2. CURRICULUM IMPLEMENTATION OVERVIEW PLAN

Key Stage 3

Subject: Computer Science

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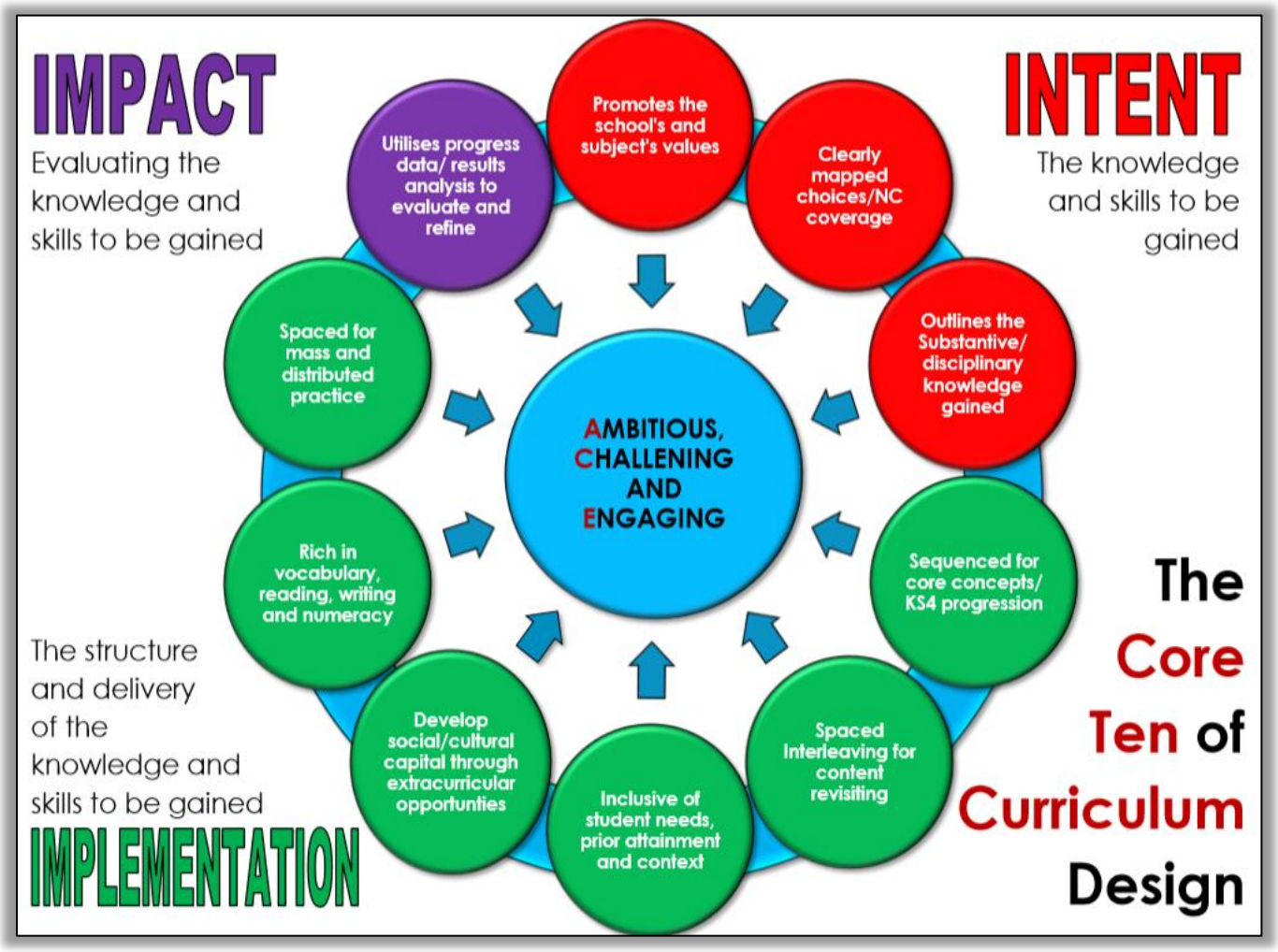

Document(s) which inform this Curriculum Implementation are:

1. Curriculum Intent Overview Plan (KS3)

THINKING PROCESS - CURRICULUM IMPLEMENTATION OVERVIEW PLAN – KS3

IMPLEMENTATION – SEQUENCING AND PRACTICE

How are your topics sequenced below so as to ensure the following:

- key concepts are ordered and taught, so as to support progression to more challenging material
- content and concepts ordered to support progression from KS2 and to KS4
- topics are spaced between unrelated topics, to allow thinking time; then revisited and furthered
- mass practice (end of topic assessments)are used to evaluate the knowledge and skills gained
- distributed practice (mini assessments) are used where content/topics are reassessed in shortened versions, at later spaced out intervals

YEAR		Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Assessments designed to not be linear	**Unit/Topic**	Unit: Introduction to ICT Topics: 1. Emails 2. Presentation Skills 3. E Safety 4. British Values	Unit: Modelling Data Topics 1. Spreadsheet Basics 2. Spreadsheet Calculations 3. Collecting Data 4. Data Analysis	Unit: Networks Topics: 1. Networks and Protocols 2. Hardware and Software 3. Wired / Wireless networks 4. The internet	Unit: Programming Topics: 1. Animation and Movement 2. Game Basics 3. Graphics 4. Variables	Unit: Programming Topics: 1. IF function 2. Boolean Logic 3. Broadcasting 4. Lists	Unit: Representation Topics: 1. Types of representation 2. Encoding / decoding 3. Binary
	KS3 NC covered	undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.	undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users	understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems	use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]	understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits

and contain previous learning. 7	**Powerful Knowledge**	How to send an email effectively. How to stay safe online in relation to their age.	Use of the office package. Data Interpretation.	To know the difference between hardware and software and their uses.	How to program / Concepts of programming Abstraction and Decomposition.	How to program / Concepts of programming Abstraction and Decomposition.	How data is stored.
	Mass Practice	Emails: Send a formal email over school system with attached files. Presentation Skills: Create a professional presentation using a variety of formatting skills based on a client brief. E Safety: Staying safe in a digital world. British Values: Promoting rule of law, equality and safety.	Spreadsheet Basics: Data Entry. Spreadsheet Calculations: Add, subtract, max, min, average, round. Collecting Data: Effectively collecting data. Data Analysis: representing data e.g. graphs and interpreting data	Networks and Protocols: Define networks and explain data transfer. Hardware and Software: Types and Uses. Wired / Wireless networks: Types, uses and protocols. The internet: difference between the internet and world wide web.	Animation and Movement: Understanding the use of blocks in scratch. Game Basics: Understanding advanced functions in blocks such as WHILE. Graphics: Types and uses. Variables: Setting, increments and uses.	IF function: Basics of selection. Boolean Logic: Definition and computational. Broadcasting: How to broadcast effectively based on a client brief. Lists: Types and Uses	Types of representation: Type, uses and selection. Encoding / decoding: Number bases and conversions. Binary: Basics and binary arithmetic.

Distributed Practice	Check prior learning and revisit base line test as can be varied amongst primary schools. DNA –Beberas – promotes logical thinking skills, identify setting. Reinforce and develop on prior knowledge. Liaise and support feeder schools to develop pupil / staff knowledge of computer science. This will identify future areas of focus and create an even level of prior knowledge.	Integrated office skills e.g. sending work through email /formatting skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Berbaras Assessment: National Assessment to develop computational thinking and logical skills.	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge.	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge.	Integrated office skills. Assessments designed to not be linear and contain previous learning. The internet revisits skills and builds upon knowledge learned in emails (T1) DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge.	Integrated office skills. Assessments designed to not be linear and contain previous learning. Representation revisits skills and builds upon knowledge learned in data representation. (T2) Binary revisits skills and builds upon knowledge learned in Boolean logic (t5) DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge.
What are the key concepts to be covered?	Office basics to support other subjects and life skills, online safety, data interpretation, programming basics and key skills. This helps to identify prior learning which may be varied and create a level playing field for pupils. Give pupils the basic knowledge to succeed in other areas of the Academy e.g. coursework based subjects.					
What prior knowledge, at KS2, are you assuming they have?	Practice at feeder primary schools can differ greatly meaning pupils can enter KS3 with a wide variety of prior understanding. Most have office basics some have done basic coding. Base line test to check prior attainment. Liaise and support feeder schools to develop pupil / staff knowledge of computer science. This will identify future areas of focus and create an even level of prior knowledge.					
What knowledge do they need to have a successful start to Year 8?	How to use office in order to support learning in Computer science and other subjects. How to stay safe when using computers at home and in school. Basics of computational thinking with developing skills in logic games, abstraction and decomposition. Basic coding skills that could be transferred between languages.					
How are topics spaced between unrelated topics?	Based on a 3 year development plan building up skills and topics and skills are repeated each year. Mixture of ICT and Computing skills. Office package comes first to develop key skills and support other subjects. Gradual increase in difficulty of topics to increase enjoyment, engagement and challenge.					

8	**Unit/Topic**	Unit: Representation Topics: 1. Measuring and Converting Units 2. Binary Unit: Cyber Security Topics: 1. Cyber Security 2. Primary and Secondary Data	Unit: Cyber Security Topics: 1. Gathering Data 2. Analysing Data 3. Testing	Unit: Programming Topics: 1. Input / Output 2. Variables 3. Operators 4. Data Types 5. IF statements	Unit: Programming Topics: 1. Loops 2. Arrays Unit: Web Design Topics: 1. HTML 2. Structuring Webpages 3. Navigation	Unit: Web Design Topics: 1. Banners 2. Animation 3. Sorts	Unit: Hardware / Software Topics: 1. Word Processing 2. Ethics 3. House style 4. Impacts of Technology
	KS3 NC covered	understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.	undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.	use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems

	Powerful Knowledge	How data is stored. How to stay safe online in relation to their age.	How to stay safe online in relation to their age.	How to program / Concepts of programming Abstraction and Decomposition.	How to program / Concepts of programming Abstraction and Decomposition.	Use of the office package.	Use of the office package. To know the difference between hardware and software and their uses.
	Mass Practice	Measuring and Converting Units: Converting between binary, hex and decimal. Cyber Security: Cyber threats and online protection. Primary and Secondary Data: Types, uses and selection.	Gathering Data: Quality of questions and bias. Analysing Data: representing data e.g. graphs and interpreting data Testing: Identify and solving problems.	Input / Output: Text based programming introduction. Variables: Types, uses and selection. Operators: Mathematical operators and their uses. Data Types: Types, uses and selection. IF statements: Basics of selection.	Loops: Repetition and iteration. Arrays: Types, uses and selection. HTML: Introduction to HML language. Structuring Webpages: Web page layout and design based on a brief. Navigation: Hyperlinks, buttons.	Banners: Buttons and design based on a brief. Animation: Roll over and animation basics. Sorts: Organising Information	Word Processing: Creating a formal script based on a client brief. Ethics: research, copyright, environment, legal. House style: Using house style effectively. Impacts of Technology: how technology can meet user requirement and improve existing systems.

	Distributed Practice	DNA –Beberas – promotes logical thinking skills, identify setting. Reinforce and develop on prior knowledge. Representation revisits and builds upon knowledge gained in Year 7 term 5 representation project. Cyber Security revisits and builds upon knowledge gained in Year 7 Term 1 Introduction to ICT.	Integrated office skills e.g. sending work through email /formatting skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Berbaras Assessment: National Assessment to develop computational thinking and logical skills. Cyber Security revisits and builds upon knowledge gained in Year 7 Term 1 Introduction to ICT.	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Programming revisits and builds upon knowledge gained in Year 7 Term 4 and 5 programming unit.	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Programming revisits and builds upon knowledge gained in Year 7 Term 4 and 5 programming unit.	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge.	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Hardware / software revisits and builds upon knowledge gained in Year 7 Term 3 networks unit.
	What are the key concepts to be covered?	Online safety, Being able to program in 2 computer languages by applying key concepts. How to successfully create a web page based on a customer brief. All key concepts revisit and build upon topics studied at year 8 with a focus on developing transferable programming ICT skills regardless of the programming language or software package used.					
	What knowledge do they need to have a successful start to Year 9?	How to stay safe when using computers at home and in school. More advanced computational thinking with developing skills in logic games, abstraction and decomposition. Basic coding skills that could be transferred between languages. Proficiency in 2 computer languages.					

	How are topics spaced between unrelated topics?	Representation (T1) revisits and builds upon learning from T6 of Year 7. Cyber security (T1/2) revisits and builds upon learning from Year 7 T1eSafety unit. Programming (T3/4) revisits and builds upon learning from Year 7 T4/5 programming. Web design (T5) builds upon Year 7 T1 Office skills. Hardware / Software (T6) builds upon Year 7 T3 networks.					
9	**Unit/Topic**	Unit: Problem Solving in Python Topics: 1. Programming basics 2. Inputs 3. Variables and Operators 4. Iteration 5. Data Structure 6. Subroutines	Unit: Binary Topics: 1. What is Binary 2. Binary maths 3. Binary conversion 4. Sound representation 5. Representing Images	Unit: Logic Gates 1. Boolean Logic 2. Boolean Circuits Topics: Unit: Algorithms Topics: 1. Decomposition 2. Abstraction 3. Pseudo Code	Unit: Ethics Topics: 1. Privacy 2. Legislation 3. Environmental issues 4. Legal issues 5. Social Impacts	Unit: Digital Graphics Topics: 1. Software Skills 2. Purpose of Graphics 3. Legal Issues	Unit: Systems Topics: 1. CPU 2. Storage 3. Memory 4. Input and output devices 5. Networks 6. Networks 2

	KS3 NC covered	use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions	understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits	understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem	understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.	understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns. Understand the purpose and properties of digital images. Plan the creation of digital graphic	understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems understand how instructions are stored and executed within a computer system
	Powerful Knowledge	How to program / Concepts of programming Abstraction and Decomposition.	How data is stored.	How to program / Concepts of programming Abstraction and Decomposition.	How to stay safe online in relation to their age.	How to use creative software.	The constituent parts of a computer system. Hardware / software.

	Mass Practice	Inputs: Text based programming. Variables and Operators: Types, uses and selection. Iteration: Loops and repetition. Data Structure: Lists and arrays. Subroutines: Definition and creation. Of subroutines.	What is Binary: definition. Binary maths: Using mathematical functions within programming. Binary conversion: Converting Units: Converting between binary, hex and decimal. Sound representation: digitally and storing sounds. Representing Images: digitally and storing imaes.	Boolean Logic: Definition and computational thinking. Boolean Circuits: Understanding and creating logic gates. Decomposition: definition and uses. Abstraction: definition and uses. Pseudo Code: definition and uses.	Privacy: impacts and consideration on business and individual users. Legislation: impacts and consideration on business and individual users and interoperating key legislation. Environmental issues: impacts and consideration on business and individual users Legal issues: impacts and consideration on business and individual users Social Impacts: impacts and consideration on business and individual users	Software Skills: Introduction to creative software packages. Purpose of Graphics: Types, uses and selection. Legal Issues: impacts and consideration on business and individual users and interoperating key legislation.	CPU: components and functions of CPU Storage: Compare and contrast different methods. Memory: different types, uses and selection. Input and output devices: different types, uses and selection. Networks: different types, uses and selection. Compare and contrast different types.

	Distributed Practice	DNA –Beberas – promotes logical thinking skills, identify setting. Reinforce and develop on prior knowledge. Problem solving in Python (T1) revisits and builds upon Year 8 T3/4 Programming and Year 7 T4&5 Programming.	Integrated office skills e.g. sending work through email /formatting skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Berbaras Assessment: National Assessment to develop computational thinking and logical skills. Binary (T2) revisits and builds upon Year 8 T1 Representation and Year 7 T6 representation.	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Logic Gates (T3) revisits and builds upon Year 7 T5 Boolean logic.	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Algorithms (T3) revisits and builds upon Year 8 T3/4 Programming and Year 7 T4&5 Programming	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Ethics (T4) revisits and builds upon Year 8 T2 Ethics and Year 7 T1 ESafety.	Integrated office skills. Assessments designed to not be linear and contain previous learning. DNA –Beberas – promotes logical thinking skills. Reinforce and develop on prior knowledge. Networks revisits and builds upon Year 7 T3 networks and year 8 term 6 hardware / software unit.
	What are the key concepts to be covered?	Online safety, conceptual understanding of programming languages and their purpose, function and key principals. Binary concepts and functions. ICT ethics Graphics design. All key concepts revisit and build upon topics studied at year 8 with a focus on developing transferable programming ICT skills regardless of the programming language or software package used.					
	What knowledge do they need to have a successful start to Year 10?	Being able to program in 2 computer languages by applying key concepts How to stay safe online More advanced computational thinking with developing skills in logic games, abstraction and decomposition Difference between and exposure to CS and iMedia strands to make informed choices.					

	How are topics spaced between unrelated topics?	Problem solving in Python (T1) revisits and builds upon Year 8 T3/4 Programming and Year 7 T4&5 Programming Binary (T2) revisits and builds upon Year 8 T1 Representation and Year 7 T6 representation. Logic Gates (T3) revisits and builds upon Year 7 T5 Boolean logic. Algorithms (T3) revisits and builds upon Year 8 T3/4 Programming and Year 7 T4&5 Programming Ethics (T4) revisits and builds upon Year 8 T2 Ethics and Year 7 T1 ESafety. Digital Graphics (T5) revisits and builds upon Year 8 T5 Webdesign. Fundamentals of Algorithms (T6) revisits and builds upon Year 9 T3 Algorithms Year 8 T3/4 Programming and Year 7 T4&5 Programming

IMPLEMENTATION – STUDENT NEEDS AND SUPPORT

How is student learning supported below so as to ensure the following:

- extracurricular/career opportunities which develop social and cultural capital
- key vocabulary, reading, writing and numeracy opportunities
- support for SEND and students with Low Prior Attainment, as well as challenge for students with High Prior Attainment

YEAR	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6

7	**Social/ Cultural Capital**	Master slide links each lesson to relevant careers for example teacher. Providing students with essential workplace skills for example the tuition of correct email etiquette and procedure Weekly Coding Club – minecraft club for engagement and relationships.	Master slide links each lesson to relevant careers for example accountant Providing students with essential workplace skills for example data entry. Weekly Coding Club - minecraft club for engagement and relationships.	Master slide links each lesson to relevant careers for example network administrator. Providing students with essential workplace skills for example hardware / software purchasing knowledge. Weekly Coding Club - minecraft club for engagement and relationships. Careers Talk: Gaming Industry – ties in with current area of study and increases engagement	Master slide links each lesson to relevant careers for example software developer Providing students with essential workplace skills for example abstraction (identifying key information) and decomposition (breaking down difficult tasks). Weekly Coding Club - minecraft club for engagement and relationships.	Master slide links each lesson to relevant careers for example software engineer. Providing students with essential workplace skills for example abstraction (identifying key information) and decomposition (breaking down difficult tasks). Weekly Coding Club - minecraft club for engagement and relationships. Careers Talk: Programming Careers - ties in with current area of study and increases engagement	Master slide links each lesson to relevant careers for example ICT Architect Providing students with essential workplace skills for example application of maths to the real world. Weekly Coding Club - minecraft club for engagement and relationships.
	Tier 2/3 Vocabulary	Use of key terms throughout and revisiting in starters and plenaries for example attachment, functions. Key terms on master slide throughout.	Use of key terms throughout and revisiting in starters and plenaries for example cell, formula, row. Key terms on master slide throughout.	Use of key terms throughout and revisiting in starters and plenaries for example LAN, WIFI, protocol. Key terms on master slide throughout.	Use of key terms throughout and revisiting in starters and plenaries for example, abstraction, decomposition, blocks. Key terms on master slide throughout.	Use of key terms throughout and revisiting in starters and plenaries for example sprite, variable, loop. Key terms on master slide throughout.	Use of key terms throughout and revisiting in starters and plenaries for example binary, decimal. Key terms on master slide throughout.

	Reading	Read briefs, case studies, tasks. for example create a Powerpoint on British Values. Reading / writing is a professional, customer focused tone for example composing an email. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words for example compare, define, describe, discuss, explain, extend, justify.	Read briefs, case studies, tasks for example meeting client needs based on brief. Reading / writing is a professional, customer focused tone for example effective data entry. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words for example Calculate, compare, define, describe, Develop, discuss, extend.	Read briefs, case studies, tasks for example research using the internet. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words for example compare, define, describe, Develop, discuss, draw, explain, extend, justify.	Read briefs, case studies, tasks for example following NASA case study design brief. Reading / writing is a professional, customer focused tone for example writing and checking code, programming etiquette/ grammar. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words for example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify Importance of proof reading for errors in code in Scratch.	Read briefs, case studies, tasks for example following NASA case study design brief. Reading / writing is a professional, customer focused tone for example writing and checking code, programming etiquette/ grammar. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words for example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify Importance of proof reading for errors in code in Scratch.	Reading / writing is a professional, customer focused tone for example reading and writing in binary. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words for example calculate, compare, convert, define, describe, Develop, discuss, explain, extend, justify

	Writing	Reading / writing is a professional, customer focused tone for example composing an email. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example effective data entry. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example writing and checking code, programming etiquette/ grammar. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example writing and checking code, programming etiquette/ grammar. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example reading and writing in binary. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.
	Numeracy	Beberas DNA tasks require logical / applied maths skills for example worded maths problems.	Beberas DNA tasks require logical / applied maths skills for example spatial awareness. Spreadsheets use a wide range of mathematical functions = range, average, add, subtract, multiply etc. Collecting, presenting and interpreting mathematical data, e.g. bias, graphs etc.	Beberas DNA tasks require logical / applied maths skills for example coordinates. Networks; covering packet sizes / losses. Bits and bytes etc.	Beberas DNA tasks require logical / applied maths skills for example representation. Maths rules: creating a calculator. Scratch: Counters, ranges, stage sections and ratios etc.	Beberas DNA tasks require logical / applied maths skills for example ordering of information.	Beberas DNA tasks require logical / applied maths skills for example data interpretation. Binary maths skills; addition and subtraction etc. Representation and substitution.

	How does the PoS support students with SEND needs?	Beberas DNA tasks are tiered based on ability and get progressively harder. Lower tier will support pupils with less prior knowledge or developing maths skills. Levelled masterslide with clear outcomes. Eedi test identify misconception and trends for teacher to address with SEN. Seating plans. Differentiation in tasks. Individual support based on individual pupils needs. Sequencing supports development of core skills at the start. Group setting committee to decide setting of groups. Applying whole school practices of: Staff SEN champion Teach around the student meeting. Differentiated and accessible work Small chunked up elements Visual clues/dual coding Introduction of new vocabulary using visual imagery and/or etymology Students asked to demonstrate learning in a variety of ways- eg-drawing/video/mind maps/audio Students in a varied mix of groupings- 1:1/pairs/small gps and whole class Students are taught different ways of remembering eg) highlighting/step by step lists/mnemonics/cartoon strips /maps etc Efforts are always rewarded- verbally and through system Learning is revisited for consolidation Learning is exciting/competitive where possible QA: staff attend SEND training/progress is tracked/referrals are made/parents and carers are informed
	How does the PoS support students with low prior attainment/challenge those with high prior attainment?	Beberas DNA tasks are tiered based on ability and get progressively harder. Higher tier will support pupils with more prior knowledge and advanced maths skills. Introduction of difficult computing concepts at and early stage.
	How does the PoS offer contextual content appropriate to Amington students?	Data suggests for computer science gap between PP and non PP. SEN and non SEN. Lack of female uptake. Eedi test identify misconception and trends for teacher to address with SEN. Seating plans. External speakers could be female role models. Ensure that case studies / tasks represent all particularly females.

8	**Social/ Cultural Capital**	Master slide links each lesson to relevant careers for example Systems analyst. Bolstering core maths skills and using differing approaches to maths problems Weekly Coding Club – minecraft club for engagement and relationships.	Master slide links each lesson to relevant careers for example network administrator. Introduction to how businesses keep their data secure and from whom. Weekly Coding Club – minecraft club for engagement and relationships. Careers Talk: Cyber Security – ties in with current area of study and increases engagement	Master slide links each lesson to relevant careers for example software engineer. Further development of problem solving through abstraction and decomposition, with continued exposure to text based language Weekly Coding Club – minecraft club for engagement and relationships.	Master slide links each lesson to relevant careers for example computer programmer. Further development of problem solving through abstraction and decomposition, with continued exposure to text based language Weekly Coding Club – minecraft club for engagement and relationships. Careers Talk: Website Developer – ties in with current area of study and increases engagement	Master slide links each lesson to relevant careers for example web developer. Introduction to how websites are made and maintained can foster an interest into the web development industry Weekly Coding Club – minecraft club for engagement and relationships.	Master slide links each lesson to relevant careers for example project manager. An introduction to project management skills, creation and adherence to deadlines. Weekly Coding Club – minecraft club for engagement and relationships.

	Tier 2/3 Vocabulary	Use of key terms throughout and revisiting in starters and plenaries for example binary, decimal, conversion. Key terms on master slide throughout. Revisiting key vocabulary form year 7 and building upon it.	Use of key terms throughout and revisiting in starters and plenaries for example malware, virus, spam. Key terms on master slide throughout. Revisiting key vocabulary form year 7 and building upon it.	Use of key terms throughout and revisiting in starters and plenaries for example print, variable, data. Key terms on master slide throughout. Revisiting key vocabulary form year 7 and building upon it.	Use of key terms throughout and revisiting in starters and for example decomposition and abstraction. Key terms on master slide throughout. Revisiting key vocabulary form year 7 and building upon it.	Use of key terms throughout and revisiting in starters and plenaries, for example HTML, buttons. Key terms on master slide throughout. Revisiting key vocabulary form year 7 and building upon it.	Use of key terms throughout and revisiting in starters and plenaries for example house style, formatting, tools. Key terms on master slide throughout. Revisiting key vocabulary form year 7 and building upon it.

	Reading	Read briefs, case studies, and tasks for example news stories on cyber-attacks. Reading / writing is a professional, customer focused tone for example writing a questionnaire. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words. For example compare, define, describe, Develop, discuss, explain, extend, justify.	Read briefs, case studies, and tasks for example news stories on cyber-attacks. Reading / writing is a professional, customer focused tone for example creating a usable quiz. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words. For example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify.	Read briefs, case studies, tasks for example reading user requirements for product. Reading / writing is a professional, customer focused tone for example writing code using the correct format at programming etiquette (grammar) Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words. For example calculate, compare, define, describe, Develop, discuss, explain, extend, justify.	Read briefs, case studies, tasks for example reading user requirements for product. Reading / writing is a professional, customer focused tone for example writing code using the correct format at programming etiquette (grammar) Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words. For example calculate, compare, define, describe, Develop, discuss, explain, extend, justify. Importance of proof reading for errors in code.	Read briefs, case studies, tasks for example reading HTML code to check for errors. Reading / writing is a professional, customer focused tone for example annotating and commenting on design. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words. For example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify. Importance of proof reading for errors in code.	Read briefs, case studies, tasks for example user requirements for product. Reading / writing is a professional, customer focused tone for example preparing a script. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words. For example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify. Importance of proof reading for errors in code.

	Writing	Reading / writing is a professional, customer focused tone for example writing a questionnaire. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example creating a usable quiz. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone, for example writing code using the correct format at programming etiquette (grammar). Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone, for example writing code using the correct format at programming etiquette (grammar). Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example annotating and commenting on design. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example preparing a script. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.
	Numeracy	Beberas DNA tasks require logical / applied maths skills for example worded maths problems. Binary maths skills; addition and subtraction etc. Representation and substitution. Binary conversion.	Beberas DNA tasks require logical / applied maths skills for example spatial awareness. Collecting Data e.g. tally charts Presenting Data e.g. graphs.	Beberas DNA tasks require logical / applied maths skills for example coordinates. Use maths operators e.g. add multiply subtract and division in Python Syntax. Representation: integers, float numbers, Data types etc.	Beberas DNA tasks require logical / applied maths skills for example representation. Use maths operators e.g. add multiply subtract and division in Python Syntax. Representation: integers, float numbers, Data types etc.	Beberas DNA tasks require logical / applied maths skills for example ordering of information. Costings – planning activities based on a client's brief.	Beberas DNA tasks require logical / applied maths skills for example data interpretation. Costings – planning activities based on a client's brief.

	How does the PoS support students with SEND needs?	Beberas DNA tasks are tiered based on ability and get progressively harder. Lower tier will support pupils with less prior knowledge or developing maths skills. Levelled masterslide with clear outcomes. Eedi test identify misconception and trends for teacher to address with SEN. Seating plans. Differentiation in tasks. Individual support based on individual pupils needs. Sequencing supports development of core skills at the start. Applying whole school practices of: Staff SEN champion Teach around the student meeting. Differentiated and accessible work Small chunked up elements Visual clues/dual coding Introduction of new vocabulary using visual imagery and/or etymology Students asked to demonstrate learning in a variety of ways- eg-drawing/video/mind maps/audio Students in a varied mix of groupings- 1:1/pairs/small gps and whole class Students are taught different ways of remembering eg) highlighting/step by step lists/mnemonics/cartoon strips /maps etc Efforts are always rewarded- verbally and through system Learning is revisited for consolidation Learning is exciting/competitive where possible QA: staff attend SEND training/progress is tracked/referrals are made/parents and carers are informed
	How does the PoS support students with low prior attainment/challenge those with high prior attainment?	Beberas DNA tasks are tiered based on ability and get progressively harder. Higher tier will support pupils with more prior knowledge and advanced maths skills. Introduction of difficult computing concepts at an early stage.
	How does the PoS offer contextual content appropriate to Amington students?	Data suggests for computer science gap between PP and non PP. SEN and non SEN. Lack of female uptake. Eedi test identify misconception and trends for teacher to address with SEN. Seating plans. Expteral speakers could be female role models. Ensure that case studies / tasks represent all particularly females.

9	**Social/ Cultural Capital**	Master slide links each lesson to relevant careers. Continued development of abstraction and decomposition fosters organisation Weekly Coding Club – teen tech competition – music, media and entertainment, hopefully increase female uptake.	Master slide links each lesson to relevant careers. Covering key maths principles from a different angle, building on the knowledge from previous years Weekly Coding Club – teen tech competition – music, media and entertainment, hopefully increase female uptake. Taster Lesson: Computer Science at 6th Form -– ties in with current area of study and increases engagement	Master slide links each lesson to relevant careers. Boolean logic and algorithms teach organisational skills essential for any workplace Weekly Coding Club – teen tech competition – music, media and entertainment, hopefully increase female uptake.	Master slide links each lesson to relevant careers. Understanding of the legislation and ethical issues surrounding technology can lead to careers in the environmental impact audit industry. Weekly Coding Club – teen tech competition – music, media and entertainment, hopefully increase female uptake. Lloyds Banks Careers Webinar. Based on a careers in ICT. - increases engagement	Master slide links each lesson to relevant careers. Planning and setting deadlines and then adhering to them is an essential work place skill Weekly Coding Club – teen tech competition – music, media and entertainment, hopefully increase female uptake.	Master slide links each lesson to relevant careers. Planning and setting deadlines and then adhering to them is an essential work place skill Weekly Coding Club – teen tech competition – music, media and entertainment, hopefully increase female uptake. Visit to Bletchley Park – history of the Computer.

	Tier 2/3 Vocabulary	Use of key terms throughout and revisiting in starters and plenaries, for example input, output, variable. Key terms on master slide throughout. Revisiting key vocabulary form year 7/8 and building upon it. Focus on developing pupils understanding of GCSE exam command words. for example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify, convert.	Use of key terms throughout and revisiting in starters and plenaries for example binary, hex, denary. Key terms on master slide throughout. Revisiting key vocabulary form year 7/8 and building upon it. Focus on developing pupils understanding of GCSE exam command words. for example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify, convert.	Use of key terms throughout and revisiting in starters and plenaries for example decomposition, abstraction, algorithm. Key terms on master slide throughout. Revisiting key vocabulary form year 7/8 and building upon it. Focus on developing pupils understanding of GCSE exam command words. for example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify, convert.	Use of key terms throughout and revisiting in starters and plenaries for example decomposition, abstraction, algorithm. Key terms on master slide throughout. Revisiting key vocabulary form year 7/8 and building upon it. Focus on developing pupils understanding of GCSE exam command words. for example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify, convert.	Use of key terms throughout and revisiting in starters and plenaries for example environment, legislation, ethics. Key terms on master slide throughout. Revisiting key vocabulary form year 7/8 and building upon it. Focus on developing pupils understanding of GCSE exam command words. for example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify, convert.	Use of key terms throughout and revisiting in starters and plenaries for example ALU, optical and topology. Key terms on master slide throughout. Revisiting key vocabulary form year 7/8 and building upon it. Focus on developing pupils understanding of GCSE exam command words. for example calculate, compare, define, describe, Develop, discuss, draw, explain, extend, justify, convert.

	Reading	Read briefs, case studies, tasks for example reading a detailed client brief. Reading / writing is a professional, customer focused tone. For example writing code using correct programming etiquette (grammar). Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words.	Reading / writing is a professional, customer focused tone, for example writing binary conversions in the correct format. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words.	Reading / writing is a professional, customer focused tone for example writing logic gates and truth table sin the correct format. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words.	Read briefs, case studies, tasks for example news stories on ethics. Reading / writing is a professional, customer focused tone for example extended exam questions. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words. Importance of proof reading for errors in code.	Read briefs, case studies, tasks for example reading a complex list of user requirements. Reading / writing is a professional, customer focused tone for example creating a product that is aimed at the correct audience in tone. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words. Importance of proof reading for errors in code.	Read briefs, case studies, tasks for example Reading / writing is a professional, customer focused tone for example creating a product that is aimed at the correct audience in tone. Eedi tests to check understanding of key terms and highlight misconceptions. Development of understanding key exam command words. Importance of proof reading for errors in code.

	Writing	Reading / writing is a professional, customer focused tone. For example writing code using correct programming etiquette (grammar). Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone, for example writing binary conversions in the correct format. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example writing logic gates and truth table sin the correct format. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone, for example extended exam questions. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone, for example creating a product that is aimed at the correct audience in tone. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.	Reading / writing is a professional, customer focused tone for example creating a product that is aimed at the correct audience in tone. Introduction of exercise books to improve note taking / revision skills. Exam style questions practiced at regular intervals. Digital writing skills in Office and Outlook support other subjects.
	Numeracy	Beberas DNA tasks require logical / applied maths skills for example worded maths problems. Use maths operators e.g. add multiply subtract and division in Python Syntax.	Beberas DNA tasks require logical / applied maths skills for example spatial awareness. Binary maths skills; addition and subtraction etc. Representation and substitution. Binary conversion.	Beberas DNA tasks require logical / applied maths skills for example coordinates. Pseudo code representing maths operators. Using more advanced maths operators e.g. modulus division.	Beberas DNA tasks require logical / applied maths skills for example representation.	Beberas DNA tasks require logical / applied maths skills for example ordering of information. Pixel dimensions / resolutions.	Beberas DNA tasks require logical / applied maths skills for example data interpretation. Von Neumann architecture. Converting file sizes.

	How does the PoS support students with SEND needs?	Beberas DNA tasks are tiered based on ability and get progressively harder. Lower tier will support pupils with less prior knowledge or developing maths skills. Levelled masterslide with clear outcomes. Eedi test identify misconception and trends for teacher to address with SEN. Seating plans. Differentiation in tasks. Individual support based on individual pupils needs. Sequencing supports development of core skills at the start. Applying whole school practices of: Staff SEN champion Teach around the student meeting. Differentiated and accessible work Small chunked up elements Visual clues/dual coding Introduction of new vocabulary using visual imagery and/or etymology Students asked to demonstrate learning in a variety of ways- eg-drawing/video/mind maps/audio Students in a varied mix of groupings- 1:1/pairs/small gps and whole class Students are taught different ways of remembering eg) highlighting/step by step lists/mnemonics/cartoon strips /maps etc Efforts are always rewarded- verbally and through system Learning is revisited for consolidation Learning is exciting/competitive where possible QA: staff attend SEND training/progress is tracked/referrals are made/parents and carers are informed
	How does the PoS support students with low prior attainment/challenge those with high prior attainment?	Beberas DNA tasks are tiered based on ability and get progressively harder. Higher tier will support pupils with more prior knowledge and advanced maths skills. Introduction of difficult computing concepts at an early stage.
	How does the PoS offer contextual content appropriate to Amington students?	Data suggests for computer science gap between PP and non PP. SEN and non SEN. Lack of female uptake. Eedi test identify misconception and trends for teacher to address with SEN. Seating plans. External speakers could be female role models. Ensure that case studies / tasks represent all particularly females.

How does the Implementation Plan meet the ACE curriculum design?	
Ambitious	Ambitious: Delivery of challenging concepts and ideas. Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. Covers a wide range of topics including all of NC. Linked to intent and careers document.
Challenging	Delivery of challenging concepts and ideas. Lessons created at high level of stretch for age group.

	Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems Differentiation. Berbaras tasks are levelled
Engaging	Interweaving and spacing of content over the 3 year cycle. Year 7 topics plug any gaps in knowledge from prior learning to ensure future progress for all. Year 9 pathways split to ensure engagement is high and pupils are provided with the right skills for future pathways.

What are the current strengths of the Implementation Plan?

Fulfils the national curriculum criteria.
Gives pupils the required building block skills to succeed at KS4.
Allows pupils to make informed pathway decisions.
Cultural Capital: Become digitally literate in order to able to use, and express themselves and develop their ideas through, information and communication technology / Become digitally literate in order to become active participants in a digital society and workplace.
Strong interweaving and building on prior knowledge.
Created in conjunction with and checked by NCCE.

What specific actions have to be taken in response to the above? Please consider:

- Core concept changes;
- Space interleaving changes;
- Modifications to ensure an ACE curriculum design;
- CPD for teachers in your subject area;
- Additional research you have to consider as part of this review.

Update learning resources using support from NCCE with focus on using Amington teaching model.
Embedding / organising cultural / afterschool / careers opportunities into practice.
Create DNA Activites using Berberas.
Update assessment using EEDI
Create more differentiated resources for SEN pupils.
QA and review with NCCE.
CPD opportunities for CMI.