**ICT & Computer Science**

**Intent**

The ICT & Computer Science department at Devizes is focused on a balance of Computer Science, Information Technology and Digital Literacy to provide a foundation of lifelong skills, knowledge and understanding. Allowing learners to build skills, knowledge and understanding that opens up pathways for their future’s. The awareness of technology that is used in the workplace and higher education will provide a solid foundation as they progress through education.

Everyone can code and every student should be given the opportunity to develop their critical thinking, problem solving and creativity skills. Students will be challenged through independent tasks that will be scaffolded from block-based coding through to high-level languages. The research backed evidence of upward social mobility that IT offers means that a solid foundation in IT is imperative for improving our student’s life chances.

ICT is filled with keywords, acronyms and a fast-changing vocabulary. Students will be encouraged to highlight words and use a glossary in the back of their exercise books to list keywords and help remove the barriers to accessing the subject.

Through our do now, targeted questioning, in-class activities and review questions students will be actively engaged in their learning to reiterate, recite and recall curriculum knowledge. The fast-changing landscape means that our curriculum is ever-evolving and developing to keep up with software, new technologies, emerging threats and evolving career paths.

**Implementation**

**Curriculum Map**

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| **Year 7** | | |
| **Term** | **Topic** | **Overview** |
| 1 | Digital Resilience | An introduction to online safety in secondary school empowering students to ask for help when needed and how to help others. |
| 2 | Branching Stories | Using the school network and understanding how to save and open files. Applying our PowerPoint knowledge to a scenario making use of:   * Slide transitions * Animations * Sounds and GIFs (with knowledge of the Copyright law) * Links (including testing) |
| 3 | Spreadsheets | Exploring the key features of spreadsheets such as:   * + - / \* * SUM, COUNTIF, COUNTA, IF * Conditional Formatting * Data Validation * Sorting |
| 4 | Scratch | Exploring key programming fundamentals in a block programming environment. |
| 5 | Microbits | Learning to program a physical pocket-sized computer with an LED screen, built-in speaker, microphone and touch sensor. |
| 6 | Binary and Logic Gates | What is binary and why do computers use it? How do logic gates work and why are they so important in our digital world? |
| **Year 8** | | |
| **Term** | **Topic** | **Overview** |
| 1 | Online Safety | Building knowledge on how to stay safe online and using technology. |
| 2 | Spreadsheets | Continue our learning of Spreadsheets and searching and sorting in large datasets. |
| 3 | Introduction to Python | Exploring key programming fundamentals in a high-level programming environment. |
| 4 | Website Development | Learning the language behind websites. How are websites designed and produced. |
| 5 | Mobile App Development | Returning to a block-based programming environment to explore the creation of an mobile phone app. |
| 6 | Inside a Computer | Learn about the different hardware in the computer. What does it do and how is it involved in the running of our applications. |
| **Year 9** | | |
| **Term** | **Topic** | **Overview** |
| 1 | Computer Crime | Looking at laws that surround ICT and Computer Science including the Computer Misuse Act and Data Protection Act. |
| 2 | Networks | What is a network, what components would we find on a network and how does the basics of encryption work? |
| 3 | Blender | Creation of 3D animations. |
| 4 | Databases | The creation and use of a relational database. |
| 5 | Spreadsheets | Continue our learning of Spreadsheets with the introduction of relative and absolute cell refencing and the use of vlookup. |
| 6 | Python | Stretching our Python knowledge with string manipulation, functions and external files. |
| **Year 10** | | |
| **Term** | **Topic** | **Overview** |
| 1 | R050: Topic Area 1 Design Tools  R060: Spreadsheet skills | Learn about the different design tools of flow charts, mind maps, visualisation diagrams and wireframes. Alongside this building on skills, knowledge and understanding of spreadsheet skills needed for the course. |
| 2 | R050: Topic Area 2 HCI / Topic Area 3 Validation & Verification  R060: Spreadsheet skills | Diving into Human Computer Interface and validation and verification. Applying this knowledge to the creation of Spreadsheets. |
| 3 | R060: NEA | Working on the first of two NEAs set by the exam board to create a solution to set a task. Using all of your prior knowledge from key stage 3 and terms 1 and 2 of year 10. |
| 4 | R060: NEA |
| 5 | R050: Topic Area 4 Cyber Security R070: AR Skills | Learning about cyber-security and legislation. What are the threats, impacts, preventative methods and what the law says.  Alongside the theory begin learning how to create an Augmented Reality development tool to present information. |
| 6 | R050: Topic Area 5 Digital Communications  R070: AR Skills | Continuing the journey of learning how to present information in an AR environment whilst also exploring the different types of digital communications. |
| **Year 11** | | |
| **Term** | **Topic** | **Overview** |
| 1 | R070: NEA | Working on the second of two NEAs set by the exam board to create a solution to set a task. Using all of your prior knowledge from year 10 to create an AR solution to a problem. |
| 2 | R070: NEA |
| 3 | R050: Internet of Everything | What is the IoE? Looking at emerging technologies and how this is applied in every day life (for example in energy, heath, manufacturing, military, emergency services and transport). |
| 4 | R050: Revision | Recapping all R050 theory topics and focusing on exam technique ready for the summer exam. |
| 5 | R050: Revision |