Forwards Centre Computing Curriculum

Rationale

At The Forwards Centre, we want to prepare pupils for a life in a continually changing digital and technological society. Technology is everywhere and plays a pivotal role, and will continue to do so, in our students' lives. This means it is important we provide them with the skills to develop in a digital world.

Contribution and Readiness

We ensure that the computing curriculum:

- Focuses on the progression of skills in Digital Citizenship, Digital Literacy, Computer Science and Information Technology.
- Builds pupils skills and knowledge in computing to allow them to affectively demonstrate their learning through the creative use of technology across the curriculum, such as creating music videos, podcasts and publishing their work.
- Provides students with the opportunity to learn computing though discrete and cross-curricular lessons based on how best to teach the intended curriculum.
- Allows for unplugged activities, where students are exposed to the ideas of computer science without the use of computers.

Conduct and Morals

We ensure that pupils develop their own character attributes through the computing curriculum by:

- Teaching our pupils to be responsible digital citizens and to understand the importance of online safety.
- All children sign a technology agreement to say they will look after equipment and use technology in a responsible way.

Celebrating similarity and difference

We ensure that pupils celebrate similarity and difference through the computing curriculum by:

- Looking at ours and others digital footprints to see how we share likes and dislikes.
- Being a good friend online, knowing about cyber bullying.

Caring for ourselves

We ensure that pupils learn to care for themselves through the computing curriculum by:

- Being careful when sharing information online.
- Knowing what is personal information.
- Knowing how and who to report things to when they feel something is wrong.
- Encouraging pupils to develop a critical, analytical and reasoned approach to problem solving.

Culture and Creativity

We ensure that pupils learn about culture and creativity through computing curriculum by:

- Having the skills to create art work using computer software.
- Learning coding to create games.
- Learning how to use computer packages to create interesting and powerful documents.
- Sharing in national days and joining local competitions.
- Creating musical pieces using computer software.
- Participating in making podcasts.

Curriculum Design

At the Forwards Centre the computing curriculum is based on a rolling two-year programme to allow for students who may be with us for a prolonged period of time. Each Computer Science topic looks at a new piece of vocabulary as they move up through the school so the students develop their understanding.

Reading is promoted in computing lessons, subject specific key vocabulary is displayed and explicitly taught to ensure that pupils are able to fully access the computing curriculum. Pupils are also taught to understand the disciplinary literacy of computing. Pupils are taught to;

- Understand and use specialised vocabulary and computing terms that may have a precise, technical meaning (e.g., "algorithm," "program," or "hardware") that differs from everyday usage.
- Understand computer programming languages – their syntax and structure.

Curriculum Intent

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Green Room Cycle A	Digital Citizenship Online Safety	Digital Literacy	Computer Science Algorithm		Information Technology	Digital Literacy / Computer Science Using and Applying
Green Room Cycle B	Digital Citizenship Online Safety	Digital Literacy	Computer Science Events/ Program		Information Technology	Digital Literacy / Computer Science Using and Applying
Blue and Burgundy Room Cycle A	Digital Citizenship Online Safety	Digital Literacy	Computer Science Sequence		Information Technology	Digital Literacy / Computer Science Using and Applying
Blue and Burgundy Room Cycle B	Digital Citizenship Online Safety	Digital Literacy	Computer Science Loops / Repetition		Information Technology	Digital Literacy / Computer Science Using and Applying
Purple Orange Yellow and Turquoise Room Cycle A	Digital Citizenship Online Safety	Digital Literacy	Computer Science Selection		Information Technology	Digital Literacy / Computer Science Using and Applying
Purple Orange Yellow and Turquoise Room Cycle B	Digital Citizenship Online Safety	Digital Literacy	Computer Science		Information Technology	Digital Literacy / Computer Science Using and Applying

	Green Room Cycle A	Green Room Cycle B	Blue and Burgundy Cycle A	Blue and Burgundy Cycle B	Purple Orange Yellow and Turquoise Room Cycle A	Purple Orange Yellow and Turquoise Room Cycle B
Digital Citizenship	• I can access the internet in an age-appropriate way • I know that some information should be kept private • I know how to behave appropriately online • I know the rules for keeping safe online	• I understand that people might behave and communicate differently online • I know that it is OK to say “no” • I can think carefully before adding information about myself online (digital footprint) • I can recognise bullying behaviour • I can explain how we can stay safe online in different situations and get help if we need it	• I can recognise that online identities can be different to real world identities • I know that people can overshare information that should be kept private • I know the impact of people being unkind online • I know that it is important to develop a healthy balance between online and real-life activity	• I can explain how my online identity can be different to my real-life identity • I know how to respect others while online and be aware of how online behaviour and content can impact on others • I know that anyone can search online profiles for information • I can describe ways that online bullying can occur and how it may affect others • I can discus positives and negatives to using technology and why limiting time might be important	• I can make responsible choices when sharing information online and understand how this could be used by others • I know when and how to get help • I can differentiate between types of bullying and when to report it and know where to get help from • I can describe some strategies, tips or advice to promote health and well-being with regards to using technology	• I can critically evaluate and reject inappropriate representations online • I know when and how to get help with issues online • I know the importance of developing a positive online reputation and how to do this • I know how to capture evidence of online bullying • I know about common systems that regulate age-related content
Digital Literacy	• I can log on • I can input text using a simple publishing program • I can and alter text using a simple publishing program • I can tell you the main keys for writing e.g.shift, space bar, full stop • I can use the digital camera independently	• I can log on to the school network • I can input and alter text and images using shortcuts on a simple publishing program	• I can develop my word processing skills – typing sentences / paragraphs and formatting, copying and pasting • I can create multimedia presentation using images and text • I can edit pictures in paint /photo manipulation software • I know how to save work to a specific location	• I can continue to develop my word processing skills – formatting, editing and adapting depending on the audience • I can extend the use of multimedia packages to include importing images, hyperlinks and the use of sounds recorded independently.	• I can use spreadsheets to create a graph • I can continue to develop word processing skills, reviewing and editing my work	• I can select appropriate tools to add emphasis and effect to my work • I can explain why I have chosen my layout and formatting • I can review and edit my work and talk about the changes I made • I can think about whether my work is suitable for the audience • I can draft and redraft my written work by deleting, inserting and replacing text to improve clarity and create mood

Computer Science	Algorithms • I can develop my knowledge of directional language • I can tell you what an algorithm is • I can create a simple program • I can debug a simple program that is causing an unexpected outcome.	Events/ Program • I can give and follow instructions, which include direction and turning command • I can plan and use logical reasoning to predict outcomes. • I can create a program that contains several commands for a device or software programme • I can debug a program that has caused an unexpected outcome. • I know what a program is • I know programs need an event to begin • I can explain the difference between an algorithm and a program	Sequence • I can use logical reasoning to explain what will happen next • I can solve problems by decomposing them into smaller parts. • I can use and edit a pre-written program to achieve a specific outcome • I can detect and debug errors in algorithms and programs. • I can sequence a simple program on Logo to produce a line drawing. • I can write a program to reproduce to complete an algorithm • I know that a sequence is a list of instructions in a particular order • I know that if I change the sequence, I may change the outcome of the program • I can predict how a change in a sequence may impact on the outcome of a program	Repeat or Loop • I can use sequence and loops (repetition) in programs confidently • I can detect and debug errors in algorithms and programs. • I can independently select and sequence code to make my own program. • I know that a 'loop is used to repeat a set of instructions • I can demonstrate the loop or repeat command (2Simple – 2Code / ScratchJr /Kodu /Kodable / LightBot / ALEX / Scratch) • I can explain why it is important to use 'loops' in particular place in my sequence •	Selection • I can plan and write an algorithm using the following: commands, sequence, selection 'if…then' (conditional statement) and repetition • I can use command within a series of commands – procedures I know what a procedure is • I can detect and debug errors in more complex algorithms and programs. • I know and can tell you what selection is • I can use selection to create games in which the user must make a choice • I can use my skills and understanding of selection in more than 2 programs	• I can confidently use selection, loops, variables and events. • I know and can explain what a variable is • I can use a variable in a variety of programming software – (Kodu) • I can confidently break a problem down and methodically create a program to solve it, testing and adapting as I go • I can evaluate the effectiveness of my programming and suggest improvement

Information Technology	• I can use the internet to find information • I can log onto the school network • I can search using digital tech and key words • I know why we use passwords • I can understand that people own work online	• I can use keywords to search for information on the internet • I can understand if information is real or imaginary • I know how to keep my information private	• I know how to use a search engine to find information and can identify which are the most relevant / reliable • I can explain what autocomplete is and how to choose the best suggestion. • I know the difference between 'opinions', 'beliefs' and 'facts' • I know the Importance of strong passwords and how to share information safely • .	• I can learn about search engines, safe searching and copyright • I know how companies use different methods to encourage people to buy things • I know that not everything I find and read online is true / real • I can describe different strategies for keeping my personal information private •	• I know that not everything is true that I find on the internet, • I can identify flag and report inappropriate content. • I understand that some people can try to 'influence', 'manipulate' and 'persuade' me online and explain how I might encounter these online (e.g. advertising and 'ad targeting'). • I understand the difference between online mis-information (inaccurate information distributed by accident) and dis-information (inaccurate information deliberately distributed and intended to mislead)	• I can research: Alan Turing; how did he developed technology and Elon Musk - how he is developing technology • I know and understand about copyright and how to cite references • I know how to maintain privacy and how to update app permissions • I know what technology will look like in the future
Consolidation project for Digital Literacy/ Computer Science	Use technology purposefully to create, organise, store, manipulate and retrieve digital content (NC 2014) Possible Project ideas: Create a personal presentation – All About me using Animated Stories - Purplemash Unit1.6	Use technology purposefully to create, organise, store, manipulate and retrieve digital content (NC 2014) Possible Project ideas: Create a story using PurpleMash 2Publish/2Create a story	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals (NC 2014) Possible Project ideas: Create a multimedia presentation/eBook, with a title page, incorporating images and text - create an animated story using 2Create a story to combine sound and image	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals (NC 2014) Possible Project ideas: Create an animation using PurpleMash 2animate / ICan Animate Book linked to Europe	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals (NC 2014) Possible Project ideas: Children to create a budget using excel for a party or trip.	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals (NC 2014) Possible Project ideas: Create a memory book/ presentation of their time at The Forwards Centre- Children given the opportunity to plan and create book using any software/app they have been taught how to use / have access to

Assessment and Progress in Computing

At the Forwards Centre we believe that regular assessment is crucial to learning, because it provides both staff and pupils with valuable insights into understanding and progress. It helps identify strengths and areas for improvement, guiding teaching strategies and the personalised support given to our pupils. Additionally, assessments help to ensure that learning objectives are met and that pupils are developing the skills and knowledge necessary for future success.

For every topic in computing, the mid-term plans set out the new knowledge and skills that pupils should acquire. During the term teachers use a range of formative and summative assessments to systematically check pupils' understanding and to establish what new knowledge and skills they have acquired. Every term teachers are asked to record any formative or summative assessments against the key knowledge objectives on the Insight system for the units of work that they have delivered.

At the beginning of the topic children complete a knowledge check which identifies any previous knowledge and gaps. Teaching is then adapted to meet the children's needs. We measure progress on an individual basis due to the diverse needs of our pupils.