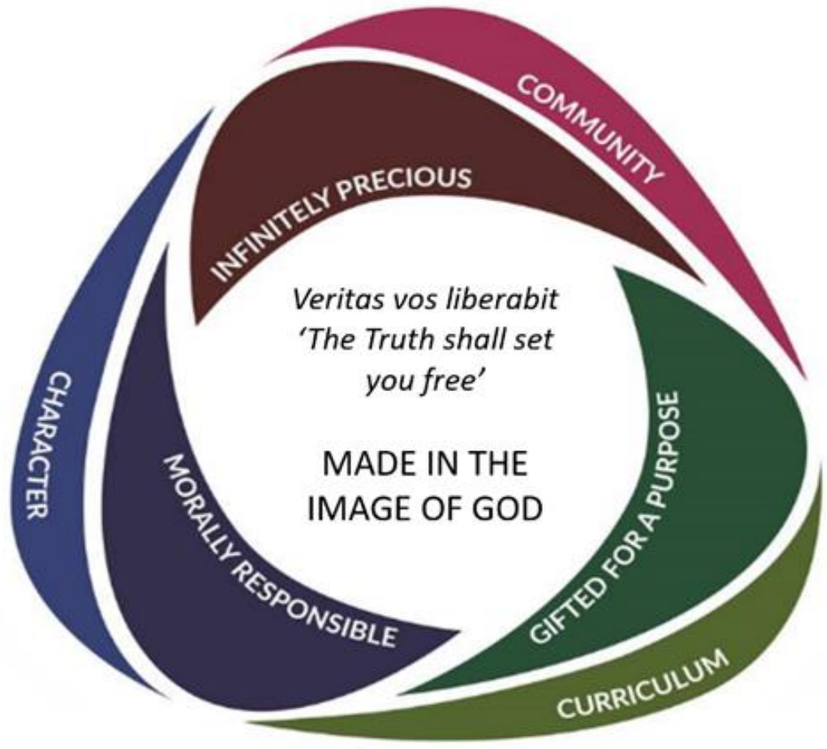
Bede Academy

Computing Curriculum Map



Computing Curriculum Map

Our ambition is for students to be masters of technology and not slaves to it. Technology is everywhere and will play a pivotal part in students' lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. Our students will be able to use the skills learnt in Computing to positively impact their thinking and actions by, e.g., being able to break down problems into smaller parts (decomposition); to fix problems (debug); to be logical and methodical (sequencing). We want our pupils to be creators, not consumers. Our broad curriculum reflects this encompassing: computer science, information technology and digital literacy.

As we identify the key knowledge students should master in **computing** we think carefully about *how* we want students to think as a **master of technology**. We want students to:

- make informed choices about the most effective way to find, explore, create, analyse, exchange and present digital information
- evaluate and apply information technology analytically to solve problems
- apply their knowledge of computational terms and programming to be able to solve problems.
- think critically about the risks associated with technology to keep themselves and others safe.
- make informed decisions based on a strong understanding of how technology affects the world around us.

The **computing** curriculum is sequenced around the following key concepts:

Computer Science	**Digital Literacy**	**Information Technology**
-Decomposition	-Cyberbullying and Online Conduct	Data
-Ethics/ Legislation	-Security and Privacy	Networks
-Abstraction	-Copyright and Ownership	Hardware
-Pattern Recognition	-Wellbeing, Lifestyle and identity	Software
-Algorithmic Thinking		

Our all-through curriculum is:

…knowledge-rich with clearly defined, coherent progression which strengthens schema to enable all students to secure ambitious curriculum goals;

- *Clear links to previous topics, building on previous learning*
- Building on digital literacy from early in the curriculum, relying and developing skills in each lesson
- Encapsulated tasks that enable students to develop their learning in each lesson, feeding into bigger concepts

…enabling as all students have access to the whole curriculum and students master fundamentals in reading, writing and mathematics;

- *Returning to Digital Literacy in each lesson through Do Nows, key vocabulary etc*
- *Using key concepts for computational understanding (Abstraction, Decomposition)*
- *Identifying students that require further support with additional sessions, Directed LSAs in lesson time etc*

…responsive as assessment identifies security of learning and students are supported to achieve our curriculum goals;

- *End of Topic tests using open and MCQ where appropriate to identify gaps in understanding*
- *Using Feedback techniques such as MWB and whole class feedback to identify misconceptions*
- Regular retrieval and spiral curriculum practice, returning to previous concepts to link learning together and build on prior learning

…inspiring as it takes students beyond their own experience, offers opportunity for creativity, and enables them to understand their identity in Blyth and beyond;

- *Computational Thinking and problem solving embedded throughout the curriculum*
- *Looking at extended challenges, such as E-Safety Week, Using Computers to Design a new product etc*
- *Links to STEM careers and wider knowledge of local strengths in ICT, such as Port of Blyth and the North East being a centre of cyber security*

…transformative as by developing character, we build learners who exemplify the Core Virtues and make a positive contribution to their community.

- *Building resilience, particularly through skill based work such as programming*
- *Returning to computational thinking as an approach to challenges inside and outside the lesson*
- *Encouraging students to develop independence and self awareness of strengths and weaknesses. Using Wisdom and Courage to know when to seek help, and giving opportunities to develop independence*

Computing Curriculum Map

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
R	We are animators	We are animators	We are good digital friends	We are programmers	We are photographers	We are musicians
1	Computer Science – Code.org - A	IT – Technology around us	Digital Literacy	Computer Science – Scratch Jr	Physical Computing - BeeBots	IT – Digital Painting
2	Computer Science – Code.org - B	IT – Basic skills	Digital Literacy	Computer Science – Scratch Jr - Quizzes	IT - Pictograms	IT – Animal Music
3	Computer Science – Code.org - C	IT – Desktop Publishing	Digital Literacy	Computer Science – Scratch – Events and Action	Physical Computing – Micro: bit - Animation	IT- Stop Frame Animation
4	Computer Science – Code.org - D	IT – The internet	Digital Literacy	Computer Science – Scratch – Repetition in Games	Physical Computing – Lego Wedo	IT – Digital Images
5	Computer Science – Scratch – Selection in quizzes	IT – Computer Systems	Digital Literacy	IT - Databases	Physical Computing – Micro: bit - Data handling	IT – Video editing
6	Computer Science – Variables in games	IT - Spreadsheets	Digital Literacy	Computer Science – Code.org - F	Physical Computing – Micro:bit – Active devices	IT – Tinkercad – 3d Modelling and design
7	E-Safety and Computer Components		Website development	Spreadsheets	Databases	
8	Principles of computer Science		App Development	Python	Databases	
9	How Computers Work		Cyber Security	Python	Python	Physical Computing Modern Technologies
10	Systems Architecture	Memory and Storage	Computer networks and connection protocols	Network Security	Systems Software	Ethical, legal, cultural, and environmental impacts of digital technology
11	Algorithms	Programming Fundamentals	Producing Robust programs	Boolean Logic	Programming languages and IDEs	
10 DIT	Component 1: Exploring User Interface Design Principles and Project Planning A	Component 1: Exploring User Interface Design Principles and Project Planning B		Component 1: Exploring User Interface Design Principles and Project Planning B	Component 2: Collecting, Presenting and Interpreting Data A	Component 2: Collecting, Presenting and Interpreting Data B-C
11 DIT	Component 3: Effective Digital Working Practices A-B	Component 3: Effective Digital Working Practices C-D	Component 2: Collecting, Presenting and Interpreting Data A	Component 2: Collecting, Presenting and Interpreting Data B	Component 2: Collecting, Presenting and Interpreting Data C	
12 BTEC	1 – Learning Aim A	1 – Learning Aim B	1 – Learning Aim C	1 – Learning Aim D	1 – Learning Aim E	1 – Learning Aim F Unit 2: Creating systems to manage information
13 BTEC	3 – Learning Aim A	3 – Learning aim B&C	Unit 6 Web Development Learning Aim A	Unit 6 Web Development Learning Aim B	Unit 6 Web Development Learning Aim C	

Computing Curriculum Map

Nursery	**Disciplinary** To develop an awareness of technology that we use everyday To be able to interact with age appropriate technology **Substantive** To begin to develop an interest, and engage in technological toys such as IWB, iPads, toys with knobs, pulleys and buttons To develop skills so they can operate simple equipment		
Reception	**Disciplinary** To develop an awareness of technology that we use everyday To be able to interact with age appropriate technology **Substantive** To show an interest, and engage in technological toys such as IWB, iPads, toys with knobs, pulleys and buttons To know how to operate simple equipment To draw pictures on IWB and begin to change colours To use the iPad to take pictures To explore how a Bee-Bot works E safety- What we use technology for - permission to take photos	**Disciplinary** To develop an awareness of technology that we use everyday To be able to interact with age appropriate technology **Substantive** To access, understand and interact with a range of technology within the Reception environment To draw pictures on IWB, changing colour and pen size To program a Bee-Bot to move to a selected place (only forward or back) To use the IWB, changing games and programmes To use the internet with adult supervision to find and retrieve information To use the Bee-Bots and program them to go forwards, backwards and make turns in each direction E- safety - safe/unsafe apps - upsetting images	**Disciplinary** To develop an awareness of technology that we use everyday To be able to interact with age appropriate technology **Substantive** To use Seesaw to add their own observations – taking pictures, adding text and saving To use the internet with adult supervision to find and retrieve information To begin to give reasons why we need to stay safe online To use the internet with adult supervision to find and retrieve information To use the iPad to create music E-safety - pop ups and in app purchases - Talking to strangers online
Related Early Learning Goals	There are no early learning goals that directly relate to computing objectives, though it is still expected that children will be introduced to appropriate technology and use it within their provision.		

Year 7	Year 8	Year 9
Students achieving **at** the expected standard will be able to:	Students achieving **at** the expected standard will be able to:	Students achieving **at** the expected standard will be able to:
DISCIPLINARY KNOWLEDGE	**DISCIPLINARY KNOWLEDGE**	**DISCIPLINARY KNOWLEDGE**
• Be able to make sensible choices online. • Be able to identify threats online and on a digital device. • Explain the different types of formulae used in Excel and its purpose. •Articulate what queries are and the importance to set them out logically. • Critically think when evaluating work during and at the end of a topic of work.	• Make sensible formatting choices. • Identify calculations that need to be added into a spreadsheet to improve its functionality. • Sensibly plan out and use logical thinking when developing an app • Plan and articulate design ideas for an interactive game • Articulate the key concepts of computer science • Critically think when developing basic coding in Python	• Make sensible choices when deciding between different types of software. • Think logically to design and implement flowcharts. • Problem solve syntax errors in Python. • Articulate and explain the benefits and drawbacks of using databases. • Critically think when evaluating work during and at the end of a topic of work.
SUBSTANTIVE KNOWLEDGE	**SUBSTANTIVE KNOWLEDGE**	**SUBSTANTIVE KNOWLEDGE**
• Understand the importance of Online Safety. • Explain the differences between viruses / worms and trojans. •Be able to use key spreadsheet formulae effectively (=sum, min, max, average, if, absolute cell, countif) • How to use a database to soft / filter and query data.	• Create programs that can take a user input • Understand how to create complex loops in programming, incldiung definite and indefinite • Create an interactive app that gives feedback to the user • Understand the key features of code design. • Be able to expain the key concepts of databases	• Explain the key components of a computer system. • Understand the difference between application / operating and open source software. • Be able to design flowcharts to show computational thinking. • Code effectively in Python. • Develop complex formulae in Excel. • Develop complex queries in Databases, along with Normalising data.

Computing Curriculum Map

Year 10 Computer Science	Year 11 Computer Science
Students achieving **at** the expected standard will be able to:	Students achieving **at** the expected standard will be able to:
DISCIPLINARY KNOWLEDGE	**DISCIPLINARY KNOWLEDGE**
Explain what the different parts of the CPU do Know the impact of changing the clock speed, cache size and Number of Cores Explain the best storage medium based on Capacity Speed Portability Durability Reliability Cost Explain the use of: o DNS (Domain Name Server) o Hosting o The Cloud o Webservers and Clients	• Effectively compose algorithms through the use of Python. • Produce robust programmes that are for a specific purpose. • Be able to identify syntax errors and problem solve solutions. •Effectively use data representation techniques. • Analyse algorithms and provide solutions to problems. • Evaluate the usefulness of algorithms.
SUBSTANTIVE KNOWLEDGE	**SUBSTANTIVE KNOWLEDGE**
Identify different types of attack such as: Brute-force attacks Denial of service attacks Data interception and theft The concept of SQL injection Know different forms of Social Engineering and how people are the 'weak point' Understand the characteristics of Malware Identify the need for primary storage Know the difference between RAM and ROM Understand the purpose of RAM/ROM in a system Identify when we need virtual memory Be able to identify 3 types of storage	•Identify different types of Boolean operators Describe different operations such as: AND OR NOT Identify and connect different truth tables to the different operators •Identify characteristics of different programming languages Identify Higher level languages and lower level languages, and why each would be used Identify variables, operators, inputs and outputs in a program Use basic programming constructs to control the flow of a program

Year 10 DIT	Year 11 DIT
Students achieving **at** the expected standard will be able to:	Students achieving **at** the expected standard will be able to:
DISCIPLINARY KNOWLEDGE	**DISCIPLINARY KNOWLEDGE**
• From a plan effectively develop a working interface with interactive features. • Use the key features of ppt to create buttons. • Make sensible choices when evaluating interactive features to improve design.	• Construct data tables and flowcharts. • Think logically about the decisions that need to be made when using information systems. • From a plan effectively develop a working spreadsheet interface with interactive features. • Use Excel to create a full functional interface with key features. (Formulae, conditional formatting, macros) • Make sensible choice to explain the usefulness of the spreadsheet interface for its intended target audience.
SUBSTANTIVE KNOWLEDGE	**SUBSTANTIVE KNOWLEDGE**
• Effectively plan and design an interactive interface. • Use PPT to create a full functional interface with key features. • Evaluate the usefulness of the interface for its intended target audience. • Assess the interal and external threats to a computer system. • Develop and be able to identify issues with computer systems.	• Effectively identify the legislation needed when using computer systems. • Understand the layout of data tables and flowcharts. • Understand the decisions that need to be made when using information systems. •Effectively plan and design an interactive interface. • Understand a full range of functional interface with key features. (Formulae, conditional formatting, macros) • Evaluate the usefulness of the spreadsheet interface for its intended target audience.

Computing Curriculum Map

Year 1

Unit	**Code.org Course A -** https://studio.code.org/s/coursea-2021 **(lesson 2- 11)**	**Technology Around Us – Unit adapted from Teach Computing** https://bit.ly/3uwSuiA	**Project Evolve –** https://projectevolve.co.uk/	**Introduction to Scratch Jr – Unit adapted from Teach Computing** https://bit.ly/2TnizUj	**Robots – Beebots – Unit adapted from Teach Computing - https://bit.ly/3yLzErc**	**Digital Painting – Lesson adapted from Teach Computing -** https://bit.ly/3yML6CU
Key Concepts	**Computer Science** Algorithmic Thinking	**Information Technology** Hardware	**Digital Literacy** Cyberbullying & Online Conduct	**Computer Science** Algorithmic Thinking	**Physical Computing** Algorithmic thinking	**Information Technology – Creative Project**
Prior Learning						
Key Knowledge	**Substantive** An **algorithm** is step by step instructions to solve a problem. A **program** is a list of instructions that tells a computer exactly what to do A mistake in a program is called a **bug** To **debug** means to fix a mistake in a program. **Disciplinary** Go online using the iPad Log in with a prompt card Open a program Drag and drop coding blocks Put blocks of code in the correct order Break up blocks of code	**Substantive** A **desktop computer** is made up of a **screen**, a **keyboard**, a **mouse** and a **base unit**. A **laptop computer** has a screen, a keyboard and a mouse Writing on a keyboard is called **typing**. Work is saved on a computer in a **file**. We use **passwords** to protect our work and files on a computer. **Disciplinary** Locate examples of **technology** in the classroom Explain technology can help us Use a mouse to **click and drag** Type my name on a computer Save my work to a file Know how to use a computer safely	**Self-Image & Identity (Lessons 2)** Recognise that there may be people online who could make you feel sad, embarrassed, or upset **Online Relationships (Lesson 3&4)** Describe ways in which you can try to be kind both offline and online Explain what I like, dislike and find funny and sad online **Online Reputation (Lesson 1 & 2)** Understand that information that is shared online can stay there for a very long time Name different types of personal information that can be shared (photos, text, video) **Online Bullying (Lesson 1)** Identify behaviour that might upset others online **Security & Privacy (Lessons 1)** Understand how passwords and PINs keep devices and information secure	**Substantive** **A sprite** is an object/character in Scratch which can be controlled **Blocks** are picture commands used to code A **command** tells a program what to do. A **stage** is the background image displayed in a program **Disciplinary** Use commands to move a sprite Use more than one block by joining them together Use a Start block in a program Choose appropriate artwork for my project Test the programs I have created	**Substantive** A **BeeBot** is a programmable floor robot A **robot** is a machine which can be programmed by a computer A **program** is a list of instructions that tells a computer exactly what to do To **debug** means to fix a mistake in a program. **Disciplinary** Run a command on a device Give directions Experiment with turn and move commands to move a robot Explain what my program should do Debug my program Use two different programs to get to the same place	**Substantive** **Digital art** is artwork created using technology **Paint tools** allow you to select the brush type to help you colour a digital image **Palette** is the colours available in a computer program **Pixels** are the small squares which make up a computer's display **Disciplinary** Draw lines on a screen and explain which tools I used Use the shape and line tools effectively Choose appropriate paint tools and colours to recreate the work of an artist Change the colour and brush sizes Spot the differences between painting on a computer and on paper Say whether I prefer painting using a computer or using paper
Next Steps						
Enrichment/ Careers						

Computing Curriculum Map

Year 2	Unit	**Code.org Course B -** https://studio.code.org/s/courseb-2021 (lessons 3 -12)	**Basic Skills – IT Around Us – Lesson adapted from Teach Computing - https://bit.ly/2SHhru4**	**Project Evolve –** https://projectevolve.co.uk/	**Coding – Lesson adapted from Teach Computing Creating quizzes in Scratch Jr -** https://bit.ly/2TvySP3	**Pictograms – Lesson adapted from Teach Computing -** https://bit.ly/3p3eEHL	**Animal Music Unit adapted from Teach Computing -** https://bit.ly/3yQjWv4
	Key Concepts	**Computer Science** Pattern Recognition	**Information Technology** Hardware	**Digital Literacy** Security & Privacy	**Computer Science** Algorithmic Thinking	**Information Technology -** Data	**Information Technology – Creative Project**
	Prior Learning	An **algorithm** is step by step instructions to solve a problem. A **program** is a list of instructions that tells a computer exactly what to do A mistake in a program is called a **bug** To **debug** means to fix a mistake in a program.	Writing on a keyboard is called **typing**. Work is saved on a computer in a **file**. We use **passwords** to protect our work and files on a computer.		**A sprite** is an object/character in Scratch which can be controlled **Blocks** are picture commands used to code A **command** tells a program what to do. A **stage** is the background image displayed in a program		A **program** is a list of instructions that tells a computer exactly what to do To **debug** means to fix a mistake in a program.
	Key Knowledge	**Substantive** A **sequence** is more than one instruction to be followed in order. A **program** can be made by organising a sequence of instructions. **Repetition** is doing the same instruction more than once. In computing repetition is called a **loop**. A **loop** can make an **algorithm** shorter and more efficient. **Disciplinary** Go online using the PC Open a program Use a mouse with developing accuracy Drag and drop coding blocks using the mouse Put blocks of code in the correct order Break up blocks of code using the mouse	**Substantive** IT stands for **Information technology** The mouse **cursor** is the pointer (shaped like an arrow) on the computer screen IT is used in many work places IT devices can work together and be **connected** eg barcode scanner on a till, bank card. **Disciplinary** Describe some uses of computers Open a file Move and resize images Explain how information technology helps people Recognise that information technology can be connected Recognise how to use information technology responsibly	**Self-Image & Identity (Lessons 2)** Know who I can go to for help **Online Relationships (Lesson 1&4)** Describe how you might send a message to someone you know using technology Identify when to say 'no' and that you have the right to say 'no' online and when to seek advice **Online Reputation (Lesson 1,2& 3)** Understand that information can stay online for a very long time Describe how anyone's online information can be seen by others Know what is ok to share and what isn't **Online Bullying (Lesson 1, 2&3)** Provide simple examples of what online bullying can look like Know who you could go to if someone was bullying you **Privacy & Security (Lessons 4)** Recognise the wide range of internet connected devices at home	**Substantive** A **sequence** is more than one instruction to be followed in order. A **project** is a task with a specific aim/desired outcome An **App** stands for an application which can run on a tablet, smartphone, computer or electronic device **Disciplinary** Identify that a program needs to be started Predict the outcome of a sequence of commands Work out the actions of a sprite in an algorithm Decide which blocks to use to meet the design Build sequences of blocks to match my design Improve my project by adding features	**Substantive** A **tally chart** is a table used for counting and comparing numbers A **data table** contains rows and columns of information A **pictogram** is a chart that uses pictures to represent data **Data** is a collection of facts such as numbers, words or measurements **Disciplinary** Record data in a tally chart Enter data onto a computer Use pictograms to answer simple questions about objects Answer 'more than'/'less than' and 'most/least' questions about an attribute Collect the data I need	**Substantive** A **rhythm** is a strong regular repeated pattern of sound (or movement) **Pitch** is highness or lowness of the tone An **Online program** is a website which allows you to create content online. **Disciplinary** Describe how music makes me feel, e.g. happy or sad Create a rhythm pattern Play an instrument following a rhythm pattern Use a computer to experiment with pitch and duration Use a computer to create a musical pattern using three notes Save my work
	Next Steps						
	Enrichment/ Careers						

Computing Curriculum Map

Year 3	Unit	**Code.org Course C -** https://studio.code.org/s/coursec-2021 (lessons 4 -16)	**Desktop Publishing –Lesson from Teach Computing - https://bit.ly/34t6O0J**	**Project Evolve** https://projectevolve.co.uk/	**Scratch – Events and Actions – Lesson adapted from Teach Computing - https://bit.ly/3wF2Xd4**	**Micro:bit – Volcano Animations – Lesson adapted from https://bit.ly/3yQmMQK**	**Animation – Stop Frame animation Lesson adapted from Teach Computing - https://bit.ly/3wBXaEY**
	Key Concepts	**Computer Science** Decomposition	**Information Technology** Hardware	**Digital Literacy** Wellbeing, Lifestyle & Identity	**Computer Science** Algorithmic thinking	**Physical Computing** Data	**Information Technology – Creative Project**
	Prior Learning	A **sequence** is more than one instruction to be followed in order. A **program** can be made by organising a sequence of instructions. **Repetition** is doing the same instruction more than once. In computing repetition is called a **loop**.	IT stands for **Information technology** The mouse **cursor** is the pointer (shaped like an arrow) on the computer screen IT devices can work together and be **connected** eg barcode scanner on a till, bank card.		A **sequence** is more than one instruction to be followed in order. A **project** is a task with a specific aim/desired outcome An **App** stands for an application which can run on a tablet, smartphone, computer or electronic device		
	Key Knowledge	**Substantive** To **decompose** an **algorithm** is to break it down into smaller parts An **algorithm** needs to be completed in ordered **sequentia**l steps. **Input** is data that goes into the computer. **Output** is information that comes out of a computer **Disciplinary** Identify and locate bugs in a program. Predict where a program will fail. Modify an existing program to solve errors. Develop problem solving and critical thinking skills by debugging a program.	**Substantive** **Text** is the writing, words or typing displayed on a computer screen **Images** are pictures, graphics or illustrations displayed on a computer screen. A **Template** is a document that has already been laid out in a certain way. **Font** is a particular size, weight and style of a typeface **Page Orientation** is how the page is viewed - **landscape or portrait**. **Disciplinary** Explain the difference between text and images Change font style, size, and colours for a given purpose Define the term 'page orientation' Paste text and images to create a magazine cover	**Substantive** **Online Relationships (Lessons 3, 5&6)** Explain what is meant by trusting someone online Understand that when people talk online, it is different to communicating face to face and that sometimes people act differently online **Online Bullying (Lesson 2)** Provide simple examples of where online bullying can take place and what it might look like **Managing Information (Lesson 5)** Analyse information and differentiate between 'opinions', 'beliefs' and 'facts' **Health, Well-being & Lifestyle (Lessons 1&2)** Give examples of and explain the negative impact of excessive technology use on health and bodies Explain why some online activities have age restrictions **Copyright & Ownership (Lessons 1)** Know that whilst the internet may be 'Free' not all content is 'Free to use'	**Substantive** An **event** is an action detected by a **program**. An example of this is clicking the mouse. An **action** is doing something to achieve a goal **Computer Code** is a set of rules or instructions. **Scratch** is a block-based coding program. **Disciplinary** Explain the relationship between an event and an action Consider the real world when making design choices Identify additional features (from a given set of blocks) Test a program against a given design Match a piece of code to an outcome Evaluate my project	**Substantive** A **Micro: bit** is a pocket-sized computer that you can code **Decomposition** is breaking an algorithm down into smaller parts **Repetition** is doing the same instruction more than once. **Disciplinary** Use decomposition to create a dance sequence Understand the use of repetition Write simple flowchart algorithms using repetition Follow an algorithm accurately to write a program Test and debug programs and algorithms To understand and explain decomposition	**Substantive** **Stop-frame animation** is animation which is captured one frame at a time. When it is played back it creates the illusion of movement. A **frame** is a still image An **onion skin** is a ghost image of your last frame which allows you to position your next frame **Disciplinary** I can create an effective flip book—style animation I can explain why little changes are needed for each frame I can create an effective stop-frame animation I can use onion skinning to help me make small changes between frames I can explain ways to make my animation better I can improve my animation based on feedback
	Next Steps						
	Enrichment/ Careers						

Computing Curriculum Map

Year 4	Unit	**Code.org Course D -** https://studio.code.org/s/coursed-2021 (lessons 2 -19)	**The Internet – Lesson adapted from Teach Computing - https://bit.ly/3yMljuz**	**Project Evolve** https://projectevolve.co.uk/	**Games – Repetition using Scratch – Lesson adapted from Teach Computing - https://bit.ly/3c2sKE4**	**Lego WeDo – Milo Science Rover Project - https://bit.ly/3edEmoE**	**Digital Images – Creating Media – Photo editing – Lesson adapted from Teach Computing - https://bit.ly/3fwqSWe**
	Key Concepts	**Computer Science** Algorithmic thinking	**Information Technology** Hardware	**Digital Literacy** Copyright & Ownership Cyberbullying & Online Conduct	**Computer Science** Pattern Recognition	**Physical Computing** Data	**Information Technology – Creative Project**
	Prior Learning	To **decompose** an **algorithm** is to break it down into smaller parts An **algorithm** needs to be completed in ordered **sequential** steps. **Input** is data that goes into the computer. **Output** is information that comes out of a computer	IT stands for **Information technology** The mouse **cursor** is the pointer (shaped like an arrow) on the computer screen IT is used in many work places. IT devices can work together and be **connected** eg barcode scanner on a till, bank card.		An **event** is an action detected by a **program**. An example of this is clicking the mouse. An **action** is doing something to achieve a goal **Computer Code** is a set of rules or instructions. **Scratch** is a block-based coding program.	**Decomposition** is breaking an algorithm down into smaller parts **Repetition** is doing the same instruction more than once.	**Text** is the writing, words or typing displayed on a computer screen **Images** are pictures, graphics or illustrations displayed on a computer screen. A **Template** is a document that has already been laid out in a certain way. **Page Orientation** is how the page is viewed - **landscape or portrait**
	Key Knowledge	**Substantive** Animated, interactive games are created using **sequence** and **events**. An **event** is an action detected by a **program**. An example of this is clicking the mouse. **Events** can be timed or respond to user **input**. **Selection** is when a program has to make a choice. **Disciplinary** Break down a long sequence of instructions into the largest repeatable sequence. Define ideas using code and symbols. Read and comprehend given code. Identify a bug and the problems it causes in a program. Describe and implement a plan to debug a program. Break complex tasks into smaller repeatable sections.	**Substantive** The **internet** is a network of networks **Networks** need to be kept secure The internet connects millions of computers at one time. The **World Wide Web** is part of the internet that contains websites and webpages **Disciplinary** Explain how the internet allows us to view the World Wide Web Describe where websites are stored when uploaded to the WWW Explain that websites and their content are created by people Explain that there are rules to protect content Explain why some information I find online may not be honest, accurate, or legal.	**Self-Image & Identity (Lessons 2&3)** Explain how online identity can be different to the identity presented in 'real life' Describe some of the motives behind online impersonation **Online Bullying (Lesson 3)** Reflect on how content posted may make some feel **Managing Information (Lesson 4,5 & 6)** Describe what is a 'bot' Describe techniques to identify if someone is talking to a bot **Health, Well-being & Lifestyle (Lessons 1&2)** Give examples of tech/online activities that effectively hold attention and engagement Give examples of what happens when someone has been online for too long **Copyright & Ownership (Lessons 1&2)** Demonstrate ways of recognising who might own online content Give examples of when you are not permitted to reuse online content	**Substantive** In computing repetition is called a **loop**. A **loop** can make an **algorithm** shorter and more efficient. An **infinite loop** is a sequence of instructions in a computer program which loops endlessly. A **count-controlled loop** uses a counter to keep track of the number of times the algorithm has occurred **Disciplinary** Change loops to produce a given outcome Choose when to use a count-controlled and an infinite loop Recognise that some programming languages enable more than one process to be run at once Re-use existing code snippets on new sprites Build a program that follows my design	**Substantive** **Robots** come in many forms and carry out a wide range of tasks. A **motion sensor** is a device which detects physical movement A **tilt sensor** is a component that can detect an angle or tilt change. The robotics industry is active in **Blyth** and there are jobs available in the local area creating and programming robots. **Disciplinary** Identify a clear design need. Follow a guided design process. Iterate and improve design solutions. Use known computational thinking and coding skills within the context of the We-do software program a robot to carry out a specific task.	**Substantive** An **image** is a picture that is produced by a camera To **edit** an image is to change its appearance To **crop** is to trim or remove the edges from an image **Disciplinary** Explain the effect that editing can have on an image Consider why someone might want to change the composition of an image Identify how an image has been retouched Give examples of positive and negative effects that retouching can have on an image Choose appropriate tools to retouch an image Sort images into 'fake' or 'real' and explain my choices
	Next Steps						
	Enrichment /Careers						

Computing Curriculum Map

Year 5	Unit	**Selection in Quizzes – Lesson adapted from Teach Computing - https://bit.ly/3c542Dg**	**Computer systems – sharing Information – lesson adapted from Teach Computing - https://bit.ly/2SEYMiR**	**Project Evolve** https://projectevolve.co.uk/	**Databases – Lesson adapted from teach Computing - https://bit.ly/3uxB710**	**Micro:bit – Data Handling – Lesson adapted from - https://bit.ly/3vsolSF**	**Creating Media – Video editing – Lesson adapted from Teach Computing - https://bit.ly/3vxrjFF**
	Key Concepts	**Computer Science** Algorithmic thinking	**Information Technology** Data	**Digital Literacy** Wellbeing, Lifestyle & identity	**Information Technology** Data	**Physical Computing** Hardware & Data	**Information Technology – Creative Project**
	Prior Learning	Animated, interactive games are created using **sequence** and **events**. An **event** is an action detected by a **program**. An example of this is clicking the mouse. **Events** can be timed or respond to user **input**. A **conditional** is when a computer program must make a choice.	The **internet** is a network of networks **Networks** need to be kept secure The internet connects millions of computers at one time. The **World Wide Web** is part of the internet that contains websites and webpages			In computing repetition is called a **loop**. A **loop** can make an **algorithm** shorter and more efficient. An **infinite loop** is a sequence of instructions in a computer program which loops endlessly. A **count-controlled loop** uses a counter to keep track of the number of times the algorithm has occurred	An **image** is a picture that is produced by a camera To **edit** an image is to change its appearance To **crop** is to trim or remove the edges from an image
	Key Knowledge	**Substantive** **Selection** is when a program must make a choice. **Conditionals** are used in **selection**. **Conditionals** and outcomes often use **'if… then… else**…' statements. **Conditionals** can tell **programs** to flow in one of two ways. **Disciplinary** Create a program for a purpose for example a quiz Create a program with different outcomes using selection Identify the outcome of user input in an algorithm Identify ways the program could be improved	**Substantive** A **computer system** is a set of integrated devices that **input**, **output**, **process**, and **store data** and information Networked digital devices have unique addresses called **IP addresses** **Data** is transferred over networks in **packets** **Data** in a computer is information stored as a system of ones and zeros. **Disciplinary** Explain that networked digital devices have unique address Recognise that connected digital devices can allow us to access shared files stored online Compare working online with working offline Explain how the internet enables effective collaboration Recognise that working together on the internet can be public or private	**Online Reputation (Lessons 1&2)** Understand that the information you find may not be accurate Understand that people may make judgements against others on the information that they find **Online Bullying (Lessons 1, 2& 3)** Explain the types of bullying behaviour Know that I have responsibility for my own behaviour and understand how this affects my relationships with others. Know who to speak to if someone I know was being bullied online **Managing Information (Lessons 7,8&9)** Understand how stereotypes may be reinforced online. Explain what is meant by a 'hoax' Describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful **Health, Well-being & Lifestyle (Lessons 2&3)** Know what a trusted source of online website/information looks like. Identify activities when using technology that could negatively impact on sleep **Privacy & Security (Lessons 1&2)** Identify the risks posed by not protecting accounts and information online Suggest some reasons as to why apps/companies request access to personal data.	**Substantive** A **database** is a set of structured information stored on a computer A **flat-file database** is a database of just one table A **database field** is a set of data values of the same type in a table To **filter** is to remove information that is not needed **Disciplinary** Order, sort, and group my data cards Navigate a flat-file database to compare different views of information Explain what a 'field' and a 'record' is in a database Outline how 'AND' and 'OR' can be used to refine data selection Select an appropriate chart to visually compare data Explain the benefits of using a computer to create graphs	**Substantive** A **digital assistant** is an advanced computer program that simulates a conversation A **sensor** is a device that measures a physical quantity and converts it into a signal which can be read **Binary Code** in how computers store information using 1s and 0s. A **Boolean** contains the value true or false **Disciplinary** Understand that some devices use sensors Explain how repetition is used when programming sensors Write algorithms that show how sensors will be used Know that data can be used as a condition in selection Write programs that use data as a condition Identify how digital assistant might work Write a program to use a micro:bit as a digital assistant	**Creating Media – Video editing – Lesson adapted from Teach Computing - https://bit.ly/3vxrjFF** **Substantive** A **video** is a recording of moving images made digitally **Audio** is sound, especially when recorded, transmitted or reproduced **Transitions** are effects used to move from one shot to the next in a video To **splice** is to join two video clips together **Disciplinary** Explain the benefits of adding audio to a video Plan a video project using a storyboard Locate and identify the working features of a digital device that can record video List some of the features of an effective video Record a video that demonstrates some of the features of an effective video Explain why lighting and angle are important in creating an effective video Make edits to my video and improve the final outcome Evaluate my video and share my opinions
	Next Steps						
	Enrichment/Careers						

Computing Curriculum Map

Year 6

Unit	**Variables in Games – Lesson adapted from Teach Computing - https://bit.ly/3c2voKh**	**Spreadsheets – Lesson adapted from Teach Computing - https://bit.ly/3vymV9j**	**Project Evolve** https://projectevolve.co.uk/	**Code.org Course F -** https://studio.code.org/s/coursef-2021 (units 1-20)	**Micro: bit – Getting Active – Lesson adapted from - https://bit.ly/3uvBWr1**	**Tinkercad - 3d Modelling – Lesson Adapted from teach Computing - https://bit.ly/34tHOqo**
Key Concepts	**Computer Science** Algorithmic thinking	**Information Technology** Data	**Digital Literacy** Cyberbullying and Online Conduct	**Computer Science** Algorithmic thinking	**Physical Computing** Hardware & Pattern Recognition	**Information Technology – Creative Project**
Prior Learning	**Selection** is when a program must make a choice. **Conditionals** are used in **selection**. **Conditionals** and outcomes often use **'if… then… else**…' statements. **Conditionals** can tell **programs** to flow in one of two ways.	A **database** is a set of structured information stored on a computer A **flat-file database** is a database of just one table A **database field** is a set of data values of the same type in a table To **filter** is to remove information that is not needed		A **digital assistant** is an advanced computer program that simulates a conversation A **sensor** is a device that measures a physical quantity and converts it into a signal which can be read **Binary Code** in how computers store information using 1s and 0s. A **Boolean** contains the value true or false	**Robots** come in many forms and carry out a wide range of tasks. A **motion sensor** is a device which detects physical movement A **tilt sensor** is a component that can detect an angle or tilt change. The robotics industry is active in **Blyth** and there are jobs available in the local area creating and programming robots.	
Key Knowledge	**Substantive** A **variable** is something your program needs to remember that might change. A **variable** has a name and value. **Variables** can hold numbers or letters. Values of **variables** can change. **Disciplinary** Identify examples of information that is variable Decide where in a program to change a variable Choose a name that identifies the role of a variable Test the code that I have written Identify ways that my game could be improved	**Substantive** A **spreadsheet** is a computer application which allows users to organise, analyse, and store data in a table A **cell** is a single box in a spreadsheet A **column** is a vertical block of cells and is referenced with a letter A **row** is a horizontal set of cells and is referenced with a number A **formula** is a calculation in a spreadsheet **Disciplinary** Explain the relevance of data headings Ask simple relevant questions which can be answered using data Build a data set in a spreadsheet application Construct a formula in a spreadsheet Apply a formula to multiple cells by duplicating it	**Self-Image and Identity (Lessons 1&2)** Describe ways in which media can shape ideas about gender, race, religion, disability, culture and other groups. Describe issues online that might make me, or others feel sad, worried, uncomfortable, or frightened. **Online Relationships (Lesson 2& 4)** Understand what 'boundaries' are, including online. Understand the potential impact of sharing 'inappropriate' pictures, both for the sharer and the person having pictures shared. **Online Reputation (Lesson 2)** Explain strategies anyone can use to protect their 'digital personality' and online reputation. **Online Bullying (Lesson 1&2)** Describe how to capture bullying content as evidence. Explain how someone would report online bullying in different contexts.	**Substantive** An **interactive animation** is a computer program that can be changed in real time often in response to an input A **Virtual Pet** is an animal that only exists in chips and pixels **Artificial intelligence** technology that enables a computer to think or act in a more "human" way A **URL** is a Uniform Resource Locator and is a link to a webpage **Disciplinary** Create an interactive animation using events. Develop programs that respond to timed events. Create an interactive virtual pet using events, behaviours, and custom art. Determine the relationship between how a variable is defined, stored, and retrieved when we press "Run" on a program. Discuss the role artificial intelligence plays in their lives. Train and test a machine learning model. Learn about the complexity of sending messages over the internet. Translate URLs into IP Addresses.	**Substantive:** A **computer chip** is a small electronic circuit. A **pedometer** is a **step counter**. Each **shake event** changes the counter **variable**. A **variable** is something your program needs to remember that might change. **Variables** can hold numbers or letters and can be set to display random numbers **Disciplinary** Write algorithms that use variables Debug programs containing variables Identify the uses of a step-counter Write an algorithm for a step-counter Program the BBC micro:bit as a step-counter To understand how a variable can be set to a random number To write programs that use random number variables	**Substantive** **CAD** stands for computed aided design **3d** is three dimensional The **workplane** is surface which allows you to stack 3d shapes **Rotation** is the movement of an object around the axis. To **group** is to join or merge shapes together **Discplinary** Discuss the similarities and differences between 2D and 3D shapes Explain why we might represent 3D objects on a computer Resize a 3D object Rotate a 3D object Identify the 3D shapes needed to create a model of a real-world object Group a digital 3D shape and a placeholder to create a hole in an object Evaluate my model against a given criterion
Next Steps						
Enrichment/ Cross						

Computing Curriculum Map

	Unit	E-Safety and How Computers Work	Website Creation	Spreadsheets
Year 7	Key Concepts	Digital Literacy: -Cyberbullying and Online Conduct -Wellbeing, Lifestyle and Identity	Digital Literacy: -Cyberbullying and Online Conduct Computer Science -Algorithmic thinking Information Technology -Data -Hardware	Information Technology -Data
	Prior Learning	**Year 6: Project Evolve** Describe issues online that might make me, or others feel sad, worried, uncomfortable, or frightened. Understand what 'boundaries' are, including online. Understand the potential impact of sharing 'inappropriate' pictures, both for the sharer and the person having pictures shared. Explain strategies anyone can use to protect their 'digital personality' and online reputation. Explain how someone would report online bullying in different contexts.	**Year 4: The Internet** The internet is a network of networks Networks need to be kept secure The internet connects millions of computers at one time. The World Wide Web is part of the internet that contains websites and webpages **Year 6: Code.org Course F** A URL is a Uniform Resource Locator and is a link to a webpage	**Year 6: Spreadsheets** Explain the relevance of data headings Ask simple relevant questions which can be answered using data Build a data set in a spreadsheet Construct a formula in a spreadsheet
	Key Knowledge	**Substantive** Be able to: Change passwords to have up to 8 characters with capital, lower case, numbers and symbols Login to VLE and access work Use hardware and software effectively Stay safe online through identifying threats Spot a phishing email and understand what to do if one is received Spot cyberbullying and be able to use "report abuse" to stop cyberbullying Spot when a computer has a virus Be able to know how to use the school Teams system **Disciplinary** Be able to: Identify hazards in an IT classroom Identify strong passwords Understand the difference between hardware and software Identify the difference between input, storage and output Explain the benefits and drawbacks of the different types of computers Explain the types of viruses Discuss the impact of cyberbullying on mental health	**Substantive** Be able to: Identify different types of connection methods that can be used to access the Internet Use browser tools to navigate webpages Select and use appropriate search techniques to locate information Use browser tools to share information sources with others Use references to make it easier to find information another time Identify the threats to user safety when working online **Disciplinary** Be able to: Explain when it is necessary to change browser settings to aid navigation Evaluate the different connection methods Outline how information meets requirements Discuss tools and techniques to communicate information online Explain the different opportunities that arise to post or publish material to websites Explain the purpose of relevant laws, guidelines and procedures for the use of the Internet	**Substantive** Be able to: Identify the correct cell reference that contains information Add the correct formulae into the correct cell in a spreadsheet Be able to use =SUM over formulae Identify when to use MAX, MIN and AVERAGE Create charts depending on the data added into a spreadsheet Problem solve and find errors Identify the difference between sort and filter **Disciplinary** Be able to: Explain the benefits and drawbacks of using a spreadsheet Explain why a function would be used over a formulae Explain which charts are the most appropriate for the data set Explain the importance of being able to sort and filter data Explain the importance of accurate data entry Explain the different formulae that are needed for different calculations Discuss why the $ in a formulae is important
	Next Steps	Year 7: Web Development	Year 9: Cyber Security	Year 11: Component 2

Computing Curriculum Map

Year 8	Unit	Principles of Computer Science/ Cloud Storage	App Development	Python
	Key Concepts	Computer Science -Decomposition -Abstraction -Pattern Recognition -Algorithmic Thinking Digital Literacy: -Cyberbullying and Online Conduct -Wellbeing, Lifestyle and Identity Information Technology: -Data	Computer Science: -Decomposition -Abstraction -Pattern Recognition -Algorithmic Thinking	Computer Science -Decomposition -Abstraction -Pattern Recognition -Algorithmic Thinking
	Prior Learning	**Year 6: Hardware and Pattern Recognition** Write algorithms that use variables Debug programs containing variables Identify the uses of a step-counter	**Year 8: Principles of Computer Science** Explain the importance of the four key principles of CS Explain why unambiguous steps are needed while coding Problem solve through a range of different issues to ensure that a potential solution can be reached Explain how input, process and output link Design a flowchart to solve a problem	**Year 8: Principles of Computer Science** Explain the importance of the four key principles of CS Explain why unambiguous steps are needed while coding Problem solve through a range of different issues to ensure that a potential solution can be reached Explain how input, process and output link Design a flowchart to solve a problem **Year 8: App Development** Implement and customise GUI elements to meet the needs of the user Apply decomposition to break down a large problem into more manageable steps Use variables in an event-driven programming environment Pass the value of a variable into an object
	Key Knowledge	**Substantive:** Be able to: State the four key principles of CS Define the four key principles of CS Give examples of input, process and output State the different flowchart symbols Draw a basic flowchart Give examples of variables State the definition of pseudocode Be able to know how to use the school Teams system **Disciplinary:** Be able to: Explain the importance of the four key principles of CS Explain why unambiguous steps are needed while coding Problem solve through a range of different issues to ensure that a potential solution can be reached Explain the term subroutine Explain how input, process and output link together in relation to CS, by providing CS related examples Design a flowchart to solve a problem Explain the importance of variable while coding Show how variables can be used while coding Explain the importance of pseudocode when decomposing a problem To show how pseudocode is completed throughout a problem	**Substantive:** Be able to: Identify when a problem needs to be broken down Recognise that events can control the flow of a program Use user input in an event-driven programming environment Identify and fix common coding errors Establish user needs when completing a creative project Use user input in a block-based programming language Use variables in a block-based programming language Use a block-based programming language to create a sequence **Disciplinary:** Be able to: Implement and customise GUI elements to meet the needs of the user Apply decomposition to break down a large problem into more manageable steps Use variables in an event-driven programming environment Pass the value of a variable into an object Reflect and react to user feedback Evaluate the success of the programming project	**Substantive:** Be able to: Identify when a problem needs to be broken down Recognise that events can control the flow of a program Use user input in an event-driven programming environment Identify and fix common coding errors Establish user needs when completing a creative project Use user input in Python Use variables in Python Use Python to create simple solutions to problems outlined **Disciplinary:** Be able to: Implement and customise the user interface to meet the needs of the user Apply decomposition to break down a large problem into more manageable steps Use variables in Python to manipulate data Create a basic quiz Reflect and react to user feedback Evaluate the success of the programming project
	Next Steps	Year 8: App Development	Year 8: Python Programming	Year 9: Python

Computing Curriculum Map

Year 9

Unit	Python Programming	Computer Project: Game Development and Construction	CyberSecurity	How Computers Work
Key Concepts	Computer Science -Decomposition -Abstraction -Pattern Recognition -Algorithmic Thinking	Computer Science -Decomposition -Abstraction -Pattern Recognition -Algorithmic Thinking	Computer Science: -Algorithmic Thinking Digital Literacy -Wellbeing, Lifestyle and Identity	Information Technology: -Data -Networks -Hardware Digital Literacy **-Copyright and Ownership**
Prior Learning	**Year 8: Python** Implement and customise the user interface to meet the needs of the user Apply decomposition to break down a large problem into more manageable steps Use variables in Python to manipulate data	**Year 8 App Development** Implement and customise GUI elements to meet the needs of the user Apply decomposition to break down a large problem into more manageable steps Use variables in an event-driven programming environment Pass the value of a variable into an object	**Year 7: E-Safety** Stay safe online through identifying threats Spot a phishing email and understand what to do if one is received Explain the types of viruses	**Year 7: How Computers Work** Understand the difference between hardware and software Identify the difference between input, storage and output Explain the benefits and drawbacks of the different types of computers
Key Knowledge	**Substantive** Be able to: Identify key terms in Python, and how we can quickly identify then Use basic functions to print strings to the console Take user input into programs and manipulate outputs to combine with hard coded strings Use a selection tool to have different outputs based on a user input **Disciplinary** Be able to: Explain where we could use a finite/ indefinite loop Know how to code for/ while loops To understand how to code an array Write to text files and display simple information Format information when printed to a file Load information into Python from an external file	**Substantive:** Be able to: Solve a variety of problems using computers Use a particle emitter object Be able to edit the properties of a particle object Create Instances of an object Add events to instances of objects Edit and orientations of objects Use sprites for a game **Disciplinary:** Be able to: Design computational components that model real world problems Demonstrate adequate testing methods through previewing the project at different states Design sprites for a game	**Substantive** Be able to: Define the key types of malware State the different legislation that protects users of digital devices Be able to recognise how human errors pose security risks to data Compare security threats against probability and potential impact to organisations **Disciplinary** Be able to: Explain the types of malware than can disrupt a computer system Explain the importance of staying safe online Discuss how dangers of online usage can be avoided Explain the impact of different legislation that can affect users of digital devices. Discuss the difference between Dos and Ddos. Be able to implement strategies to minimise the risk of data being compromised through human error Identify how networks can be protected from common security threats	**Substantive** Be able to: Identify the key components of a computer system. Describe the functions of the main components of a computer system within a network. Identify different network topologies. List advantages/disadvantages for different network topologies. List advantages/disadvantages for wired and wireless networks. List advantages/disadvantages of different storage devices. Be able to know how to use the school Teams system **Disciplinary** Be able to: Encode and decode data using binary. Use binary addition to encode and decode data. Design a network topology to meet a user's requirements. Choose a suitable storage device and justify the decision that has been made in regards to a network
Next Steps	Year 11: Algorithms	Year 11: Programming Fundamentals	Year 9: Impact of IT on Society Year 10: Comp 3 Effective Digital Working Practices	Year 9: Physical Comping & Modern Technologies

Computing Curriculum Map

	Unit	Systems Architecture	Memory and Storage	Computer networks and connection protocols	Network Security	Systems Software	Ethical, legal, cultural, and environmental impacts of digital technology
Year 10	Key Concepts	Information Technology **-Data** **-Hardware**	Information Technology **-Data** **-Hardware**	Computer Science -Data -Networks -Hardware	Information Technology **-Networks** Digital Literacy -Security and Privacy	Information Technology **-Data**	Computer Science: Ethics & Legislation **Digital Literacy** **-Cyberbullying and Online Conduct** **-Security and Privacy** **-Wellbeing, Lifestyle and identity** **-Copyright and Ownership**
	Prior Learning	**Year 9: How Computers Work** Identify the key components of a computer system. Describe the functions of the main components of a computer system. Explain the purpose of the CPU. Identify the main components of the CPU. Describe the factors that can affect the performance of the CPU.	**Year 9: How Computers Work** Identify the key components of a computer system. Describe the functions of the main components of a computer system. Choose a suitable storage device and justify the decision that has been made.	**Year 9: How Computers Work** Identify the key components of a computer system. Describe the functions of the main components of a computer system. Identify different network topologies. List advantages/disadvantages for different network topologies. List advantages/disadvantages for wired and wireless networks. Design a network topology to meet a user's requirements. Choose a suitable operating system to meet a user's requirements.	**Year 9: Cyber Security** Discuss the difference between Dos and Ddos. Be able to implement strategies to minimise the risk of data being compromised through human error Identify how networks can be protected from common security threats	**Year 9: How Computers Work** Describe what an operating system is. Describe the common features of an operating system. Identify different types of software. Describe how data is represented by computers.	**Year 9: Impacts of IT on Society (Ethical and Cultural)** To be able to understand the DPA and explain why this is used. Be able to explain which businesses do not need to use the DPA. Be able to state why the DPA is needed.
	Key Knowledge	**Substantive** Identify the stages of the fetch execute cycle Name the common parts of the CPU, including ALU, CU< cache and Registers Understand how the Von Neumann Architecture allows programs to be kept in memory and the ramifications this has for computing **Disciplinary** Explain what the different parts of the CPU does Know the impact of changing the clock speed, cache size and Number of Cores Be able to identify key features of embedded systems	**Substantive** Identify the need for primary storage Know the difference between RAM and ROM Understand the purpose of RAM/ROM in a system Identify when we need virtual memory Be able to identify 3 types of storage Understand lossy/lossless compression Know that data can be represented in a number of ways, such as sound and images **Disciplinary** Explain the best storage medium based on Capacity Speed Portability Durability Reliability Cost Be able to manipulate bits and bytes when working out sizes of files Understand character sets and why they are different	**Substantive** Identify the differences between a LAN / WAN Understand the different factors that affect the performance of networks Know the different roles of computers in client/ servers and Peer/ Peer networks Identify key hardware in a network such as: o Wireless access points o Routers o Switches o NIC (Network Interface Controller/Card) o Transmission media **Disciplinary** Explain the use of: o DNS (Domain Name Server) o Hosting o The Cloud o Webservers and Clients Explain the advantages and disadvantages of Star and Mesh topologies Discuss the need for encryption Know common protocols such as: TCP/IP (Transmission Control Protocol/Internet Protocol) HTTP (Hyper Text Transfer Protocol) HTTPS (Hyper Text Transfer Protocol Secure) FTP (File Transfer Protocol) POP (Post Office Protocol) IMAP (Internet Message Access Protocol) SMTP (Simple Mail Transfer Protocol) Understand the concept of Layers	**Substantive** Identify different types of attack such as: Brute-force attacks Denial of service attacks Data interception and theft The concept of SQL injection Know different forms of Social Engineering and how people are the 'weak point' Understand the characteristics of Malware **Disciplinary** Explain common prevention methods Know the use of penetration testing Understand and explain: o Firewalls o User access levels o Passwords o Encryption o Physical Security	**Substantive** Identify the purpose and functionality of operating systems Know different types of OS Identify the different needs for OS Identify purpose and functionality of utility software **Disciplinary** Explain encryption software Evaluate the use of defragmentation software on a computer and the impact this can have Understand the ramifications of Data Compression and what this can mean for files and transmission	**Substantive** Identify some impacts of digital technology on wider society Name 2 ethical issues Identify 2 legal issues Describe an environmental issue within computing **Disciplinary** Explain the emerging cultural issues from computing Explain the emerging issues from the internet and other communication devices Know and evaluate the different parts of the data protection act, and the impact it has on everyday computing Know the points of the Computer Misuse act and Copyright, Design and Patents act
	Next Steps	None yet (A Level CS in the future)	None yet (A Level CS in the future)	None yet (A Level CS in the future)	Year 12: BTEC IT Unit 1: Teaching of IT Systems	Year 12: BTEC IT Unit 1: Teaching of IT Systems	Year 12: Unit 1: Learning Aim D

Computing Curriculum Map

	Unit	Algorithms	Programming Fundamentals	Producing Robust programs	Boolean Logic	Programming languages and IDEs
Year 11	Key Concepts	Computer Science -Algorithmic Thinking -Pattern Recognition	Computer Science -Decomposition -Abstraction -Pattern Recognition -Algorithmic Thinking	Computer Science -Decomposition -Abstraction -Pattern Recognition -Algorithmic Thinking	Computer Science -Pattern Recognition -Algorithmic Thinking	-Decomposition -Abstraction -Pattern Recognition -Algorithmic Thinking
	Prior Learning	**Year 8: Principles of Computer Science** Explain why unambiguous steps are needed while coding Problem solve through a range of different issues to ensure that a potential solution can be reached Explain the term subroutine Explain how input, process and output link together in relation to CS, by providing CS related examples	**Year 9: Computing Project** Use functions effectively to encapsulate code where possible Pass data between functions in a larger program Use loops and nested loops to give different outputs		**Year 7: Web Development** Identify Boolean operators when searching for information	**Year 11: Programming fundamentals:** Use basic programming constructs to control the flow of a program Name the common arithmetic operators Define the common Boolean operators AND, OR and NOT Identify different data types such as Integers, Reals, Boolean, Strings and Casting
	Key Knowledge	**Substantive** Identify the key principles of computer science, including abstraction, decomposition and algorithmic thinking Identify the inputs, processes and outputs of a system Understand the key features of a flowchart Describe how a trace table works **Disciplinary** Explain and use different terms in OCR pseudocode Reference high level coding language Identify common errors Use trace tables to seek an output of an algorithm Describe standard searching and sorting algorithms	**Substantive** Identify variables, operators, inputs and outputs in a program Use basic programming constructs to control the flow of a program Name the common arithmetic operators Define the common Boolean operators AND, OR and NOT Identify different data types such as Integers, Reals, Boolean, Strings and Casting **Disciplinary** Explain how to use basic string manipulation Use basic file handling operations such as Open, Read, Write and Close Use records to store data Use SQL to search for data	**Substantive** Identify authentication Understand input validation Explain the need for maintainability including: Use of sub programs Naming Conventions Indentation Commenting Identify the purpose of testing **Disciplinary** Explain two types of testing Identify the difference between syntax and logic errors Explain suitable test data including: Normal Boundary Invalid Erroneous	**Substantive** Identify different types of Boolean operators Describe different operations such as: AND OR NOT Identify and connect different truth tables to the different operators **Disciplinary** Complete different truth tables based on the operators given Combine different operators Apply logical operators in truth tables to solve problems	**Substantive** Identify characteristics of different programming languages Identify Higher level languages and lower level languages, and why each would be used Describe a purpose of translators **Disciplinary** Explain the need for compilers and interpreters Explain common features of IDEs including: Editors Error Diagnostics Run-Time Environments Translators
	Next Steps	None yet (A Level CS in the future)	None yet (A Level CS in the future)	None yet (A Level CS in the future)	None yet (A Level CS in the future)	None yet (A Level CS in the future)

Computing Curriculum Map

Year 10 DIT	Unit	**Component 1: Exploring User Interface Design Principles and Project Planning A**	**Component 1: Exploring User Interface Design Principles and Project Planning B**	**Component 1: Exploring User Interface Design Principles and Project Planning B**	**Component 2: Collecting, Presenting and Interpreting Data A**	**Component 2: Collecting, Presenting and Interpreting Data B-C**
	Key Concepts	Information Technology Data Hardware	Information Technology Data Hardware	Information Technology Data Hardware	Information Technology Data	Information Technology Data
	Prior Learning	**Year 8: App Development** Work through the differing design principles involved in completing a GUI **Year 9: How Computers Work** Explain the differences between a GUI and a CLI. Explain how a GUI and CLI can be used as an interface. Explain the benefits and drawbacks of differing user interfaces.	**Year 10: Component 1: Exploring User Interface Design Principles and Project Planning A** Assess how user interfaces meet the user needs Analyse how the features help meet the user needs Explain how effective is each interface in matching user perception and retaining the users' attention	**Year 10: Component 1: Exploring User Interface Design Principles and Project Planning B** Assess how the user needs can be met Analyse the best methodology to use Explain how to apply planning methods to your assignment Conclude the use of accessibility features in your interface	**Year 7: Spreadsheets** Explain the benefits and drawbacks of using a spreadsheet **Year 9: Spreadsheet Modelling** Explain data collection and decision making for data analysis	**Year 11: Component 2: Collecting, Presenting and Interpreting Data A** Interpret a more complex data flow diagram Conclude collection methods and quality of data Assess data collection methods and features used Analyse how data collection affects the quality of data and decision making
	Key Knowledge	**Substantive** Be able to Identify different user interfaces State how a user interface meets user needs Identify different design principles State how user interfaces meet design principles Define different features for a user interface Define how a user interface is perceived by users **Disciplinary** Be able to Assess how user interfaces meet the user needs Analyse how the features help meet the user needs Explain how effective is each interface in matching user perception and retaining the users' attention Conclude how suitable the interface is and discuss alternatives that could be used. Evaluate how intuitive is the interface and how could it be developed further to better meet the user needs	**Substantive** Be able to Identify different user needs State the two different methodologies Identify different accessibility needs State how your user interfaces meet the design principles Define different design features planned for a user interface Define planning can take place **Disciplinary** Be able to Assess how the user needs can be met Analyse the best methodology to use Explain how to apply planning methods to your assignment Conclude the use of accessibility features in your interface Evaluate the plan and storyboard against the user needs and requirements	**Substantive** Be able to Identify the input on the interface State the methods of output on an interface Identify different accessibility needs State how your user interfaces meet the design principles Define different design elements that meet the user requirements Define the improvements that can be made **Disciplinary** Be able to Assess how your interface meets the user requirements Analyse user interface against the user needs Explain how to improvements can be made Conclude the success of the design for the interface Evaluate the planning and how well you used this in the project	**Substantive** Be able to Explain data collection Explain how data is used to make decisions State how collection methods can impact on the quality of data **Disciplinary** Be able to Interpret a more complex data flow diagram Conclude collection methods and quality of data Assess data collection methods and features used Analyse how data collection affects the quality of data and decision making	**Substantive** Be able to Explain what is a data dashboard Explain how you can manipulate data State how you can create a summary of data Explain the methods used to present data so it can be clearly understood Draw conclusions from the dashboard **Disciplinary** Be able to Select relevant methods to effectively and accurately manipulate data Create a fully efficient and comprehensive dashboard. Use relevant methods to effectively and accurately manipulate data Assess the effectiveness of the dashboard's presentation of data Assess how a dashboard affects the conclusions drawn and the recommendations made.
	Next Steps	Year 11: Component 3: Effective Digital Working Practices Year 12: Information Technology Systems	Year 10: Component 1: Exploring User Interface Design Principles and Project Planning Techniques C	Year 13 BTEC IT: Unit 6 – Website Development	Year 11: Component 2: Collecting, Presenting and Interpreting Data B	Year 11: Component 3: Effective Digital Working Practices C

Computing Curriculum Map

Year 11 DIT

Unit	Component 3: Effective Digital Working Practices A	Component 3: Effective Digital Working Practices B	Component 3: Effective Digital Working Practices C-D	Component 2: Collecting, Presenting and Interpreting Data A	Component 2: Collecting, Presenting and Interpreting Data B-C
Key Concepts	Information Technology Data Hardware	Information Technology Data Hardware	Information Technology Data Digital Literacy -Security and Privacy -Wellbeing, Lifestyle and identity	Information Technology Data	Information Technology Data
Prior Learning	**Year 9: How Computers Work** Explain the benefits and drawbacks of differing user interfaces. Choose a suitable storage device and justify the decision that has been made.	**Year 9: Cybersecurity** Explain the types of malware than can disrupt a computer system Explain the importance of staying safe online Discuss how dangers of online usage can be avoided	**Year 8: Principles of Computer Science** State the different flowchart symbols Draw a basic flowchart Design a flowchart to solve a problem Explain the importance of variable while coding **Year 9: Cybersecurity** Explain the impact of different legislation that can affect users of digital devices. **Year 10: BTEC DIT - Component 3 – Learning Aim AB** Assess the impact of security breaches Analyse how a business can make use of access restrictions	**Year 7: Spreadsheets** Explain the benefits and drawbacks of using a spreadsheet **Year 9: Spreadsheet Modelling** Explain data collection and decision making for data analysis	**Year 11: Component 2: Collecting, Presenting and Interpreting Data A** Interpret a more complex data flow diagram Conclude collection methods and quality of data Assess data collection methods and features used Analyse how data collection affects the quality of data and decision making
Key Knowledge	**Substantive** Be able to Identify the changes to modern teams facilitated by modern technologies State how to set up and use ad hoc networks Identify how modern technologies can be used to manage modern teams **Disciplinary** Be able to Assess how organisations use modern technologies to communicate with stakeholders Analyse the features and uses of cloud storage including synchronisation of cloud and individual devices and availability Explain the features and uses of cloud computing including online applications and collaboration tools/features Conclude the success of the use of modern technologies Evaluate the impact of modern technologies on organisations.	**Substantive** Be able to Identify ways and why systems are attacked State the different external threats there are Identify the different internal threats businesses have **Disciplinary** Be able to Assess the impact of security breaches Analyse how a business can make use of access restrictions Explain the features of anti-virus software Conclude how backups are used to recover data Evaluate the impact of security breaches in terms of damage to public image	**Substantive** Be able to Identify the different ways how data is shared between organisations State the impact of manufacture, use and disposal of IT systems on the environment Identify the benefits to organisations of equal access Identify the purpose and use of acceptable use policies Identify the purpose of the data protection principles State why unauthorised access and modification of materials is criminal Explain the use of a data flow diagram Draw a simple data flow diagram Draw an accurate flowchart representing a more complex scenario or algorithm State the advantages of presenting data in a graph or chart rather than a table of figures **Disciplinary** **Be able to** Assess the importance of providing equal access to digital services and information Assess the responsible use of data including ethical issues Analyse how the Data protection principles impact on a business Explain the responsible use of data with respect to privacy Conclude how business can suffer from criminal use of computer systems Explain the use of acceptable use policies in business Evaluate how the business has to be responsible in its use of data with respect to legal considerations Evaluate the environmental considerations when upgrading or replacing computers Interpret a more complex data flow diagram Analyse and explain the use of a system diagram Conclude a written explanation of figures in a table or graph	**Substantive** Be able to Explain data collection Explain how data is used to make decisions State how collection methods can impact on the quality of data **Disciplinary** Be able to Interpret a more complex data flow diagram Conclude collection methods and quality of data Assess data collection methods and features used Analyse how data collection affects the quality of data and decision making	**Substantive** Be able to Explain what is a data dashboard Explain how you can manipulate data State how you can create a summary of data Explain the methods used to present data so it can be clearly understood Draw conclusions from the dashboard **Disciplinary** Be able to Select relevant methods to effectively and accurately manipulate data Create a fully efficient and comprehensive dashboard. Use relevant methods to effectively and accurately manipulate data Assess the effectiveness of the dashboard's presentation of data Assess how a dashboard affects the conclusions drawn and the recommendations made.
Next Steps	Year 12: Unit 1: Teaching of Information Technology Systems C	Year 12: Unit 1 Information Technology Systems Learning Aim D	Year 12 BTEC IT Unit 1: Teaching of Information Technology Systems F	Year 11: Component 2: Collecting, Presenting and Interpreting Data B	Year 12: Unit 1 Information Technology Systems Learning Aim D

Computing Curriculum Map

Year 12 BTEC

Unit	1 – Learning Aim A	1 – Learning Aim B	1 – Learning Aim C	1 – Learning Aim D	1 – Learning Aim E	1 – Learning Aim F	Unit 2: Creating systems to manage information
Key Concepts	Information Technology **Data** **Networks** **Hardware**	Information Technology **Data** **Networks** **Hardware**	Information Technology **Data** **Networks** **Hardware**	Information Technology Data Networks **Digital Literacy** **-Security and Privacy**	Information Technology Networks Data **Digital Literacy** **-Security and Privacy**	Information Technology Data Networks	Information Technology Data
Prior Learning	**Year 9: How Computers Work** Identify the key components of a computer system. Describe the functions of the main components of a computer system. Explain the purpose of the CPU. Identify the main components of the CPU. Describe the factors that can affect the performance of the CPU. Explain the differences between a GUI and a CLI. Describe what an operating system is. Describe the common features of an operating system. Identify different types of software.	**Year 9: How Computers Work** Identify different network topologies. List advantages/disadvantages for different network topologies. List advantages/disadvantages for wired and wireless networks.	**Year 9: How Computers Work** Identify the key components of a computer system. List advantages/disadvantages for wired and wireless networks. List advantages/disadvantages of different storage devices. Choose a suitable storage device and justify the decision that has been made. **Year 10 Computer Science: – Memory and Storage** Explain the best storage medium based on Capacity Speed Portability Durability Reliability Cost	**Year 10 Computer Science: Network Security** Understand and explain: Firewalls User access levels Passwords Encryption Physical Security **Year 10 DIT: Component 3 LAB:** Assess the impact of security breaches Analyse how a business can make use of access restrictions Explain the features of anti-virus software Conclude how backups are used to recover data Evaluate the impact of security breaches in terms of damage to public image	**Year 12 BTEC IT: Learning Aim C** State different methods of data storage. Identify the different personal and professional uses of cloud storage. State the factors that affect online learning. State the methods of communicating online. Analyse the benefits and drawbacks of cloud storage. Evaluate the different systems that can be used to enable remote working. Evaluate the different methods of communicating online and their impact on businesses.	**Year 10 Computer Science: Ethical, legal, cultural and environmental impacts of digital technology** Explain the emerging issues from the internet and other communication devices Know and evaluate the different parts of the data protection act, and the impact it has on everyday computing Know the points of the Computer Misuse act and Copyright, Design and Patents act **Year 10 DIT: Comp 3 Learning Aim C:** Assess the importance of providing equal access to digital services and information Assess the responsible use of data including ethical issues Analyse how the Data protection principles impact on a business Explain the responsible use of data with respect to privacy Conclude how business can suffer from criminal use of computer systems Explain the use of acceptable use policies in business Evaluate how the business has to be responsible in its use of data with respect to legal considerations Evaluate the environmental considerations when upgrading or replacing computers	**Year 7: Databases** Explain why a primary key is important for identification in a database Explain the different formats of a database Explain why queries are used in a database over filtering Discuss why a report is used to present data Discuss why sorting and filtering information in a database is important
Key Knowledge	**Substantive** State the different types of digital devices. Identify the features of digital devices. Identify accessibility devices. State the digital devices that form part of an IT System. State the functions and uses of digital devices. Define the different types of operating systems. Identify peripheral devices. **Disciplinary** Explain the different types of digital devices and how they are used. Explain the features of digital devices and how they can be adapted. Discuss the different accessibility devices and why they have been adapted for specific needs. Explain each digital device that form part of an IT System. Explain the different types of operating systems and analyse which is best for specific situations.	**Substantive** State how IT systems can be connected to the internet. Identify the different types of computer network. Identify the factors affecting choice of computer network. Define lossy and lossless compression. State the protocols used on IT Systems. **Disciplinary** Explain the different between wired and wireless methods of connection. Explain the implications of selecting and using different connection types? Discuss the benefits and drawbacks of the different types of computer networks. Explain the difference between bandwidth and latency. Explain the different protocols that are used on IT systems. Analyse the benefits of using lossy and lossless compression.	**Substantive** State different methods of data storage. Identify the different personal and professional uses of cloud storage. Identify the systems that can enable remote working. State the factors that affect online learning. State the methods of communicating online. **Disciplinary** Analyse the benefits and drawbacks of cloud storage. Evaluate the different systems that can be used to enable remote working. Evaluate the different methods of communicating online and their impact on businesses.	**Substantive** State the issues of storing and transmitting data online. Identify the threats to data. State the characteristics of a threat to data. Identify the features of protecting data. State the law that relates to protecting IT Data. **Disciplinary** Evaluate the benefits and drawbacks of storing and transmitting data online. Discuss how online threats can be overcome. Explain why it is essential to have laws in place that protect online data. Explain the impact on individuals and organisations of legislation designed to protect data and IT systems.	**Substantive** State the issues of IT Systems. Identify the different online services State the features of online services. Define the term stock control. State the different sources of research. **Disciplinary** Evaluate the benefits and drawbacks of using IT Systems. Discuss the implications of using online systems. Explain the impact on individuals and organisations of using online systems. Explain how stock control systems can improve a business. Explain the impact and implications for organisations of IT systems. Explain the uses, processes and implications for individuals and organisations of accessing and using data and information in digital form.	**Substantive** State the impact of IT Systems. Identify the moral and ethical issues of using IT. State the codes of practice for the use of IT systems. Define the term codes of practice. State the legal issues relating to IT usage. State the legislation that is put in place to protect IT Systems. **Disciplinary** Evaluate the benefits and drawbacks of using IT Systems. Explain the moral and ethical issues of using IT and how they can impact business usage. Discuss the codes of practice for the use of IT systems and its impact of individuals and organisations. Explain the role of current legislation and how it is protecting users and their data Explain the guidelines and current legislation (and subsequent additions and amendments) designed to ensure the accessibility of IT systems.	**Substantive** Identify the key components of a relational database. State the advantages and disadvantages of using electronic databases. Identify techniques that will improve the efficiency of a relational database. Identify techniques that will improve the accuracy of the data stored in a relational database. Describe the different types of testing strategies that could be used to test the effectiveness of a relational database. Identify the strengths and weaknesses of a relational database. **Disciplinary** Analyse the requirements of a relational database from a given scenario. Design a suitable relational database using Normalisation. Create a relational database structure from Normalised data. Import data into a relational database structure. Improve the efficiency of the database structure through the use of validation and verification techniques. Improve the usability of a relational database by creating a user interface. Extract and manipulate data from a relational database. Identify the strengths and weaknesses of a relational database through methodical testing. Evaluate the effectiveness of a relational database.
Next Steps							

Computing Curriculum Map

	Unit	3 – Learning Aim A	3 – Learning aim B&C	Unit 6 Web Development Learning Aim A	Unit 6 Web Development Learning Aim B	Unit 6 Web Development Learning Aim C
Year 13 BTEC	Key Concepts	Digital Literacy -Cyberbullying and Online Conduct -Security and Privacy -Copyright and Ownership -Wellbeing, Lifestyle and identity	Digital Literacy -Cyberbullying and Online Conduct -Security and Privacy -Copyright and Ownership -Wellbeing, Lifestyle and identity	Computer Science Ethics/ Legislation Algorithmic Thinking	Computer Science Ethics/ Legislation Algorithmic Thinking	Computer Science Ethics/ Legislation Algorithmic Thinking
	Prior Learning	**Year 7: E-Safety** Change passwords to have up to 8 characters with capital, lower case, numbers and symbols Login to VLE and access work Use hardware and software effectively Stay safe online through identifying threats Spot a phishing email and understand what to do if one is received Spot cyberbullying and be able to use "report abuse" to stop cyberbullying	**Year 10 Component 1: Learning Aim A: Exploring User Interface design principles and project Planning Techniques** Assess how user interfaces meet the user needs Analyse how the features help meet the user needs Explain how effective is each interface in matching user perception and retaining the users' attention Conclude how suitable the interface is and discuss alternatives that could be used. Evaluate how intuitive is the interface and how could it be developed further to better meet the user needs	**Year 7: Web Development** Explain the different opportunities that arise to post or publish material to websites Explain the purpose of relevant laws, guidelines and procedures for the use of the Internet Select and use appropriate search techniques to locate information Use references to make it easier to find information another time Identify the threats to user safety when working online	**Year 7: Web Development** Explain the different opportunities that arise to post or publish material to websites Explain the purpose of relevant laws, guidelines and procedures for the use of the Internet Select and use appropriate search techniques to locate information Use references to make it easier to find information another time Identify the threats to user safety when working online	**Year 7: Web Development** Explain the different opportunities that arise to post or publish material to websites Explain the purpose of relevant laws, guidelines and procedures for the use of the Internet Select and use appropriate search techniques to locate information Use references to make it easier to find information another time Identify the threats to user safety when working online
	Key Knowledge	**Substantive** State the aims for businesses using social media. Identify social media audience profiles Identify business usage for social media State the different methods of advertising and promotion linked to social media for business. Spot the different content formatting and content focus methods that are used online. Define the term SEO. State the risk of businesses used social media in business. **Disciplinary** Explain how different social media platforms have different audience profiles. Explain why using advertising and promotion on social media is better than traditional methods. Discuss the benefits and drawbacks relating to using content formatting and content focus. Analyse the issues surround social media usage by businesses, such as negative comments. Evaluate the benefits and drawbacks of social media and why the Chamber of Commerce should promote the use of social media in business.	**Substantive** Identify business target audience. Identifying criteria for measuring success of the use of social media within a business. Selection of social media websites to use by matching site profiles to requirements in terms of a business use of social media Identifying targets for the use of social media, number of followers, 'likes' and shares. **Disciplinary** Develop high quality social media posts that have been optimised. Explain how keywords can impact the quality of social media posts. Explain how optimising posts can help to develop and increase a business' online community. Analyse analytical evidence of the posts developed for businesses. Evaluating outcomes to help inform high-quality justified recommendations and decisions. Evaluating targets to obtain insights into own performance.	**Substantive** Discuss the features of a website Explain the functions of a website Analyse a website Identify types of websites Explain what is meant by purpose Identify the purpose of a website Justify the design decisions to meet a purpose **Disciplinary** Identity what SEO is Explain why it is important to a website Analyse methods of SEO	**Substantive** Identify key points of the design process Explain what is meant by client requirements Analyse client requirements and suggest possible methods of meeting them Explain what is meant by target audience Identify target audience for a given website and explain your reasoning. Recommend design choices for a given target audience. **Disciplinary** Explain the term wireframe Discuss the benefits of producing a wireframe when working with a client Produce a wireframe design for a client need Explain the need for SEO for businesses operating online Identify methods of SEO Produce an SEO plan for a client need	**Substantive** What HTML is and why is it a standard How HTML is structured A range of tags/elements including: HTML Body Headings Paragraph Lists (Numbered/Bullets) Tables Images Hyperlinks DIV tags Methods of navigation in a website How to combine CSS with HTML to create an interactive navigation menu How to use internal/external links How to create and link to anchors **Disciplinary** A range of methods of incorporating digital multimedia including: Digital animation Digital graphics Digital audio Digital video The importance of using compression when uploading multimedia to a web server How to incorporate client-side scripting to create interactive elements on a website Types of scripting languages that can be incorporated Scripted elements including: Alerts, confirming choices, browser detection, creating rollovers, checking/validating input and handling forms. Use of constructs including: Syntax, iterations, selections, functions, parameter passing and handling events.
	Next Steps					