and how our knowledge changes over time Discuss vegans and vegetarians within the human food chains Work collaboratively with others	
Summer	Pressure	Describe what is meant by pressure Relate pressure to the structure of solids, liquids and gases Apply understanding of pressure to real life situations	Be able to carry out practicals safely Convert units Carry out calculations to show pressure and re-arrange the equation	Convert between units Carry out simple calculations	Consider the use of gases like hydrogen in cars and the safety implications Work collaboratively in practicals	Extended answer on using pressure

Last updated: *28/11/19*