Somervale School

Year 9 Assessment

Flightpath Descriptors

Art Year 9		Studying the work of other Artists	Using Materials, Processes and Techniques	Recording	Creating a Personal Response
Exceeding	**All**	I can plan and present my research and ideas using specialist vocabulary.	I can show sensitivity and originality in my experimentation with media and processes to meet my objectives.	I can creatively observe and record using a range of techniques.	I can present an outcome that is technically convincing and exceeds expectations.
	Most	I can confidently reproduce the work of others.	I can show fluency and take creative risks in the use of the formal elements.	I can fluently use line and expressive mark making to observe imaginatively.	I can produce a final response work that is independent, creative and exciting.
	Some	I can independently collect a range of sources with purpose to support my observations and ideas.	I can demonstrate that I have understood the characteristics of media so that I can refine and exploit them fully.	I can show tone, texture and patterns creatively and skilfully in my work.	I can produce a personal response that demonstrates confidence and skill.
Meeting	**All**	I can express personal opinions and make independent decisions about the work of others.	I can show some sensitivity and originality in my experimentation with media and processes.	I can observe and record using a range of techniques with accuracy.	I can present an outcome that is technically accurate and appropriate to intentions.
	Most	I can reproduce the work of others accurately.	I can experiment with and refine my use of a range of materials.	I can use line and expressive mark making to observe imaginatively.	I can produce a personal response that is creative and exciting.
	Some	I can collect a range of sources to support my observations and ideas.	I can understand the characteristics of different media.	I can show tone, texture and patterns confidently in my work.	I can produce a personal response that demonstrates increasing confidence and skill.
Developing	**All**	I can evaluate some thoughts, feelings or intentions expressed in the work of other artists.	I can use materials, processes and techniques with improved control.	I can record my ideas with increasing confidence.	I can produce an outcome which demonstrates some learning and creativity.
	Most	I can explore the work of other artists practically through my creative developments.	I can refine my work as I use media, techniques and processes.	I can use line with expression and some imagination.	I can create a response that demonstrates creative use of media.
	Some	I can annotate my work using some subject specific vocabulary.	I can experiment with materials, processes and techniques.	I can show tone, texture and patterns creatively in my work.	I can produce a response that shows I have met my objectives, intentions and ideas.

Design Technology Year 9		Investigation and Context	Design, development and planning	Making	Testing and Evaluation	Knowledge
Exceeding	**All**	My specification is linked to the findings of my research. I can analyse my research independently and explain how the information will influence my final product.	My ideas are based on my feedback. I have used CAD modelling to present my final design My plan of making considers measurable Quality Control Checks	Highly skilful and creative product covering a range of materials/ingredients and skills/processes.	My evaluation clearly takes into account how my product is influenced/effects social, moral, cultural and environmental issues.	I can use my knowledge to plan/create a product that accurately fits the user needs.
	Most	My specification is thorough, well justified and covers all required criteria to design and make my product. I can evaluate my research and suggest ways I can improve my research in the future.	I have asked what people think of my ideas. I have tested my design against my specification I explain the feedback and use this in my design My plan of making includes detailed health and safety points	My product is fully functional with an excellent finish.	I can evaluate my work for its commercial viability. I can justify the methods of manufacture chosen to make my product by comparing it to other alternative manufacture methods.	I can justify why I have selected the processes for my product and decisions I have been made.
	Some	I can write a detailed specification independently 9 point's minimum, 6 of which are measureable. I can justify a few of my points in detail. I can independently research and explain how this relates to the context/product I am going to make.	I have considered the social, moral, spiritual and cultural impacts my ideas. My plan of making considers timings for each stage.	My product is accurately made giving it a high quality finish and includes a variety of materials/ingredients and complex skills/processes.	I can test most aspects of my ideas/finished product and refine them against needs of the user/specification taking into account the views of my target market.	I have a broad knowledge of different skills, materials, components, ingredients and processes.
Meeting	**All**	I can write a detailed specification independently 9 point's minimum, 6 of which are measureable. I can give basic justification to a few points. I can independently collect a range of relevant information closely relating to the context.	I can create a wide variety of creative and innovative ideas. I have used my model to help me develop my design to a final solution. My plan of making considers basic Quality Control Checks.	My product is accurately made and functions adequately/well. Overall I have achieved a good level of finish.	I can discuss how I have solved problems during my design/development/ making.	I can apply my knowledge and understanding by responding to several aspects of the context.

	Most	I can write a specification independently. At least 7points are measurable. I can give basic justification to a few points. I can use my research to influence my designing/planning.	I can say how suitable my ideas are for my user. My designs meet a few of my specification points. My plan of making considers basic Health and Safety points.	I have started to include some high level skills/processes and I have clearly mastered use of tools and equipment.	I can compare my product with the main points of my specification/plan and suggest how the specification/product/plan could be changed to improve the final outcome.	I understand the properties and performance of the materials/ingredients I have used and how this can effect social/moral/cultural situations.
	Some	I can write a specification independently. At least 6 points are measurable. My research relates closely to the context or user needs.	I can label materials and justify why I have chosen these, based on their properties. My plan of making refers to equipment.	I worked mostly independently. Parts of the product are accurately made giving a good overall finish.	I can accurately test my product and use this feedback to suggest changes.	I can apply some aspects of my knowledge and understanding to the context.
Developing	**All**	I can write a specification independently. At least 5 points are measurable. I can begin to independently choose the types of research I will gather.	I can sketch a range of original ideas. I have modelled my idea with a degree of accuracy. My detailed plan of making refers to quantities.	I worked mostly independently. My product works effectively and has a few imperfections.	I can test some aspects of my product and use the results to write evaluative comments.	I can name and describe all of the key information, skills, techniques and equipment I have used.
	Most	I can write a thorough specification with some guidance. It has a minimum of 7 points, 4 of which are measurable. I can research from a range of sources and analyse it.	My designs meet at least two of my specification points. My plan of making includes information about techniques and materials.	I rarely needed help while making my product. My finished product was made with a range different materials/ingredients and skills/processes.	I can reflect on my own work and suggest ways to improve.	I can name and explain the health and safety issues related to the tools/equipment/processes I have used.
	Some	My specification is detailed with most points relating to my research. I have 3+ measurable points. I collect accurate information that considers the context given. I can briefly explain what I have found out and say how useful this information is.	I can label my ideas to show how the different parts of my products will be made. I have explained how the designs work. I can independently produce a basic plan of making.	During the making of my product I have used a few basic skills with growing independence.	I can say or write www/EBI for both practical and written work.	I can name and describe most of the key information, skills, techniques and equipment I have used.

Music Year 9		Performing	Composing	Listening	Appraising	Music Technology
Exceeding	All	I can perform accurately, fluently and confidently using range of suitable dynamics	I can compose a new piece in a given style using a full range of melodic and harmonic ideas	I can explore different musical processes and contexts of a range of musical styles	I can provide accurate verbal and written feedback using correct musical terms with specific examples	I can use automation in Logic to make appropriate changes to track volumes. I can create a title page in Sibelius to complete my score
	Most	I can perform accurately and fluently and make effective use of tempo changes	I can compose within a full structure using some chords suitable to my melody	I can explore musical devices and how they reflect time, place and culture	I can make accurate judgements on how music has been created uses some appropriate musical language	I can use the quantize tool to amend timings of tracks in Logic. I can add phrase markings in Sibelius
	Some	I can perform accurately using staccato and legato technique	I can compose in a given style and make use of basic structural conventions such as verses and choruses	I can explore musical devices and analyse musical features	I can evaluate how different cultural conventions affect how music is created	I can use the velocity tool to make subtle changes to note volumes in Logic. I can use repeat bars and add changes in tempo in Sibelius
Meeting	All	I can perform accurately using the correct two hand technique	I can compose a new section in a given style in two part harmony	I can describe how different styles of music are used in different occasions	I can evaluate how venue, time and place affect how music is created	I can use reverb to tracks in Logic or use the expression tool to add dynamics in Sibelius
	Most	I can perform some parts with two hands at the same time	I can compose a new section in a given style using a wider range of pitches and rhythms	I can describe how changes in dynamics and tempo alter the mood of a piece of music	I can evaluate how venue and time affect musical outcomes	I can add EQ to tracks in Logic or make changes to articulation in Sibelius
	Some	I can perform some parts from memory	I can compose a new section in a given style using a range of suitable pitches	I can identify and describe the different timbres of instruments	I can justify musical decisions made in my own work	I can colour code tracks in Logic or label instruments in Sibelius

Developing	**All**	I can perform accurately, confidently and fluently using the correct hand technique	I can successfully improvise a melody using a range of pitches and rhythms within a given style	I can describe how instruments, tempo, pitch, dynamics and rhythm work together in a range of musical styles	I can compare and contrast different pieces of music using the correct musical terms	I can record/input several parts accurately and create a balanced piece
	Most	I can accurately perform using the correct hand technique	I can improvise using a given set of notes and rhythms	I can describe how instruments, tempo, pitch and dynamics work together in a range of musical styles	I can compare and contrast different pieces of music using some correct musical terms	I can layer multiple parts together
	Some	I can accurately perform using mostly correct hand technique	I can improvise a simple melody using repeated notes and rhythms	I can describe how instruments, tempo and pitch work together in a range of musical styles	I can compare different pieces of music using some correct musical terms	I can edit mistakes within a project

MFL Year 9		PHONICS	VOCABULARY	GRAMMAR
Exceeding	All	I can accurately read, pronounce and use a wide range Spanish/French words, including unfamiliar vocabulary, applying secure knowledge of graphemes and phonemes studied.	I can use a wide range of vocabulary correctly in a variety of contexts and apply my knowledge of vocabulary accurately in new contexts. I can accurately apply synonyms etc. to produce/understand rich, varied and interesting texts.	I can use at least three tenses accurately, including irregular verbs and negative forms. I know how to accurately apply a wide range grammatical rules to produce rich, varied and interesting texts.
	Most	I can accurately read, pronounce and use a wide range Spanish/French words, including some unfamiliar vocabulary, applying secure knowledge of graphemes and phonemes studied.	I can use a wide range of vocabulary correctly in a variety of contexts and apply my knowledge of vocabulary accurately in new contexts. I can accurately apply synonyms etc. to produce/understand rich and interesting texts.	I can use three tenses accurately, including irregular verbs and negative forms. I know how to accurately apply a wide range grammatical rules to produce rich, varied and interesting texts.
	Some	I can accurately read, pronounce and use a wide range Spanish/French words, including some unfamiliar vocabulary, applying secure some knowledge of graphemes and phonemes studied.	I can use a wide range of vocabulary correctly in a variety of contexts and apply my knowledge of vocabulary accurately in new contexts. I can sometimes apply synonyms etc. to produce/understand rich and interesting texts.	I can use three tenses accurately, including irregular verbs and negative forms. I know how to apply a wide range grammatical rules to produce rich, varied and interesting texts.
Meeting	All	I can accurately read, pronounce and use a range Spanish/French words, including some unfamiliar vocabulary, applying sound knowledge of graphemes and phonemes studied.	I can use a wide range of vocabulary correctly in a variety of contexts and apply my knowledge of vocabulary accurately in new contexts. I can sometimes apply synonyms etc. to produce/understand interesting texts.	I can use three tenses with some accuracy, including irregular verbs and negative forms. I know how to apply a wide range grammatical rules to produce rich, varied and interesting texts
	Most	I can accurately read, pronounce and use a range Spanish/French words, attempting unfamiliar vocabulary, by applying some knowledge of graphemes and phonemes studied.	I can use a range of vocabulary correctly in a variety of contexts and apply my knowledge of vocabulary accurately in new contexts. I can sometimes apply synonyms etc. to produce/understand interesting texts	I can use three tenses with some accuracy, including irregular verbs and negative forms. I know how to apply a wide range grammatical rules to produce interesting texts
	Some	I can read, pronounce and use a range Spanish/French words with some accuracy, attempting unfamiliar vocabulary, by applying some knowledge of graphemes and phonemes studied.	I can use a range of vocabulary correctly in a variety of contexts and apply my knowledge of vocabulary accurately in new contexts with some success. I can sometimes apply synonyms etc. to produce/understand interesting texts	I can use two tenses accurately, including some irregular verbs and negative forms. I know how to apply a wide range grammatical rules to produce interesting texts
Developing	All	I can read, pronounce and use a range Spanish/French words with some accuracy, attempting unfamiliar vocabulary by applying some knowledge of graphemes and phonemes studied	I can use a range of vocabulary correctly in a variety of contexts and apply my knowledge of vocabulary accurately in new contexts with some success. I can produce/understand interesting texts	I can use two tenses accurately, including some irregular verbs and negative forms. I know how to apply a range grammatical rules to produce interesting texts
	Most	I can read, pronounce and use a range Spanish/French words with some accuracy, occasionally attempting unfamiliar vocabulary by applying some knowledge of graphemes and phonemes studied	I can use a range of vocabulary in a variety of contexts and apply my knowledge of vocabulary in new contexts with some success. I can produce/understand interesting texts	I can use two tenses accurately, attempting some irregular verbs and negative forms. I know how to apply a range grammatical rules to produce interesting texts

	Some	I can read, pronounce or use familiar Spanish/French words with some accuracy, occasionally attempting unfamiliar vocabulary by applying some knowledge of graphemes and phonemes studied	I can use familiar vocabulary in a variety of contexts and apply my knowledge of vocabulary in new contexts with some success. I can produce/understand interesting text	I can attempt two tenses with some accuracy, attempting some irregular verbs or negative forms. I know how to apply grammatical rules to produce texts

Year 9 Geography		
Exceeding	**All**	○ I can recall a wider variety of information about physical and human environments, show some understanding and knowledge of these environments ○ I can recognise the inter-relationships between processes ○ I can recall the reasons why countries have different characteristics, referring to the key development indicators ○ I can begin to understand that physical and human environments will involve interactions between physical and human processes ○ I can understand that these processes can help develop geographical patterns ○ I can understand how the relationship between people and environments inter-link ○ I can show some awareness that values and attitudes to environments will vary ○ I can select a position on a geographical issue and justify using the advantages of a solution ○ I can evaluate or assess a geographical issue ○ I can use some examples ○ I can show I have a clear understanding of cartographic and map skills ○ I can communicate my findings in more detail with plausible conclusions offered
	Most	
	Some	
Meeting	**All**	○ I can recall basic information about physical and human environments ○ I can demonstrate simplistic knowledge of location ○ I can demonstrate how human and physical factors can influence a region's level of development and how these change over time ○ I can understand simple physical and human processes ○ I can begin to understand that the different views of people will have different effects on how environments are used and managed ○ I can give detailed explanations of why things happen ○ I can begin to evaluate information and reach basic conclusions ○ I can use information to demonstrate their geographical understanding of an issue ○ I can show I have a good understanding of how cartographical and map skills can be used ○ I can demonstrate a range of graphical skills and can interpret different types of photographs from a range of different landscapes ○ I can offer a brief evaluation that is often focused on one aspect
	Most	
	Some	
Developing	**All**	○ I can recall basic information about physical and human environments ○ I can show a basic level of knowledge of specific locations ○ I can develop my understanding of the reasons why places have different regions, using the key development indicators ○ I can show some understanding of geographical ideas, but these are demonstrated simply

	Most	○ I can show there is some recognition of the physical and human processes involved ○ I can recognise that people have different values and attitudes to changes of the physical and human environments ○ I can describe in detail using appropriate geographical terminology ○ I can compare information or issues identifying similarities/differences ○ I can begin to explain why things happen ○ I can fully recognise the patterns made by physical and human features ○ I can use a range of OS map skills ○ I can produce outcomes which are simplistic with a range of key terminology used
	Some	

Year 9 History		
Exceeding	**All**	• My knowledge is highly detailed, enabling me to analyse and evaluate complex issues surrounding the time period/ event I am studying. • I can independently structure my work into a coherent and sophisticated piece of writing that shows originality. • I can analyse sources in their historical context and can fully evaluate them for their utility and reliability. • I can make an argument for the most valid interpretation, based on my own factual knowledge, and make a judgement. • I can construct my own criteria to analyse historical significance. I can explain the relationship between significance criteria.
	Most	• I can recall detailed information about several time periods and deploy this effectively to support my points. • I can fully address challenging and complex historical questions and debates. • I can use highly detailed and wide-ranging examples and key words. My spelling and punctuation is consistently accurate. • My answers are consistently fluent and well-written, using a range of specialist historical terms. • I can include highly detailed evidence in my work (names, dates, facts and statistics). • I can fully explain why there are different historical interpretations and how they are influenced.
	Some	• I have a strong chronological picture and can make some comparisons across time periods. • I can analyse change and continuity and can evaluate the pace, type and amount of change. • I can fully explain reasons for an historical event, explain the relationship between them and reach a sustained judgement about the causes. • I can fully explain complex similarities and differences arising from broader historical contexts.
Meeting	All	• I can analyse the key issues surrounding the time period/ event I am studying, independently, and with original thought. • I can produce well-structured, fluent answers to historical questions which fully address the question. • I can use detailed examples and key words, spelt correctly. • My writing is largely error free.
	Most	• I can begin to analyse historical sources and judge how useful and reliable they are. • I can explain why there are different historical interpretations. I have a good chronological picture and can recognise how time periods are different. • I can analyse change and continuity and can assess the pace, type and amount of change. • I can fully explain reasons for an historical event, explain how they are linked together and begin to evaluate the most important cause.
	Some	• I can analyse and begin to evaluate the similarities and differences across time periods. • I can explain why some people/ events are significant in comparison to others, using criteria. • I can include detailed evidence in my work (names, dates, facts and statistics).
Developing	**All**	• I can explain the key issues surrounding the time period/ event I am studying, using information (names, dates, statistics and facts). • I can produce structured, answers to historical questions which answer the question well. I can use detailed examples and key words. • My writing makes sense, and follows spelling, punctuation and grammar rules.

	Most	• I can identify different historical interpretations and can begin to explain why they are different. • I can recognise different time periods and make basic comparisons between them. • I can recognise and describe different types and amounts of change, and can begin to make judgements about the pace of change.
	Some	• I can explain reasons for an historical event and explain how they are linked together. • I can begin to explain why some people/ events are significant in comparison to others. • I can recognise that people's lives have been different throughout History and can describe these differences, as well as similarities. • I can understand historical sources and begin to judge how useful and reliable they are.

Year 9 PB		
Exceeding	**All**	○ I can complete accurate research from relevant sources of wisdom/ authority including religious sources. ○ I can weigh up a range of viewpoints, analyse the results and come to a conclusion. ○ I can come to my own conclusions about the truth, meaning and purpose of life using examples from history and society. ○ I can show thorough knowledge and understanding as well as accuracy of religion and belief when responding to the question. ○ I can give two developed reasons for beliefs. ○ I can identify information/ issues and make superficial connections among a limited range of elements in the question, underpinned by isolated elements of understanding and belief. Judgements are supported by generic arguments to produce a conclusion that is not fully justified. ○ I can refer to a relevant source of wisdom/ authority in my answer and the connection to the question is clear. ○ I can make superficial connections among many, but not all of the elements in the question, underpinned by a limited understanding of religion and belief. ○ I can make judgements of a limited range of elements in the question. Judgements are supported by an attempt to appraise the evidence, much of which may be superficial, leading to a conclusion that is fully justified.
	Most	
	Some	
Meeting	**All**	○ I can explain how and why different answers to ultimate questions, beliefs and practises have developed within religions. ○ I can express in depth insights into the relationship between beliefs, teachings and world issues using detailed examples. ○ I can explain in depth how and why different answers to ultimate questions, beliefs and practises have developed within religions, with reference to specific denominations. ○ I can express in depth insights into the relationship between beliefs, teachings and world issues using detailed examples. ○ I can use a wide religious and philosophical vocabulary to show a coherent understanding, including historical context, of a range of religions and beliefs. ○ I can give my personal view with reasons and examples on what value both religious, and non-religious views, might have for understanding what is important to me and to other people.
	Most	
	Some	
Developing	**All**	○ I can give reasons for people's beliefs and explain where these beliefs come from using basic examples and some religious vocabulary. ○ I can ask questions about things that are important to me and suggest answers to these questions. ○ I can give reasons for people's beliefs and explain where these beliefs come from using examples and a wide religious vocabulary. ○ I can ask questions about things that are important to me and others and suggest detailed answers to these questions. ○ I can give detailed reasons for people's beliefs and explain where these beliefs come from using examples and a wide religious vocabulary and sources. ○ I can ask complex questions about things that are important to me and others and suggest detailed answers to these questions.
	Most	
	Some	

Year 9 PE		Competitive Team	Competitive Individual	Creative	Health
Exceeding	**All**	I have excellent knowledge of what I need to do in all situations & I show an excellent level of tactical awareness. I can accurately evaluate performance and give as detailed feedback as a trained coach. I can consistently & effectively use advanced skills and techniques in a game situations. I always demonstrate outstanding leadership qualities and I am a role model to my peers. I am able to plan & execute ways to improve others' performances.	I have an excellent knowledge of what I need to do in all situations & I show an excellent level of tactical awareness. I can accurately evaluate performance and give as detailed feedback as a trained coach. I can consistently & effectively use advanced skills and techniques in a competitive situations. I always demonstrate outstanding leadership qualities and I am role model to my peers. I am able to plan & execute ways to improve others' performances.	I have an excellent understanding of theoretical content and I can apply it any performance. I can accurately evaluate performance and give as detailed feedback as a trained coach. I can consistently combine advanced movements with success and performance is fluid and effortless. I always demonstrate outstanding leadership qualities and I am a role model to my peers. I am able to plan & execute ways to improve others' performances.	I have an excellent understanding of theoretical content and I can apply it any performance. I can accurately evaluate performance and give as detailed feedback as a trained coach. I have an outstanding level of fitness and I can complete a range of exercises with accuracy and consistency. I always demonstrate outstanding leadership qualities and I am a role model to my peers. I am able to plan & execute ways to improve others' performances.
	Most				
	Some				
Meeting	**All**	I have an excellent knowledge of what I need to do in many situations & I can apply the rules to my advantage. I can accurately evaluate performance and give detailed, motivational feedback for improvement. I can apply advanced skills in a game situation with excellent accuracy. I can demonstrate good leadership qualities. I am able to plan & execute ways to improve others' performances.	I have an excellent knowledge of what I need to do in many situations & I can apply the rules to my advantage. I can accurately evaluate performance and give detailed, motivational feedback for improvement. I can apply advanced skills in a competitive situation with excellent accuracy. I can demonstrate good leadership qualities. I can plan & execute ways to improve others' performances.	I have a really good understanding of theoretical content and I can apply it my own performance. I can accurately evaluate performance and give detailed, motivational feedback for improvement. I can consistently combine advanced movements with success and my performance is fluid. I can demonstrate good leadership qualities. I am able to plan & execute ways to improve others' performances.	I have a really good understanding of theoretical content and I can apply it my own performance. I can accurately evaluate performance and give detailed, motivational feedback for improvement. I have an above average level of fitness for their age and can complete a number of exercises with accuracy and consistency. I can demonstrate good leadership qualities. I am able to plan & execute ways to improve others' performances.
	Most				
	Some				

Developing	**All** **Most** **Some**	I have excellent knowledge of what I need to do in some situations & I have an excellent knowledge of the rules. I can accurately evaluate performance and give detailed feedback for improvement. I can apply basic and advanced skills in a game situation. I can occasionally demonstrates good leadership qualities. I am sometimes able to plan & execute ways to improve my performance.	I have an excellent knowledge of what I need to do in some scenarios & I have an excellent knowledge of the rules. I Can accurately evaluate performance and give detailed feedback for improvement. I can apply basic and advanced skills in a competitive situation. I occasionally demonstrate good leadership qualities. I am sometimes able to plan & execute ways to improve my performance.	I show a good knowledge of basic and advanced theoretical content. I can accurately evaluate performance and give detailed feedback for improvement. I can combine advanced movements with success is starting to show consistency. I occasionally demonstrate good leadership qualities. I am sometimes able to plan & execute ways to improve my performance.	I show a good knowledge of basic and advanced theoretical content. I can accurately evaluate performance and give detailed feedback for improvement. My effort levels are high and I am able to sustain a good level of fitness across a range of activities. My technique for certain exercises is usually accurate. I can occasionally demonstrate good leadership qualities. I am sometimes able to plan & execute ways to improve my performance.

IT Year 9		Term 1 Understanding Computers	Term 2 Graphics	Term 3 Networks	Term 4 Artificial Intelligence	Term 5 & 6 iDEA
Exceeding	**All** **Most** **Some**	Identify input and output devices for more complex scenarios Know how characters are encoded using the ASCII system Be able to use an ASCII reference chart to convert a character into binary and its decimal equivalent	Know how to use the advanced facilities of a graphics package, for example to manipulate, cut out, and alter images Know how to create a series of two or more posters in the same style, using a combination of layered images and fonts effectively to convey a message	Know how to design a network layout for their school, using icons to represent server, hub, switch, router, Internet, workstation, printer Know the concept of cloud computing and some of the benefits it brings to individuals and organisations	Know the strengths and weaknesses of machine learning Know and understand how bias can be introduced into AI algorithms and machine learning Know about the opportunities and problems of using AI for sentiment analysis Understand why interpreting patterns is not as useful a skill as 'thinking'	
Meeting	**All** **Most** **Some**	Know simple binary arithmetic Know strengths and weaknesses of different storage devices Understand at a basic level how data is stored on a CD	Know the characteristics of bitmap and vector graphics and state the advantages of each and give examples of situations in which each would be appropriate Know how to use fonts consistently and carefully to convey a particular message or image Know how to use white space effectively Know how to use layers in the creation of an artwork	Know the meaning and significance of bandwidth Know what is meant by buffering and why it is know how to used Know the advantages and disadvantages of different network topologies Know how to design a simple network layout Identify some of the extra hardware components and know how to use in a LAN Know how to compare the uses of peer-to-peer networks and client-server networks	Know the rules needed to solve problems including: Classification and Navigation of a maze or road Understand the difference between facts and rules Know the uses of machine learning Know the importance of training data to create rules that solve problems of categorising data Understand what ethics is Understand ethical issues as they relate to AI Understand how jobs can be affected by AI and automation Understand issues that make facial recognition difficult Understand how images are stored as binary data Be aware of techniques for detecting patterns in a grid of pixels know how to program a chatbot Understand the analysis of text to rate an attitude or opinion	

Developing	**All**	Distinguish between hardware and software Give examples of computer hardware and software Name different types of permanent storage device Suggest appropriate input and output devices for a simple scenario Know what RAM and ROM are used for Show how numbers and text can be represented in binary Know the impact of future technologies	Know that bitmap images are made up of individual pixels Know that in the case of a vector graphic, properties such as position, fill, stroke colour and dimensions are stored Know how to and manipulate a simple group of objects to form a logo design Know how to change the saturation, brightness and contrast in an image Know how to add text to a graphic Know how to use a graphics package to know how to an artwork; for example, a movie poster	Know that the Internet is a wide area network and the world wide web is part of the Internet Know the meaning of the terms “domain name”, http protocol Know the basic principle of packet switching Give examples of LANs and WANs Know about three different network topologies Know what is meant by a client-server network and state some of its advantages Know why some transmissions are encrypted, and know how to use a simple algorithm to encrypt and decrypt a message	Understand the origin and uses of AI Understand how rules are used in AI decision making Understand what ethics means Consider some simple ethical hypothetical problems Understand how intelligence can be measured in humans and computers Know what the Turing test is and how it works	
	Most					
	Some					

Maths Year 9		*Number & Ratio*	*Algebra & Graphs*	*Geometry & Measure*	*Probability & Statistics*
Exceeding	**All**	In a formal assessment I have demonstrated I can answer questions on the following topics: 83n Estimate roots of any given positive number by first simplifying surds 82n Simplifying surds by taking out square factors 81n Converting between recurring decimals and fractions 79n Evaluate positive or negative fractional powers of whole numbers 75n Estimate powers of a given number and roots of positive numbers up to 15^2 or 10^3	In a formal assessment I have demonstrated I can answer questions on the following topics: 80a Factorise quadratic expressions with a non-unitary coefficient of x^2 76a Solve quadratic equations that require rearranging first or arise from geometry problems 75a Know the quadratic formula and use it to solve quadratic equations 70a Form the equation of a line by reading the gradient and y-intercept and use y = mx + c form to identify parallel lines 69a Find the gradient of a straight line graph and interpret it as a rate of change (e.g. velocity or acceleration)	In a formal assessment I have demonstrated I can answer questions on the following topics: 92s Provide algebraic proof of the circle theorems 76s Apply Pythagoras' theorem to 3D diagrams or to find the distance between two coordinates 72s Use the volume or surface area formulae for cones and spheres 69s Calculating the surface area of a cylinder (or half-cylinder or quadrant) giving answers approximately or in terms of π 66s Solve problems requiring either multiple steps of Pythagoras or amending a diagram to locate a right-angled triangle	In a formal assessment I have demonstrated I can answer questions on the following topics: 69d Explain that correlation does not imply causation in a given context 61d Use set notation including {},A´, Ø, ∩ and U to refer to Venn diagrams
	Most	In a formal assessment I have demonstrated I can answer questions on the following topics: 77n Evaluate 1/n fractional powers of whole numbers 70n Calculate compound interest using a percentage multiplier 67n Using percentage multipliers for change and understand the effect of multiplying by numbers above or below 1 66n Writing a change as a percentage	In a formal assessment I have demonstrated I can answer questions on the following topics: 84a Expanding and simplifying three or more brackets 67a Reading roots or solutions from intercepts of graphs of non-linear functions 66a Simplifying expressions by applying index laws more than once or to several terms 62a Plotting graphs of non-linear quadratic, cubic or reciprocal functions	In a formal assessment I have demonstrated I can answer questions on the following topics: 80s Calculate angles using five circle theorems and provide full geometric arguments 75s Use three circle facts to calculate angles 63s Use SOH CAH TOA trigonometry to calculate angles in right-angled triangles 58s Know the ruler and compass constructions for perpendicular lines and bisectors	In a formal assessment I have demonstrated I can answer questions on the following topics: 71d Find the combined mean of two sets of data or calculate a new mean when extra data is added 70d Distinguish between interpolation and extrapolation in line of best fit estimates and comment on reliability

			60a Solve difficult linear equations with brackets and fractions	56s Use ruler and compass to construct loci according to a list of instructions	
	Some	In a formal assessment I have demonstrated I can answer questions on the following topics: 74n Add, Subtract, Multiply or Divide numbers in standard form without a calculator 72n Evaluate negative powers or reciprocal of whole numbers 65n Calculate compound interest using repeated percentage change 62n Use inequalities to specify error due to truncation or rounding	In a formal assessment I have demonstrated I can answer questions on the following topics: 63a Solving quadratic equations by factorising (unitary coefficient of x^2) 57a Selecting the correct factorisation for a quadratic expression, one bracket, two brackets or difference of two squares 54a Forming and solving equations arising from shape, measure or word problems	In a formal assessment I have demonstrated I can answer questions on the following topics: 61s Know and use the sum of angles in polygons and find angles in diagrams including regular polygons 60s Enlarge a shape from a given centre including fractional scale factors and fully describe an enlargement 59s Use a perpendicular to find the shortest distance from a point to a line 57s Calculate the volume of a cylinder giving answers approximately or in terms of π 53s Calculate angles using parallel lines (including reversing bearings) and provide full geometric arguments	In a formal assessment I have demonstrated I can answer questions on the following topics: 62d Plot frequency polygons and state the modal class or the class containing the median from a grouped frequency table
Meeting	**All**	In a formal assessment I have demonstrated I can answer questions on the following topics: 64n Calculate with numbers in standard form using a calculator 63n Converting small numbers to and from standard form 59n Solving problems using a combination of percentages, fractions and ratio 58n Rounding to significant figures 55n Using a Venn diagram with prime factors to evaluate LCM of bigger numbers	In a formal assessment I have demonstrated I can answer questions on the following topics: 56a Factorising quadratic expressions (unitary coefficient of x^2) 52a Expand and simplify pairs of brackets 49a Write algebraic formulae from a written description 48a Solve equations with x on both sides and solving inequalities by algebraic manipulation	In a formal assessment I have demonstrated I can answer questions on the following topics: 65s Calculate lengths in similar 2D shapes 54s Rotate a shape from a given centre on a coordinate grid and fully describe a rotation 51s Use Pythagoras' theorem to find hypotenuse or short side or check if a triangle is right-angled 50s Calculating the area or circumference of a circle giving answers approximately or in terms of π	In a formal assessment I have demonstrated I can answer questions on the following topics: 59d Calculate the mean, mode or median from a frequency table 51d Draw a scatter graph, comment on correlation and use a line of best fit to make estimates 49d Draw and read from tables and line graphs for time series data

			39a Plotting graphs of straight lines including horizontal and vertical lines	44s Solve speed-distance-time problems (including converting minutes to hours when necessary)	
	Most	In a formal assessment I have demonstrated I can answer questions on the following topics: 69n Multiplying or dividing mixed numbers 60n Adjust a recipe or check it there are enough ingredients to make a given number 57n Converting large numbers to and from standard form 52n Putting fractions, decimals and percentages in order 48n Find a fraction of a fraction and multiply Fractions	In a formal assessment I have demonstrated I can answer questions on the following topics: 53a Factorising into single brackets 51a Expand and simplify expressions with multiple single brackets 37a Substitute positive and negative, whole or decimal values into expressions or formulae and evaluate 30a Writing and interpreting algebraic expressions from a written description	In a formal assessment I have demonstrated I can answer questions on the following topics: 52s Reflect a shape on a coordinate grid and describe a reflection stating the equation of the mirror 48s Translate a shape by a vector on a coordinate grid and describe a translation 47s Drawing plans and elevations of 3D shapes 43s Construct triangles and nets using ruler, protractor and compass 39s Calculate the area of a compound shape	In a formal assessment I have demonstrated I can answer questions on the following topics: 58d Calculate the angles and draw a pie chart from data in a table 48d Read and interpret pie charts including working out fractions or totals for each category 46d Sort sets of numbers into a Venn diagram
	Some	In a formal assessment I have demonstrated I can answer questions on the following topics: 53n Write a number as a product of primes using a factor tree and know that this product is unique 50n Divide Fractions 49n Add or Subtract Fractions 45n Converting fractions to percentages or decimals using equivalent fractions, or division on a calculator 42n Solve proportion problems by a unitary method	In a formal assessment I have demonstrated I can answer questions on the following topics: 42a Solve equations with brackets 40a Expand single brackets 33a Simplify expressions by multiplying terms -	In a formal assessment I have demonstrated I can answer questions on the following topics: 46s Work out the midpoint between two coordinates 27s Calculate the area and perimeter of a rectangle 26s Use the sum of angles at a point or on a line or vertically opposite to calculate angles 24s Show how a shape tessellates 23s Area and perimeter of shapes made from 1 cm^2	In a formal assessment I have demonstrated I can answer questions on the following topics: -

Developing	**All**	In a formal assessment I have demonstrated I can answer questions on the following topics: 38n Converting between decimals and percentages (and to fractions) 31n Adding integers 29n Converting between fractions and mixed numbers 28n Use a written method of division and utilising remainders to give an accurate or approximate answer 23n Use a written method of multiplication with 2/3 digit whole numbers	In a formal assessment I have demonstrated I can answer questions on the following topics: 34a Using BIDMAS to evaluate numerical expressions (without powers and roots) 32a Solve equations formally by using 1/2 inverse operations 28a Using a two-step formula written in words both forwards and backwards 23a Recognising arithmetic, geometric, quadratic or Fibonacci patterns and continuing sequences 21a Determine the functions in 1/2 step function machines from a list of inputs and outputs	In a formal assessment I have demonstrated I can answer questions on the following topics: 37s Reading timetables and using them to plan journeys 29s State the order of rotational symmetry of a 2D shape and show what a shape would look like rotated by 90^o or 180^o 18s Use a compass to draw a circle of a given radius or diameter	In a formal assessment I have demonstrated I can answer questions on the following topics:
	Most	In a formal assessment I have demonstrated I can answer questions on the following topics: 51n Increase or decrease an amount by a percentage and calculate simple interest	In a formal assessment I have demonstrated I can answer questions on the following topics: 44a Using the nth term rule of a sequence to find a given term 32a Solve equations formally by using 1/2 inverse operations 29a Simplify expressions by collecting terms	In a formal assessment I have demonstrated I can answer questions on the following topics: 22s Reading scales on measuring instruments and deciding appropriate metric units for a measurement 21s Calculating lengths of time and converting between hours, minutes and seconds 15s Measuring lines accurately and understand and use the terms horizontal, vertical and diagonal	In a formal assessment I have demonstrated I can answer questions on the following topics:
	Some	In a formal assessment I have demonstrated I can answer questions on the following topics:	In a formal assessment I have demonstrated I can answer questions on the following topics:	In a formal assessment I have demonstrated I can answer questions on the following topics:	In a formal assessment I have demonstrated I can answer questions on the following topics:

		45n Converting fractions to percentages or decimals using equivalent fractions, or division on a calculator 38n Converting between decimals and percentages (and to fractions) 37n Multiplying and dividing integers 36n Identify prime numbers and checking if a number is prime 31n Adding integers		37s Reading timetables and using them to plan journeys 29s State the order of rotational symmetry of a 2D shape and show what a shape would look like rotated by 90^o or 180^o 28s Measure and draw angles accurately (including obtuse and reflex angles) 25s Plotting and reading coordinates in all 4 quadrants 23s Area and perimeter of shapes made from 1 cm^2	

Science Year 9		*Chemistry*			
		Earth's Resources	**The Atmosphere**	**Chemical Analysis**	**Organic Chemistry**
Exceeding	**All**	I can fully evaluate alternative biological methods of metal extraction, given appropriate information. I can fully carry out simple comparative LCAs for other products contain different material to paper and plastic, when information is given.	I can fully interpret evidence and evaluate different theories about the Earth's early atmosphere when information is given.	I can fully describe multiple test needed to determine the content of pure unknown compounds. I can fully interpret an instrumental result given appropriate data in chart or tabular form, when accompanied by a reference set in the same form, limited to flame emission spectroscopy.	I can fully compare the structures of alkene and alkanes.
	Most	I can fully carry out simple comparative LCAs for shopping bags made from plastic and paper. I can fully evaluate ways of reducing the use of limited resources, given appropriate information.	I can give all reasons why actions may be limited for response to climate change. I can fully evaluate the quality of evidence in a report about global climate change, given appropriate information.	I can determine distance of solvent front or the distance of dye using the Rf equation from a chromatograms, without support of an equation.	I can fully describe the uses of fractions in the fractional distillation.
	Some	I can compare the similarities and differences in treatment of ground water and salty water based on geographical location.	I can fully discuss the scale, risk and environmental implications of global climate change. I can describe actions to reduce emissions of carbon dioxide and methane. .	I can describe all of the steps in order to carry out a chromatography. I can fully explain how paper chromatography separates mixtures in terms of distribution of a substance between the mobile and stationary phase.	I can begin to compare the structure and reactions of alkene and alkanes.

Meeting	**All**	I can begin to evaluate alternative biological methods of metal extraction, given appropriate information. I can describe phytomining and bioleaching as methods to extract copper. I can fully describe experiments and interpret results to show that both air and water are necessary for rusting.	I can begin to interpret evidence and evaluate different theories about the Earth's early atmosphere when information is given. I can describe briefly four potential effects of global climate change. I can describe uncertainties in the evidence base for human activities contributing to greenhouse gases and climate change. I can recognise the importance of peer review of results and of communicating results to a wide range of audiences for evidence of global warming and climate change. I can give some reasons why actions may be limited for response to climate change.	I can begin to describe multiple test needed to determine the content of pure unknown compounds. I can determine Rf values from chromatograms without support of an equation.	I can give examples to illustrate the usefulness of cracking. They should also be able to explain how modern life depends on the uses of hydrocarbons.
	Most	I can extract and interpret information about resources and use orders of magnitude to fully evaluate the significance of data. I can begin to carry out simple comparative LCAs for shopping bags made from plastic and paper. I can describe the problems of selective or abbreviated LCAs and describe the consequences of using these. I can begin to evaluate ways of reducing the use of limited resources, given appropriate information. I can recall the names of the salts produced when ammonium salts or	I can begin to evaluate the quality of evidence in a report about global climate change, given appropriate information. I can fully describe the greenhouse effect in terms of the interaction of short and long wavelength radiation with matter. I can describe how carbon monoxide, soot (carbon particles), sulphur dioxide and oxides of nitrogen are produced by burning fuels. I can describe the conditions needed for how carbon monoxide, soot (carbon particles), sulphur dioxide and oxides of nitrogen are produced by burning fuels. I can explain the environmental problems caused by increased amounts of these pollutants using given information. Limited to carbon dioxide, carbon monoxide, soot (carbon	Suggest how chromatographic methods can be used for distinguishing pure substances from impure substances. I can describe most of the steps in order to carry out a chromatography. I can begin to explain how paper chromatography separates mixtures in terms of distribution of a substance between the mobile and stationary phase. I can write balanced equations for the reactions to produce the insoluble metal hydroxides.	I can write balanced equations for the complete combustion of hydrocarbons. I can begin to describe the uses of fractions in the fractional distillation.

		phosphate rock is treated with nitric acid, sulphuric acid and phosphoric acid. I can recall the starting material for ammonia salts and nitric acid.	particles), sulphur dioxide and oxides of nitrogen		
	Some	I can extract and interpret information about resources and use orders of magnitude to begin to evaluate the significance of data. I can make comments on the relative ease of obtaining potable water from waste, ground and salt water. I can describe methods of preventing rusting. I can begin to describe experiments and interpret results to show that both air and water are necessary for rusting. I can explain sacrificial protection in terms of relative reactivity. I can interpret and evaluate the composition and uses of alloys, given appropriate information. I can explain how low density and high density poly(ethene) are both produced from ethene. I can explain the difference between thermosoftening and thermosetting polymers in terms of their structures.	I can explain the reasons for increase in oxygen and decrease in carbon dioxide from the early Earth's atmosphere to the present day atmosphere. I can describe and explain the formation of deposits of limestone, coal, crude oil and natural gas. I can write balanced symbol equations for the formation of carbon monoxide, soot (carbon particles), sulphur dioxide and oxides of nitrogen are produced by burning fuels. I can predict the products of combustion of a fuel, given appropriate information about the composition of the fuel and the conditions in which it is used. I can begin to discuss the scale, risk and environmental implications of global climate change.	I can identify the mobile and stationary phases in a chromatography experiment. I can describe the method to form precipitates to identify unknown solution of metal ions. I can recall of precipitates when sodium hydroxide is added to solutions of copper (II), iron (II) and iron (III), aluminium, calcium and magnesium ions. I can recall the test and results for carbonates. I can interpret chromatograms for example: pure vs mixture; solubility of spot; determining composition of formulation. I can determine Rf values from chromatograms using given equation.	I can recall how boiling point, viscosity and flammability change with increasing molecular size. I can recall the colour change when bromine water reacts with an alkene.
Developing	**All**	I can extract and interpret information about resources from charts, graphs and tables and perform simple calculations for example: differences; percentages; percentage increase or decrease.	I can recall two human activities that increase the amounts of each of the greenhouse gases carbon dioxide and methane.	I can use melting point and boiling point data to distinguish pure from impure substances.	I can explain how fractional distillation works in terms of evaporation and condensation.

		I can describe the stages needed to produce potable water in hot countries by using seawater. I can make simple comments in the LCAs for shopping bags made from plastic and paper. I can describe the stage needed in the treatment of waste water. I can describe the different properties in low-carbon and high-carbon steel. I can recall the uses of brass, bronze, and low-carbon steel and high-carbon steel. I can describe the condition and steps needed make soda-lime glass, borosilicate glass & clay ceramics. I can choose the best mixture for an NPK fertiliser using given information.	I can begin to describe the greenhouse effect in terms of the interaction of short and long wavelength radiation with matter. I can write word equations for the formation of carbon monoxide, soot (carbon particles), sulphur dioxide and oxides of nitrogen are produced by burning fuels. I can describe the environmental problems caused by increased amounts of these pollutants. Limited to carbon dioxide, carbon monoxide, soot (carbon particles), sulphur dioxide and oxides of nitrogen	I can describe some of the steps in order to carry out a chromatography. I can recall the flame colours that identify lithium, sodium, potassium, calcium and copper ions and vice versa. I can recall the test and results for chloride, bromide and iodide ions. I can state the reasons for using instrumental analysis.	
	Most	I can define finite and renewable resources and distinguish between the two, given appropriate information. I can describe the stages needed to produce potable water from the ground, lakes, rivers or reservoirs. I can describe the benefits of reducing, reusing, and recycling materials in terms of resources, energy and environmental impact.	I can describe the main changes in the atmosphere over time.	I can recall examples of formulations. I can identify formulations, given appropriate information. I can draw and label the set-up of a chromatography experiment. I can describe the flame test method to determine the metal ion in a compound. I can recall the test and results for sulfate ions.	I can state the names of the first 5 alkane and alkene.

		I can recall the percentages of gold in 24 and 18 carat gold. I can describe the materials needed to make soda-lime glass, borosilicate glass & clay ceramics. I can describe a composite and be able to recall examples of composites.			
	Some	I can state names of natural products that are supplemented or replaced by agricultural and synthetic products. I can describe the difference between pure and potable water. I can state materials that can and cannot be recycled. I can define corrosion, rusting & sacrafical metal. I can state the metals in alloys of brass, bronze & steel. I can define ceramics & polymers. I can state the elements needed for an NPK fertiliser.	I can state the composition of the earth's atmosphere past and present. I can state the names of greenhouse gases.	I can define formulation and pure and distinguish them from the meaning of pure in everyday terms. I can recall tests and results for hydrogen, oxygen, carbon dioxide and water.	I can recognise substances as alkanes.

Science Year 9		*Physics*			
		Energy	**Forces (Interactions)**	**Forces (Motion)**	**Space**
Exceeding	**All**	I can consistently apply multiple equations in the same question. I can fully describe the environmental impact arising from the use of different energy resources. I can fully explain patterns and trends in the use of energy resources.	I can consistently apply multiple equations in the same question.	I can consistently apply multiple equations in the same question. I can explain the dangers caused by large decelerations I can estimate the forces involved in the deceleration of road vehicles in typical situations on a public road. I can use the concept of momentum as a model to describe and explain examples of momentum in an event, such as a collision.	I can research and compare explanations from different periods in history about the motion of objects and structure of the universe. I can explain how scientists are able to use observations to arrive at theories such as the big bang theory. Understand that there is still much about the universe that is not understood, for example dark mass and dark energy.
	Most	I can fullly plan the investigation of dropping a ball to determine the transfer of gravitational energy store to kinetic energy store. I can fully compare ways that different energy resources are used, the uses to include transport, electricity generation and heating	I can fully interpret the data and graph relationship between force and extension; using this to fully describe the difference between elastic deformation and inelastic deformation caused by stretching forces.	I can interpret and evaluate measurements from simple methods to measure the different reaction times of students I can evaluate the effect of various factors on thinking distance based on given data. I can explain the factors which affect the distance required for road transport vehicles to come to rest in emergencies, and the implications for safety	I can explain why places on the earth experience different daylight hours and amounts of sunlight during the year. I can explain that the change of each galaxy's speed with distance is evidence of an expanding universe. I can explain how red-shift provides evidence for the big bang model.

				I can estimate how the distance required for road vehicles to stop in an emergency varies over a range of typical speeds.	
	Some	I can consistently recall all of the following equations, substitute values, rearrange the subject using algebra and calculate the value of the subject: g. p. e. = mass × grav. field strength × height kinetic energy = 0.5 × mass × speed^2 power = energy transferred ÷ time power = work done ÷ time efficiency = (useful power ÷ output power) x 100 I can describe ways to increase the efficiency of an intended energy transfer.	. I can fully plan an investigation of the relationship between force and extension	I can interpret enclosed areas in velocity–time graphs to determine distance travelled (or displacement) I can explain that inertial mass is a measure of how difficult it is to change the velocity of an object I can explain that inertial mass is defined as the ratio of force over acceleration. I can apply newton's third law to examples of equilibrium situations. I can plan a method to measure human reaction times.	I can complete diagrams to describe the different phases of the moon. I can state that fusion processes lead to the formation of new elements. I can explain qualitatively the red-shift of light from galaxies that are receding
Meeting	**All**	I can describe all of the steps in a method needed to determine the specific heat capacity of one or more materials. I can explain ways of reducing unwanted energy transfers, for example through lubrication and the use of thermal insulation. I can plan investigation to determine the best conductor of heat using 3 rods of materials. I can mostly compare ways that different energy resources are used,	I can confidently use vector diagrams to illustrate resolution of forces, equilibrium situations and determine the resultant of two forces, to include both magnitude and direction (scale drawings only).	I can explain qualitatively, with examples, that motion in a circle involves constant speed but changing velocity. I can plot velocity–time graphs from measurements and interpret lines and slopes to determine acceleration. I can measure, when appropriate, the area under a velocity–time graph by counting squares. I can apply newton's first law to explain the motion of objects moving with a uniform velocity and objects where the speed and/or direction changes.	I can compare data on planets in the solar system such as diameter/distance from sun/temperature. I can describe how, at the start of a star's life cycle, the dust and gas drawn together by gravity causes fusion reactions. I can describe that fusion reactions lead to an equilibrium between the gravitational collapse of a star and the expansion of a star due to fusion energy.

		the uses to include transport, electricity generation and heating			
	Most	I can recall most of the following equations, substitute values and calculate values without rearrangement: g. p. e. = mass × grav. field strength × height kinetic energy = 0.5 × mass × speed^2 power = energy transferred ÷ time power = work done ÷ time efficiency = (useful power ÷ output power) x 100 I can recognise and substitute values into equations: elastic potential energy = 0.5 × spring constant × extension2 change in thermal energy = mass × specific heat capacity × temperature change I can give examples that illustrate the definition of power e.g. comparing two electric motors that both lift the same weight through the same height but one does it faster than the other. I can describe how the rate of cooling of a building is affected by the thickness and thermal conductivity of its walls.	I can describe the difference between a linear and non-linear relationship between force and extension.	I can draw distance–time graphs from measurements; extract and interpret lines and slopes of distance– time graphs.	I can describe the appearance of planets or moons from diagrams showing their position in relation to the earth and sun. I can describe the similarities and distinctions between the planets, their moons, and artificial satellites.
	Some	I can describe most of the steps in a method needed to determine the	I can describe the interaction between pairs of objects which produce a force on each object. The forces to be represented as vectors.	I can determine speed from a distance–time graph.	I can describe a year in terms of the earth's orbit around the sun

		specific heat capacity of one or more materials. I can define a closed system, give examples where there are energy transfers in a closed system, that there is no net change to the total energy. I can describe, with examples, how in all system changes energy is dissipated, so that it is stored in less useful ways. This energy is often described as being 'wasted'. I can mostly plan the investigation of dropping a ball to determine the transfer of gravitational energy store to kinetic energy store.	I can mostly plan an investigation of the relationship between force and extension ; using this to mostly describe the difference between elastic deformation and inelastic deformation caused by stretching force		
Developing	**All**	I can describe some of the changes involved in the way energy is stored when an object or domestic appliance changes. I can state the law of conservation of energy. I can state what I meant when people say "energy is lost" I can state which resources are more reliable and give example when of some energy resources are not reliable.	I can use free body diagrams to describe qualitatively examples where several forces lead to a resultant force on an object, including balanced forces when the resultant force is zero. I can recognise and be able to use the symbol for proportionality, $\propto$ I can give examples of the forces involved in stretching, bending or compressing an object	I can explain the vector–scalar distinction as it applies to displacement, distance, velocity and speed.	I can describe the day and night cycle in terms of the earth's rotation.
	Most	I can substitute values into the following equations when given: g. p. e. = mass × grav. field strength × height kinetic energy = 0.5 × mass × speed^2 power = energy transferred ÷ time power = work done ÷ time	I can substitute values into the following equations when given: Weight = mass x gravitational field strength work done = force x distance Force = spring constant x extension elastic potential energy = 0.5 × spring constant × extension^2 Moment of a force = force x distance	I can substitute values into the following equations when given: distance = speed x time Acceleration = change in velocity / time taken Final velocity^2 - initial velocity^2 = 2 x acceleration x distance Force = mass x acceleration	I can state the solar system is a tiny part of a galaxy, one of many billions in the universe.

		efficiency = (useful power ÷ output power) x 100 I can state the names of energy resources that are used on Earth and distinguish between renewable and non-renewable energy resources.	Pressure = force/area Pressure = height of column x density of the liquid x gravitational field strength I can calculate relevant values of stored energy and energy transfers. I can describe the energy transfer involved when work is done.		
	Some	I can state the names of energy stores in common situations. I can define and recall units of energy, mass, height, extension, temperature, work done, power, time and know efficiency is either a decimal or a percentage. I can state the names of apparatus/equipment needed to determine the specific heat capacity of one or more materials. I can state examples of reducing unwanted energy transfers in the building of heat efficient homes.	I can define scalar, vector, magnitude, contact forces, non-contact forces, and work done. I can recall the units of weight, mass, work done, force, distance, extension, electric potential energy, moment of a force, pressure, area, density I can calculate the resultant of two forces that act in a straight line. I can describe examples of the forces acting on an isolated object or system I can state the apparatus and equipment needed for investigation of the relationship between force and extension.	I can define distance, displacement, speed, velocity. I can recall typical values of speed for a person walking, running and cycling. I can state a displacement in terms of both the magnitude and direction.	I can name the planets in our solar system.

Science Year 9		*Biology*	
		Cells and Transportation	**Organisation**
Exceeding	**All**	I can fully evaluate the practical risks and benefits of therapeutic cloning, as well as social and ethical issues, of the use of stem cells in medical research and treatments. I can partially compare the similarities and difference between diffusion, osmosis and active transport.	I can fully evaluate the advantages and disadvantages of treating cardiovascular diseases by drugs, mechanical devices or transplant.
	Most	I can fully plan an investigating the action of disinfectants and antibiotics. I can calculate cross-sectional areas of colonies or clear areas around colonies using πr^2 in standard form. I can fully explain adaptations to surface area to volume ratio and exchange surfaces in the following examples: small intestine and lungs in mammals, gills in fish, and the roots and leaves. I can fully calculate the percentage gain or loss of water uptake using osmosis investigation data.	I can fully explain how the structure of root hair cells, xylem and phloem are adapted to their functions. I can fully explain the effect of changing temperature, humidity, air movement and light intensity on the rate of transpiration.
	Some	.I can fully describe how microscopy techniques have developed over time and the differences between a lens microscope and electron microscope. I can fully describe therapeutic cloning for humans and plants.	I can describe all of the key stages to test food for carbohydrates, lipids and proteins. I can discuss all the different risk factors that can lead to ill health both mentally and physically. I can fully discuss the human and financial cost of these non-communicable diseases to an individual, a local community, a nation or globally. I can describe how stomata and guard cells regulate the diffusion of water and gas exchange in a leaf/plant.
Meeting	**All**	I can calculate the order of magnitude larger/smaller organelles are to the size of the cell. Including use of standard form. I can calculate the number of bacteria in a population after a certain time if given the mean division time. I can fully describe therapeutic cloning for humans. I can fully calculate the surface area to volume ratio in the context of diffusion. I can partially explain adaptations to surface area to volume ratio and exchange surfaces in the following examples: small intestine and lungs in mammals, gills in fish, and the roots and leaves I can partially plan an investigation of one variable in an osmosis investigation. I can partially calculate the percentage gain or loss of water uptake using osmosis investigation data.	I can all of the key steps to determine a factor that affect enzyme activity. I can describe the relationship between health and disease and the interactions between different types of disease. I can describe what sampling is when collection data related to health/disease patterns. I can also discuss the benefits of sampling in terms of time and money. I can explain how the structures of plant tissues are related to their functions. I can partially explain how the structure of root hair cells, xylem and phloem are adapted to their functions.
	Most	I can fully describe differences between eukaryotes and prokaryotes cells. I can carry out calculations involving magnification, real size and image size without the given formula. I can fully describe the key stages of needed for looking at cells under a microscope and	I can describe how the hearts natural resting heart rate is controlled by a group of cell and explain how artificial pacemakers are used to correct irregularities in the heart rate. I can partially evaluate the advantages and disadvantages of treating cardiovascular diseases by drugs, mechanical devices or transplant.

		draw organelles or cells in an appropriate way. I can fully describe the aseptic technique for the culture of bacteria. I can partially plan an investigating the action of disinfectants and antibiotics. I can calculate cross-sectional areas of colonies or clear areas around colonies using πr^2. I can apply my knowledge of mitosis and recognise or describe situations where mitosis is occurring in a new situation. I can compare the similarities and difference in stems cells from embryos, bone marrow and meristem tissue in plants.	I can state examples of risk factors that can lead to ill health. I can partially discuss the human and financial cost of these non-communicable diseases to an individual, a local community, a nation or globally. I can fully identify a correlation between 2 variables in data in relation to incidence of diseases by looking at data plotted on a graph. I can state and discuss both lifestyle and genetic factors for developing cancer. I can describe how xylem and phloem transport substances in plants.
	Some	I can fully explain how the organelles in animal, plant and bacterial cells are related to their functions. I can calculate the order of magnitude larger/smaller organelles are to the size of the cell. I can partially describe how microscopy techniques have developed over time and the differences between a lens microscope and electron microscope. I can partially describe the key stages of needed for looking at cells under a microscope and draw organelles or cells in an appropriate way. I can partially describe the aseptic technique for the culture of bacteria. I can identify where stems cells are located in humans and plants. I can partially describe therapeutic cloning. I can partially plan an investigation of one variable in an osmosis investigation. I can calculate the percentage of water uptake using osmosis investigation data. I can partially compare the similarities and difference between diffusion, osmosis and active transport	I can describe the production, storage and use of bile in the digestive system. I can describe most of the key stages to test food for carbohydrates, lipids and proteins. I can plan most of the key steps to determine a factor that affect enzyme acitivity. I can describe all of the ways the lungs is adapted for gaseous exchange. I can explain how the structure of these vessels relates to their functions. I can describe either advantages or disadvantages of treating cardiovascular diseases by drugs, mechanical devices or transplant. I can draw, read from and interpret tables, charts and graphs relating to the following incidences of disease; transpiration in plant. I can compare the similarities and differences of benign and malignant tumours. I can describe how the tissue in leaves are adapted to carry out their roles in the organ.
Developing	**All**	I can describe the function of most organelles in animal, plant and bacterial cells. I can state names of specialised cells and define differentiated cells. I can define what a stem cell is. I can carry out calculations involving magnification, real size and image size with the given formula: magnification = size of real image/object. I can describe the 3 key stages of how a cell divides (mitosis). I can explain how the 3 factors that affect the rate of diffusion. I can describe examples of active transport: Mineral ions movement in plants and sugar movement in the gut.	I can calculate the rate of activity for chemical reactions of an enzyme. I can describe word equations for the catalytic breakdown of large molecules to smaller molecules using amylase, proteases and lipases. I can describe how the body uses the products of digestion. I can describe some of the ways the lungs is adapted for gaseous exchange. I can locate where the group of cells control the hearts natural resting heart rate. I can explain how blood cells are adapted to their function. I can define communicable and non-communicable disease and give examples of each. I can describe the functions for the structures of plant tissues.
	Most	I can partially state differences between eukaryotes and prokaryotes cells. I can use estimations to relative size of each organelle (when a scale drawing is given) and explain when they should be used to judge the relative size or area of organelles. I state the names of different microscopy techniques. I can, when given information, identify 3 stages of the cell cycle. I can, with given information, partially calculate the surface area to volume ratio in the context of diffusion. I can calculate the rate of water uptake using osmosis investigation data.	I can describe the function of each organ in the digestive system. I can describe the factors that affect the activity of an enzyme. I can name where amylase, proteases and lipases and produced in the body. I can describe key features each of the 3 blood vessels. I can calculate the rate of blood flow or rate of transpiration, using data given. I can recognise different types of blood cells in a photograph or diagram. I can describe the issues of specific cardiovascular diseases such as problems with coronary heart disease, heart valves, and heart failure.

	Some	I can name and label the organelles in animal, plant and bacteria cells. I can state the names of equipment and stains needed for looking at cells under a microscope. I can state the time it takes to for bacteria to complete binary fission. I can state the names of apparatus/equipment for the culture of bacteria. I can define and identify the locations of nucleus, chromosomes, gene, DNA. I can define diffusion and state 3 factors that affect the rate of diffusion. I can define osmosis and active transport. I can state the names of apparatus/equipment needed for an osmosis investigation.	I can define and compare the relative sizes of cells, tissues, organs and organ systems. I can name and identify the locations of organs in the digestive system. I can describe the stages of 'lock and key' mechanism of an enzyme. I can some of the apparatus/equipment needed to test food for carbohydrates, lipids and proteins. I can plan some of the key steps to determine a factor that affect enzyme activity. I can name and label the structures of the heart and lungs. I can describe the basic function of the heart and lungs. I can state the names and functions of key components of blood. I can state what cancer is and how it grows. I can name and label key structures of plant tissues.

Year 9 Physical Education		Competitive Team	Competitive Individual	Creative	Health
Exceeding	**All**	I have excellent knowledge of what I need to do in all situations & I show an excellent level of tactical awareness. I can accurately evaluate performance and give as detailed feedback as a trained coach. I can consistently & effectively use advanced skills and techniques in a game situations. I always demonstrate outstanding leadership qualities and I am a role model to my peers. I am able to plan & execute ways to improve others' performances.	I have an excellent knowledge of what I need to do in all situations & I show an excellent level of tactical awareness. I can accurately evaluate performance and give as detailed feedback as a trained coach. I can consistently & effectively use advanced skills and techniques in a competitive situations. I always demonstrate outstanding leadership qualities and I am role model to my peers. I am able to plan & execute ways to improve others' performances.	I have an excellent understanding of theoretical content and I can apply it any performance. I can accurately evaluate performance and give as detailed feedback as a trained coach. I can consistently combine advanced movements with success and performance is fluid and effortless. I always demonstrate outstanding leadership qualities and I am a role model to my peers. I am able to plan & execute ways to improve others' performances.	I have an excellent understanding of theoretical content and I can apply it any performance. I can accurately evaluate performance and give as detailed feedback as a trained coach. I have an outstanding level of fitness and I can complete a range of exercises with accuracy and consistency. I always demonstrate outstanding leadership qualities and I am a role model to my peers. I am able to plan & execute ways to improve others' performances.
	Most				
	Some				
Meeting	**All**	I have an excellent knowledge of what I need to do in many situations & I can apply the rules to my advantage. I can accurately evaluate performance and give detailed, motivational feedback for improvement. I can apply advanced skills in a game situation with excellent accuracy. I can demonstrate good leadership qualities. I am able to plan & execute ways to improve others' performances.	I have an excellent knowledge of what I need to do in many situations & I can apply the rules to my advantage. I can accurately evaluate performance and give detailed, motivational feedback for improvement. I can apply advanced skills in a competitive situation with excellent accuracy. I can demonstrate good leadership qualities. I can plan & execute ways to improve others' performances.	I have a really good understanding of theoretical content and I can apply it my own performance. I can accurately evaluate performance and give detailed, motivational feedback for improvement. I can consistently combine advanced movements with success and my performance is fluid. I can demonstrate good leadership qualities. I am able to plan & execute ways to improve others' performances.	I have a really good understanding of theoretical content and I can apply it my own performance. I can accurately evaluate performance and give detailed, motivational feedback for improvement. I have an above average level of fitness for their age and can complete a number of exercises with accuracy and consistency. I can demonstrate good leadership qualities. I am able to plan & execute ways to improve others' performances.
	Most				
	Some				

Developing	**All** **Most** **Some**	I have excellent knowledge of what I need to do in some situations & I have an excellent knowledge of the rules. I can accurately evaluate performance and give detailed feedback for improvement. I can apply basic and advanced skills in a game situation. I can occasionally demonstrates good leadership qualities. I am sometimes able to plan & execute ways to improve my performance.	I have an excellent knowledge of what I need to do in some scenarios & I have an excellent knowledge of the rules. I Can accurately evaluate performance and give detailed feedback for improvement. I can apply basic and advanced skills in a competitive situation. I occasionally demonstrate good leadership qualities. I am sometimes able to plan & execute ways to improve my performance.	I show a good knowledge of basic and advanced theoretical content. I can accurately evaluate performance and give detailed feedback for improvement. I can combine advanced movements with success is starting to show consistency. I occasionally demonstrate good leadership qualities. I am sometimes able to plan & execute ways to improve my performance.	I show a good knowledge of basic and advanced theoretical content. I can accurately evaluate performance and give detailed feedback for improvement. My effort levels are high and I am able to sustain a good level of fitness across a range of activities. My technique for certain exercises is usually accurate. I can occasionally demonstrate good leadership qualities. I am sometimes able to plan & execute ways to improve my performance.

Year 9 English Writing	Applied Knowledge Checklist	Y9
Step 5	• My work ethic and attitude to learning is **exemplary** • I can communicate my ideas with **fluency** and **sophistication** • I can adapt my register convincingly to suit the purpose and audience • I can structure my writing seamlessly with structural devices uses to shape the reader's response • I can link and connect my ideas with fluency and precision • I can choose sophisticated vocabulary and a range of advanced linguistic techniques to influence the reader • I can vary sentence types and openers with confidence and precision • My spelling is almost always accurate including a range of ambitious and sophisticated vocabulary • I can use a range of punctuation to clarify meaning with accuracy and precision	**Exceeding All** **Exceeding All** **Exceeding All**
Step 4	• I show **pride** in my work and a thirst for learning • I can communicate my ideas with **confidence** • I begin to adapt my register convincingly to suit the purpose and audience • I can structure my writing to shape the reader's response • I begin to link and connect my ideas with fluency and precision • I can choose sophisticated vocabulary and advanced linguistic techniques to shape the reader's response • I begin to vary sentence types and openers with confidence and precision • I can spell most words accurately including ambitious and sophisticated vocabulary • I can use a range of punctuation with accuracy and precision	**Exceeding Most** **Exceeding Some** **Meeting All**
Step 3	• My work shows I **care** about doing well • I can communicate my ideas **clearly** and for effect • I can match my register to the purpose and audience • I can structure my writing into clearly sequenced paragraphs • I can link and connect my ideas within and between paragraphs • I can choose some ambitious vocabulary and linguistic techniques to create specific effects • I can vary sentence types and openers for effect • I can spell most complex words correctly including some ambitious vocabulary • I can use a range of punctuation correctly including commas and semicolons	**Meeting Most** **Meeting Some** **Developing All**
	• I take **some** care in my work • I can communicate my ideas with **some success** • I begin to match my writing to the purpose and audience	**Developing Most**

Step 2	• I can structure my writing into paragraphs • I begin to link and connect my ideas within and between paragraphs • I begin to choose vocabulary and some techniques for effect • I begin to use a range of sentences types and openers • I can spell most simple and common words correctly (including homophones) • I can punctuate sentences correctly with full stops and capital letters	**Developing Some** **Developing Some**
Step 1	• I **begin** to communicate my ideas with some success • My ideas are sometime connected • I can use basic vocabulary and attempt to use simple techniques for effect • I can write in sentences • I sometimes spell simple and common words correctly • I attempt to punctuate my work and sometimes use capital letters correctly	**Developing Some** **Developing Some** **Developing Some**

Year 9 English Speaking	**Applied Knowledge Checklist** **For use in a range of contexts including formal presentations, improvised and planned performance and participation in debate**	**Y9**
Step 5	• I can explore sophisticated ideas and issues with insight and **fluency** • I can speak with **fluency** and **precision** with a strong command of Standard English • I can organise and structure my ideas to shape my audience's response • I vary my tone, volume and emphasis with **sophistication** • I use facial expression, hand gestures and eye-contact with **subtlety** and **precision** • I keep my audience engaged and entertained with a range of effective techniques • I listen to others with maturity and insight	**Exceeding All** **Exceeding All** **Exceeding All**
Step 4	• I can explore complex ideas and issues with **confidence** • I can speak with **confidence** using Standard English • I can organise and structure my ideas with confidence and for effect • I vary my tone, volume and emphasis in a **convincing** way • I use facial expression, hand gestures and eye-contact to aid communication with confidence • I can engage my audience with confidence using a range of effective techniques • I listen to others with interest and sensitivity	**Exceeding Most** **Exceeding Some** **Meeting All**

Step 3	• I can express and explain relevant ideas and emotions with **clarity** • I can speak **clearly** with appropriate use of Standard English • I can organise and structure my ideas **clearly** to meet the needs of the audience • I can adapt my tone, volume and pitch for effect • I use use facial expression, hand gestures and eye-contact to aid communication • I can engage my audience and maintain their interest • I listen to others with understanding and respect	**Meeting Most** **Meeting Some** **Developing All**
Step 2	• I can express **straightforward** ideas and emotions with some relevant detail • I **begin** to speak clearly with some use of Standard English • I **begin** to organise and structure my ideas • I **begin** to adapt my tone, volume and pitch for effect • I **begin** to use facial expression, hand gestures and eye-contact to aid communication • I **begin** to engage my audience • I **begin** to listen to others with understanding and respect	**Developing Most** **Developing Some** **Developing Some**
Step 1	• I can express **simple** ideas and emotions with some relevant detail • I **attempt** to communicate my ideas, feeling and emotions • I **attempt** to organise and structure my ideas • I **attempt** to engage my listener(s) • I **attempt** to listen to others	**Developing Some** **Developing Some** **Developing Some**

Year 9 English Reading	**Applied Knowledge Checklist**	**Y9**
	• My work ethic and attitude to learning is **exemplary** • I can respond to tasks and texts with **perceptive** ideas • I can embed a range of quotations/references with **precision** • I can zoom in to examine details and zoom out to **explore** big ideas • I can identify a range of methods using **precise** and **sophisticated** terminology • I can confidently **evaluate** the effects of writers' methods and their intended effects on the reader/audience	**Exceeding All** **Exceeding All**

Step 5	• I demonstrate **perceptive** understanding of the significance of contexts • I can make **perceptive** comparisons within and/or between texts • I can write with an **academic** style and extend my ideas fully	**Exceeding All**
Step 4	• I show **pride** in my work and a thirst for learning • I begin to respond to tasks and texts with **perceptive** ideas • I can embed a range of quotations/references with increasing **fluency** • I can zoom in to examine details and zoom out to consider big ideas • I can identify a range of methods including some **sophisticated** terminology • I begin to **explore** the effects of writers' methods and their intended effects on the reader/audience • I demonstrate some **perceptive** awareness of the significance of contexts • I begin to make **perceptive** comparisons within and/or between texts I begin to write with an **academic** style and extend my ideas in detail	**Exceeding Most** **Exceeding Some** **Meeting All**
Step 3	• My work shows I **care** about doing well • I can respond to tasks and texts with **clarity** and **detail** • I can embed a range of quotations/references to support my ideas • I can zoom in on details for close examination • I can identify a range of writer's methods using **relevant** terminology • I can **examine** the effects of writers' **methods** and their effects on the reader/audience • I show **clear** awareness of relevant contexts • I can make **clear** comparisons within and/or between texts I can write with an **appropriate** style and develop my ideas	**Meeting Most** **Meeting Some** **Developing All**
Step 2	• I take **some** care in my work • I can respond to texts with my own thoughts and ideas • I can select **some** quotations/references to support my ideas • I begin to zoom in on details • I can identity **some** writers' methods using **basic** terminology • I can **explain** the effect of writers' choices and their effect on the reader/audience • I show **some** awareness of contexts • I can make **some** comparisons within and/or between texts • I begin to write in an appropriate style and attempt to develop my ideas	**Developing Most** **Developing Some** **Developing Some**
	• I show basic understanding of the topic • I begin to respond to texts with my own ideas	**Developing Some**

Step 1	• I begin to select some quotations/references to support my ideas • I begin to **comment** on the effect of writers' choices • I make some attempt to respond to the task	**Developing Some** **Developing Some**