Key Skill: Research

Time to start making decisions both as independent learners but as professionals of the future. Research is rich and ever changing- use it to inform and enrich. You also have options to make so research is key!

KEY QUESTION: Can you research strategically from a range of different sources?

Year 9

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Science	Biology **Genetics** Genetic materials Developing the DNA model inheritance	Biology **Health and disease** Pathogens, spread of disease The body's defences and immune system Antibiotics and vaccinations	Biology **Ecosystems** Biodiversity and sampling, invasive species Sustainable farming, reducing waste Oil dependency and renewable energy Fragile ecosystems		GCSE Content B1 - Key concepts in biology Cells and microscopy, enzymes, transport into and out of cells	
	Chemistry **Chemical reactions** Conservation of mass changes of state and chemical reactions. Representing chemical reactions using formulae and using equations. Combustion, thermal decomposition, oxidation and displacement reactions	Chemistry **Materials** the reactivity series of metals obtaining metals from metal oxides and displacement properties of ceramics, polymers and composites	Chemistry **The Periodic table** Atomic structure Groups in the Periodic table Ion formation, covalent molecules, giant molecules		GCSE Content C1 -States of matter C2 - Atoms, elements and compounds	

	Physics **Energy and motion:** Energy stores and transfers, Sankey diagrams Gravitational potential energy, kinetic energy and work. .	Physics **Waves and communication:** Properties of light, images; refraction and lenses, colour and dispersion. The anatomy of the eye and how we see, how a camera works Pressure waves	Physics **Energy at home** Thermal energy transfers and stores. Using insulators. Electrical power and domestic fuel bills. Renewable and non-renewable energy resources	Physics **Space mechanics** Gravitational force and orbits] Day/night, month, year, seasons, sidereal and solar days. Models of the solar system.	GCSE Content P1 - Key concepts in physics P1 - Forces and motion	
Technology	**Computer systems**, E-safety and Cyber Security -An eye-opening journey of discovery about techniques used by cybercriminals to steal data, disrupt systems, and infiltrate networks	**History of Computers** - An amazing journey through history learning about the pioneers of Computer Science.	**Python -** Using a range of programming concepts to create a piece of software - Variables, constants, selection, calculations and iteration. Students will also build on their music knowledge from year 7 by creating jingles.	**Video Manipulation** Students will use software to manipulate images and video to create a video on a topic of their choice. This unit bring together all of the skills learnt in KS3.	**Data Manipulation -** this unit builds on the spreadsheets skills the students have aquired during their year 7 and 8 studies. The unit will prepare them for the practical element of their coursework in year 10 and includes learning how to create functions inlcuding =count, =countif, and =vlookup.	**User Interfaces -** During this unit of work students will learn the different presentation techniques organisations use when creating a user interface. The final unit of the work will involve the students creating their own interface enabling them to gain the skills needed to complete their first piece of KS4 coursework at the beginning of year 10.
Engineering - DISC	**Metal Design** - You will be exploring the use of CAD to design 2 mini projects in this challenge. Firstly you will design a mini skateboard figit toy that can be cut and finished from your drawings. Secondly you will design a foldable metal animal that demonstrates your understanding of the properties of metals. You will have the chance to research metal properties in particular malleability and lustre to ensure that your finished designs demonstrate the material properties of metal itself.		**Dragons Den** - You will be challenged to taken an object from your recylcing bin at home and turn it into the basis of a commercial product. You will work with minimal additional mateirals, design multiple altenrative use for your project then carry out some market research to see which of your ideas might be the most commercially successful and to identify potential price points. You will decide which of your ideas can be developed into a business proposition, create protypes and a business proposal to present to a panel of dragons.		**Walking on Wind**- This is a project all about precision engineering! You will explore Theor Jansen's amazing wind powered walking sculptures then design and build your own wind powered walking machines. You will be encouraged to explore gears, levers and pivots as part of your design. The challenge will be to create the sculpture that can walk the furthest unaided. To make this work your measurements and accuracy will have to be spot on to ensure the mechanism functions properly.	

Art	**Clay Totems** - How can 'gothic literature' inform creative design skills. How does realism verses illustration character features differ between 2D and 3D designs.	**Clay Totems** - Explore creative character design & 3D modelling skills.	**Architecture** - What does classic architecture look like? How does local and worldwide architecture compare to one another? Explore the visual differences.	**Architecture** - How to draw in perspective. Experiment with mark and print making techniques to design beautiful buildings.	**Day of the Dead** - Explore how Mexican festivals can influence our design process. Expand artist awareness, develop design concepts & build-upon observational drawing skills.	**Day of the Dead** - Demonstrate your printing techniques. Complete mono & polyblock printing samples.
	End of Unit Assessment: Students will be assessed on how well they have demonstrated the skills and knowledge outlined within each unit. Students will receive regular verbal teacher feedback on how to improve; students will self assess their work throughout and at the end of the unit. A final summative teacher assessment will take place at the end of unit - this is all recorded in their sketchbooks.					
Maths	**Reasoning with algebra** Year 9 commences with the interleaving of two previously visited topic areas - sequences and straight-line graphs. The algebraic manipulation becomes more complex now, as do the equations with variables existing 'on both sides'. Here we use a variety of contexts e.g. angles, probability and area. We finish the term by proving conjectures using more formal algebraic methods.	**Constructing in 2 and 3 dimensions** We become more familiar with the mathematical language surrounding shapes before calculating volumes and finding missing lengths given areas and volumes. Students construct 3-D shapes from nets and become familiar with terms such as perpendicular and bisector before exploring congruency.	**Reasoning with number** We begin January by revisiting previous material in different contexts. Topics include fractions arithmetic, factors, multiples and standard form. We then extend our knowledge of HCF and LCM before developing our percentage skills to include multipliers and 'reverse percentages'. We finish the unit with an exploration into financial mathematics.	**Reasoning with geometry** We use longer chains of reasoning to evaluate angles using algebraic methods. We then investigate rotations and translations and understand variance andf invariance in the context of transformations before turning our attention to Pythagoras' Theorem.	**Reasoning with proportion** This Unit commences with investigations into enlargement and similarity. We encounter direct and inverse proportion along with practical Unit Pricing Problems ('best buys'). This enables students to examine compound measures and hence we begin an examination of speed/distance/time and density.	**Representations** Our final unit of Year 9 starts with an in depth analysis of concepts surrounding probability - in particular, relative frequency and independent events. We then consider quadratic and reciprocal graphs before entering a revision stage. Students complete their final assessment and the year is reviewed based on the data gained.

English	**Gender and Inequality' - Macbeth -** Practical exploration of Shakespeare's most bloody play. Students will be immersed in the dangerous world of eleventh century Scotland and will accompany Macbeth on his doomed journey from celebrated war hero to disgraced villain. Students will explore Shakespeare's methods and the meaning they create for his audience, and link the events of the play to the context in which it was written, particularly gender roles and the representation of women at that time.	**Gender and Inequality' - Non-Fiction Reading -** Students will consider the themes of gender and inequality using a selection of non-fiction texts, encompassing newspaper and magazine articles, speech transcripts and letters. Students will look at how the diverse range of writers inform and persuade the reader through their choice of language and structure and the implied meaning this creates for the readers. Students will look for ICDAFORREST techniques in action, as well as other relevant linguistic devices encountered through their study of fiction e.g. simile, metaphor and personification.	**Conflict and Propaganda' - Conflict Poetry -** Exploration and comparison of the four poems included in the Power & Conflict anthology that explore the struggle and conflict of the individual: Tissue, The Emigree, Checking Out Me History and Kamikaze. Students will explore poets' use of language, structure & form to create meaning for their readers and the context within which they were written. Students will develop their ability to compare poets' ideas.	**Conflict and Propaganda' - Animal Farm -** Exploration of Orwell's allegorical story that offers a clever critique of communism and universal human power struggles. Students will explore how allegory is used to create hidden meaning within a text and explore the historical and political context in which Orwell wrote the novella.	**The Writer's Craft' - Explorations in Creative Writing -** Students will explore a range of extracts that track through Susan Hill' s novel, The Woman in Black. Students will explore a range of engaging extracts that provide excellent opportunity to develop and apply the key skills of comprehension, analysis, evaluation and inference. This synoptic unit draws together the fiction analysis skills students have explored throughout KS3.	**The Writer's Craft' - An Inspector Calls -** Exploration of Priestley's politically charged 'whodunnit'. Students will explore the full play text and delve deep into each character's involvement in the tragic suicide of Eva Smith. Students will be encouraged to understand social responsibility and how our actions impact upon our wider world. Students will encounter powerful themes of social class, gender roles, inequality, prejudice, privilege, morality and the supernatural.

History and Historical Geography	Ancient medicine; You will be looking at some of the earliest know medical treatments and ideas. From the stone age to the Roman Empire. We will analyse the role that superstition played in shaping the views of these early doctors and what mistakes this caused.	Middle Ages medicine: You will be continuing to look at medical development, this time from 1066-1485 during the Middle Ages. This is a time when new discovery was discouraged, sometimes at the cost of peoples lives, and advancment was seen as something to be feard. We will look at why this was and what it ment for medical treatment. By comparing Europe and Asia during this time students will enable you to have a real sence of the geographical limitations of the time period.	Renaissance medicine: You will analyse what this age of new learning meant for medicine. How Europe moved forward from the Middle Ages and began the Age of discovery. Looking at which makes the bigger impact on developmet; individual achivment, changing public attitudes, new technology or luck plays the bigger role in progress.	Industrial (Medicine) You will look at how the Industrial Revolution transforms medicine and the impact brought about by new technology and methods of working. Looking at the progression of the new ideas formed in the Renaissance and how medicine became a more 'professional' and scientific process.	World War 1 medicine : You will look at how WW1 impacted medical practice and how the demands of war forced changes and innovation. We will look at the key events of the War as well as linking back to our year 8 topic on the First World War to understand what differences the war created and what new opportunities come from the conflict. You will use a range of sources including diaries, maps, photographs and airal photos.	Modern Medicine: With the rapid advancement in technology medicine quickly progresses to the form we would recognise today and we will be looking at what causes this progress. Is it the after effects of the two World Wars, individual genius of Scientists and Engineers, changes in attitude or the development in new technology that allows this advancement.

Physical Education:	**Basketball:** In this unit you will apply the fundamental skills and knowledge of the rules from previous learning in year 7 and 8, to competitive match play. You will develop your understanding of tactical attacking and defensive strategy planning as a team. Additionally, you will analyse your performance, identifying strengths and weaknesses to plan activities to improve your technical skills. Your understanding of the rules will be reinforced with opportunities to officiate, as well as leadership development with feedback and coaching to peers.	**Badminton:** You will develop more advanced techniques and implement and refine strategic play to outwit opponents. You will demonstrate the essential elements of attack and defence in competitive situations. To develop confidence in directing the shuttle to land in a target area so that the opponent cannot return it. Students will independently score and officiate badminton games unassisted.	**Table tennis:** In this table tennis unit, you will build on your learning from year 8, including the techniques of the individual shots such as the forehand and backhand. In this unit of work there will be a further emphasis on refining this technique so that they consistently and confidently apply it to match play, whilst also developing your tactical play. There will be a competitive element through match play to mirror that of well-known events.	**Football:** In this unit you will apply the fundamental skills and knowledge of the rules from previous learning in year 7 and 8, to competitive match play. You will develop your understanding of tactical attacking and defensive strategy planning as a team. Additionally, you will analyse your performance, identifying strengths and weaknesses to plan activities to improve your technical skills. Your understanding of the rules will be reinforced with opportunities to officiate, as well as leadership development with feedback and coaching to peers.	**Athletics:** In this unit you will apply the fundamental skills of the athletics events from previous learning in year 7 and 8, to a competitive structure. You will refine and analyse your performance in various running and jumping events to achieve your personal best and give feedback to peers to support this. You will communicate and use problem solving skills as a team as they are required to organise your own competition and take on roles such as that of a coach and time keeper.

	Concept: Effectice teams Students will understand what makes an effective team and to demonstrate effective teamwork. Students will learn to be accountable for our actions and the impact this can have on teams. Students will understand a range of conflict management skills and develop strategies to resolve conflict. Students will understand a range of communication techniques to be able to communicate effectively within a team.	**Health & Fitness:** In this unit, you will build on your learning from year 7 and 8, including the components of an effective warm-up and knowledge of the muscles in the body. There will be a further emphasis on analysing your own performance. You will reflect on the benefits of an effective training session and the implications of this to lead a healthy life in the future. Different methods of training will also be introduced where you will learn to monitor your HR and link different types of training to different sports.	**Handball:** This unit of work will build on the unit of work in Year 8 include a focus on ' fundamental skills, including overhead and bounce pass as well as effective attacking and defending strategies. More rules of handball will be introduced with students being able to understand their role within a team and link back to effective teams concept.	**Volleyball:** In this unit you will gain the opportunity to apply your previously developed hand eye coordination and net and wall tactics to a new sport of volleyball. The transferable skills from other sports such as netball and badminton will support you to access this new sport.	**Striking and fielding:** In this unit you will refine skills and techniques learned in year 7 and 8. You will demonstrate consistency, timing and fluency in the execution of techniques for batting, bowling and fielding. You will work on improving the skill of outwitting opponents. In striking and fielding games, players achieve this by striking the ball so that fielders are deceived or avoided, and then running between wickets or around bases to score runs. Pupils should be able to accurately score, coach & officiate games.	
	Assessment: Throughout the academic year, you will be assessed in every unit of work that you are taught. In each unit of work, you will be assessed in each of the three strands. The assessment criteria will corrolate and create an average based upon the level demonstatred over that unit of work. **Knowledge:** Knowledge, understanding, analysis, feedback, responsibility **Character:** Communication, leadership, respect, resilience, effort **Skills:** Physical ability, fitness levels, competition, technique, problem solving, tactics					
German	**Identity and Culture -** during this term pupils will research the history of youth hostels and learn to understand the rules of youth hostels. We will also cover daily routines using separable and reflexive verbs.	**Identity and Culture -** we will visit German cities online and learn to master giving and receiving directions using the imperative. We will also investigate German festivals and learn to describe them.	**Relationships and friends -** you will learn to describe clothes and different fashion styles and you will use the future tense to make plans for a date.	**Relationships and friends -** you will learn to describe how your date went using your previous knowledge of the past tense. You will also describe how you get ready when you plan to meet friends.	**Health and wellbeing -** you will learn to describe body parts and injuries during sporting accidents.	**Future aspirations and role models -** you will learn to describe you role model using your extensive vocab knowledge to say why they are your role model. You will also look ahead in the future and make plans and describe your aspirations.

PSHE:	**Living in the wider world** This theme covers everything you need to be a well round young adult. It includes, economical wellbeing , careers and enterprise education, as well as education for personal safety, including assessing and managing risk.	**Relationships** This theme aims to give you the information you need to help you develop healthy, nurturing relationships. It should show you what a healthy relationship looks like, including what consent is and how to look after your sexual health. This will help you understand the positive effects that good relationships have on your mental wellbeing, identify when relationships are not right and how this can be managed.	**Relationships** This theme aims to give you the information you need to help you develop healthy, nurturing relationships. It should show you what a healthy relationship looks like, including what consent is and how to look after your sexual health. This will help you understand the positive effects that good relationships have on your mental wellbeing, identify when relationships are not right and how this can be managed.	**Health and wellbeing** The health and wellbeing theme focuses on all aspects of health including sexual health and wellbeing, with the aim to gain an understanding of the link between mental and physical health, as well as providing you with the knowledge to make informed decisions on how to develop into healthy young person.	**Health and wellbeing** The health and wellbeing theme focuses on all aspects of health including sexual health and wellbeing, with the aim to gain an understanding of the link between mental and physical health, as well as providing you with the knowledge to make informed decisions on how to develop into healthy young person.	**Living in the wider world** This theme covers everything you need to be a well round young adult. It includes, economical wellbeing , careers and enterprise education, as well as education for personal safety, including assessing and managing risk.