Key Stage 3 LTP

|  |
| --- |
| **Curriculum Intent** |
| **What are the objectives for your curriculum?**  *To give students a broad experience of Computer Science and Creative based topics, in line with National Curriculum and prepare them for KS4 study options. To give students a basic understanding of certain areas of computing that is relevant to their needs in the future – enabling them to continue and be productive members of a digital society.*  **What do you want pupils to be able to know and do by the time they end the stage?**  *To use basic Microsoft Office programs with confidence so this can be applied across all subjects and in the working world. For students to be able to use computer software creatively and responsibly. For students to understand not just how to use a computer but the science behind how their devices work, enabling them to become active, informed participants in the increasingly complex digital society.*  **How does your curriculum plan set out the sequence and structure of how it is going to be implemented?**  *Topics all have clear links to the Computer Science National Curriculum.*  **Why is it shaped the way it is?**  *Topics alternate between the technical and creative aspects of ICT / Computer Science to provide students with a varied and well-rounded experience.*  **How does your curriculum reflect the school's context?**  *Effort is taken to make sure all topics bare relevance to school's general ability level and general cohort make-up. We aim to provide a curriculum which meets national expectations but enables SJCS students to succeed in the job market of a digital society.*  **How does your curriculum reflect the schools Catholic Ethos?**  *The curriculum is designed at its core to enable learners to continue from SJCS with skills that will enable students to contribute positively, confidently, and effectively within society / employment industry. Emphasising an understanding of the moral implications around technology and its uses / abuses. We aim to create conscientious consumers and users of computer technology.*  **To what extent have you made these objectives clear?**  *Emphasis is placed on these values in resources and learning objectives (flight paths)*  **Does everybody know them?**  *All staff and students are aware of the moral expectations with the subject.*  **How does your curriculum reflect national policy (for example, British values and PSHE)?**  *E-Safety is a key topic within the KS3 curriculum and an area we are always looking to review and update with the changing demands of a digital society.*  **How does it cater for disadvantaged and minority groups?**  *The department makes significant effort to tailor the expectations of students to ensure they are accessible to all. That all necessary hardware is required, and homework's are designed so that it is accessible to all. The department ensures that for all students there is additional access to computers during lunch / after school sessions, to allow all students access to the hardware/software outside of classroom hours.*  **How does your curriculum cater for Higher Achieving pupils?**  In lessons we provide differentiation by outcome. Workbooks and ppt tasks have opportunities to self-set tasks, independent research/inspirations, and challenges. Some provide extension tasks that offer increased difficulty/challenges and there are exemplars for all units. Exemplars are used within each topic as a means of setting expectations and aiding students to understand the outcome.  Streaming of sets in Years 10 and 11 helps reduce class sizes and allow lessons tailored to higher ability learners. Additional "catch-up" sessions offered in lead up to deadlines where HA students can attend and receive 1-to-1 feedback on their work. |

|  |
| --- |
| **Prior Learning Summary** |
| St Osmunds Primary School have had several taster day sessions that run a small ‘Scratch programming project’ that let’s us see what their level of Computational Thinking and programming skills are.  Part of the introduction to the course is to ask several questions at the start of the term in year 7 to find out past computing experience: What types of computers have they used; have they used Scratch or other ‘block’ coding platforms; did they have dedicated IT lessons. (Used to gauge experience); how many lessons of ICT per week did they have?  Due to the mixed response a general overview of the topic must be used. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Curriculum Structure – Year 7** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | A | A | B | B | B | B | B | B | C | C | C | C | C | C | D | D | D | D | D | D | E | E | E | E | E | E | F | F | F | F | F | F | G | G | G | G | G | G | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Curriculum Structure – Year 8** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | G | G | G | G | G | H | H | H | H | H | I | I | I | I | I | I | J | J | J | J | J | J | L | L | L | L | L | L | M | M | M | M | M | M | M | M | M | M |

|  |  |
| --- | --- |
| **Unit A – Network Introduction** | |
| **Overview** | Introduction to school’s network procedures and health & safety info. |
| **Aims** | * Create usernames / passwords * Understanding what make a secure password * Understand how to work safely in computer room * Sign network agreement – Use of Equipment and expected behaviour within the ICT Suite). * Access school e-mails and learn rules for the safe and appropriate use. |

|  |  |
| --- | --- |
| **Unit B – Understanding Computers** | |
| **Overview** | In this project, Students learn the basics of machines / devices including What can be classed as a computer (the 4 processes that need to be met), Diverse types of computers that they interact with daily and their uses, Computer Components, Computer Peripherals, The responsible use of (Health and Safety). |
| **Aims** | Students will be able to:   * can explain why different computers are used for different purposes   • explain the pros and cons of different computer types  • Know the components of a computer  • explain what the main components of a computer do (their role within the computer)  • create a publication that is relevant to the audience and purpose  • HA - explain how changing computer components can improve its ability.  • HA - create a publication that is professional and error free |

|  |  |
| --- | --- |
| **Unit C – Image Editing** | |
| **Overview** | In this project, Students will learn the process of editing and manipulating images using the ADOBE Cloud Software package, specifically PhotoShop, whilst learning about the ethical considerations involved with image editing. They will learn about: Image improvement, Image Manipulation and Ethical considerations. |
| **Aims** | * Explain the pros and cons of image manipulation (ethical and moral) * Discuss the ethical and moral implications of image manipulation. * Following tailored Photoshop Tutorials, use the correct tools for specific tasks when editing an image * Work independently to enhance images using image editing software * Be enble to create an original edited image of their own design. |

|  |  |
| --- | --- |
| **Unit D – Staying Safe Online** | |
| **Overview** | In this project, students will be looking at a range of information and going through scenario's regarding online safety and use this to build your understanding of how to use social media and online services responsible. |
| **Aims** | * Understand the risks associated with Social Networking and Cyberbullying * Know safe practice when using the internet and know who to go to report concerns * Understand the personal responsibilities extend to online activities * Understand the consequences of inappropriate actions when online * Know how to protect your online identity and privacy * Know how to recognise and avoid Cyber Crime |

|  |  |
| --- | --- |
| **Unit E – Code.Org (Express Course)** | |
| **Overview** | In this project, Students learn the fundamentals of programming by completing lesson tasks that will create a functioning working p block program. They will develop problem-solving skills by working though different ability challenges. |
| **Aims** | * Can apply code to sprites and describe the effectsThey will develpo * Can select specific sprites and alter values in their code to make something happen * Can select from the block palette and suggest what the 8 blocks do * You can build, run and test a simple program given to you * Could select appropriate data types such as those shown in Motion, Looks, Operators * Could code using syntax and typography, carefully and precisely * Could code using selection and iteration, such as forever and repeat. * Could describe what certain blocks and strings of code do in the program * Could describe what basic strings and programs presented to you will do * Maybe develop, try-out and refine procedures in your own programs, looking for the most efficient way to improve your work * Can use and manipulate variables in the correct setting |

|  |  |
| --- | --- |
| **Unit F – Spreadsheets** | |
| **Overview** | In this project, students are introduced to and learn the basic functions of spreadsheet software Microsoft Excel. Students will learn how the software is used in the real world and learn basic formulas and functions to produce working spreadsheets. |
| **Aims** | Student can identify specific cells / cell ranges  Student can format cells  Student can apply conditional formatting to cells  Student can make use of the fill handle  Student can write basic formulas (SUM, subtract, divide, multiply) effectively using cell references  Student can write advanced formula (Average, Count, If, countif) effectively using cell references |

|  |  |
| --- | --- |
| **Unit G – Algorithms** | |
| **Overview** | You wil learn to develop your knowledge of what an algorithm is and how to construct one in the correct format so that someone could follow its sequence through to completion. You will need to spot ‘bugs’ in your algorithm and know how to correctly format them. |
| **Aims** | * Understand what an algorithm is * Follow an existing algorithm in order to test the outcomes * Write a basic algorithm to achieve a desired result * Make simple suggestions to help improve the effectiveness of an algorithm * Represent an algorithm as a simple flowchart * Understand and evaluate the effectiveness of an algorithm * Implement a pre-written algorithm within a programming language such as Scratch * Create a number of given shape sequences in Scratch using selection and iteration. * Improve the effectiveness of a program by implementing procedures. |

|  |  |
| --- | --- |
| **Unit H – Understanding the Internet** | |
| **Overview** | To gain a good understanding of the origin, development, and use of the internet from the very beginning to it use in modern society. |
| **Aims** | * Expalin what two words make up the word ‘Internet’ * Explain what routers do in a network * Understand what the internet is * Explain how information travels across the internet * Explain the role of an ISP (Internet Service Provider) in setting up an internet connection * Understand the difference between LAN and WAN networks * Give advantages and disadvantages of the 2 main types of network (LAN and WAN). |

|  |  |
| --- | --- |
| **Unit I – Vector imaging (Adobe Illustrator)** | |
| **Overview** | You will learn about vector images, understanding their format. You will create a variety of images form a project brief. You will be introduced to new software, Adobe Illustrator Software, which you will learn to use to a good standard. |
| **Aims** | * Know the difference between Vector and Bitmap image types * Use a range of vector drawing tools to produce simple shapes, straight and curved lines * Adjust the fill and stroke colours of objects you have created * Use a variety of vector drawing tools to create vector elements to a brief |

|  |  |
| --- | --- |
| **Unit J – Understanding Binary** | |
| **Overview** | In this project you will learn the binary system. You will understand why we use binary and how a computer reads and manipulates binary code to run programs, create images and send information. |
| **Aims** | * Understand how the binary system works * Convert binary numbers in to decimal numbers * Convert decimal numbers back into binary * Understand and explain the difference between the binary and decimal number systems * Convert 8-bit binary in to decimal numbers independently * Convert decimal numbers in to 8-bit binary independently * Understand what ASCII is and how it can be used to convert binary in to letters and symbols * Create a coded messages in binary that your peers can decode using ASCII * You can add, subtract and multiply binary numbers |

|  |  |
| --- | --- |
| **Unit K – Podcasting - Mixcraft** | |
| **Overview** | In this project you will learn the concepts behind podcasting and, by following a brief, produce your very own podcast. You will be introduced to new software, Mixcraft, which you will learn to use to a good standard. |
| **Aims** | * You can manipulate loops using an audio editing software * You are able to recording using new specialist hardware (mic, headphones) * You have planned and created a short podcast on a topic of your choice * You are able to edit and manipulate loops using an audio editing software * You have made good quality recordings in which your voice can be heard * You have made effective use of music at various points in your podcast * You have added additional media in to your project * You have planned and created a well organised, interesting podcast on a topic of your choice * You can effectively edit, manipulate and order loops using an audio editing software * You have made high quality recordings in which you can be heard clearly * You have used your own media files effectively to enhance your work * You have planned and created a professional sounding podcast |

|  |  |
| --- | --- |
| **Unit L – Code Combat – Introduction to Python Coding** | |
| **Overview** | Used as an introduction to coding, you will learn to manipulate an animated character though ever increasingly difficult levels of game play. You will learn to code in Python from basic syntax to more complicated lines of recursion. |
| **Aims** | * Correctly format code in Python * Use Strings in their code * Edit code correctly to give instructions (with correct spelling and grammar syntax (no bugs) * Write a basic loop * Use variables to store a value. |

|  |  |
| --- | --- |
| **Unit M – Cyber Explorers** | |
| **Overview** | Is an online, interactive, platform that seeks to enable students to learn skills that are linked to real world technological situations. This is achieved through an immersive, game field online learning experience. Students choose a particular character that specialises in a particular employment field and runs through the digital requirements required to be successful in that role. Challenges occur throughout the scenarios that involve cyber security, safety online and protecting personal data from misuse. |
| **Aims** | * Gives students the ability to cyber security concepts in a fun and low-stress manner. * A visual-based approach to learning that is fun and engaging using tailored challenges that focus specifically on important areas to cyber security when using a wide range of technological areas. * Students given a thorough understanding of the risks and defences against cyber-attacks by engaging non-gamer and gamer students * provides challenges the require the use exact up-to-date news and threats |

|  |  |
| --- | --- |
| **Unit G – iDEA Award (Bronze / Silver)** | |
| **Overview** | Is an online, interactive, immersive platform that has a reward system like that of the DofE awards.  Students complete badges that earn points that then when totalled issue a Bronze / Silver certification. The certificate is recognised by Colleges and Universities.  Badges re tailored to 5 categories: Citizen / Maker / Worker / Gamer / Entrepreneur. Each use challenges to help students develop and demonstrate their digital, entrepreneurial and employable skills. |
| **Aims** | * **Citizen Badge**: students to be more digital aware when being online and interacting with technology. * Awarenes of Safety and ethics * **Worker Badge**: students to be able to use tools and techniques that will be useful in the working environment and when finding employment. * **Maker Badge**: Students are able to show digital creativity, by showing how to build and make in different digital environments * **Entrepreneur Badge**: Students will be able to organise ideas and bring concepts to life through understanding of requirements. * **Gamer Badges**: Students are able to show a number of gamification techniques and produce basic interactive low level games. |

|  |  |
| --- | --- |
| **Unit H – Unit Title** | |
| **Overview** |  |
| **Aims** |  |