Computing
Long Term Plan

This Comprehensive Long-Term Scheme of Work is designed to meet the exacting standards set forth by the National Curriculum for Computing. Meticulously crafted, it offers an accessible, broad, balanced, and progressively sequential plan for the teaching of Computing, with additional insights available in the detailed Computing Rationale.

At Castle School, our curriculum is thoughtfully sequenced, harmonising computational concepts across all pathways. This structured methodology not only guides the next steps in learning but also ensures the impartation of core ICT/computing skills from Early Years Foundation Stage (EYFS) through Year 13. Tailored to individual pathway levels, it provides a dynamic framework for the stretch and progression of Gifted & Talented students.

The overarching goal of this long-term plan is to furnish pupils with not just digital literacy skills but also the relevant communication abilities and vocabulary necessary for real-world problem-solving. Beyond the classroom, computational knowledge serves as a catalyst for students to immerse themselves in diverse learning experiences, contributing to the development of cultural capital for future success. Emphasising a balanced approach, the plan seeks to integrate technology for effective education while prioritising positive mental health. Consistent staff discussions play a pivotal role in ingraining this holistic approach.

The collaboration between multidisciplinary teams and class leads at Castle School fosters inclusive learning environments. Leveraging cutting-edge technologies, these environments support communication, refine motor skills, and enhance computer accessibility. Specialised therapy rooms like iMax & Dark Room further contribute to the nuanced development of computing skills.

Early Years Seven key features of effective practice as identified in the DfE Development Matters guidance (July 2021): The best for every child; High-quality care; The Curriculum; Pedagogy; Assessment; Self-regulation and executive function; Partnership with parents.

In planning and guiding what children learn, practitioners will reflect on the 3 characteristics of effective learning: playing & exploring, active learning, creating and thinking critically.

Seven Areas of Focus

Communication and Language – Children will have opportunities
- **Interactive Storytelling:** Use interactive storytelling apps or simple storyboards with visuals to engage students in storytelling activities. Encourage verbal communication as students narrate stories, describe characters, and discuss plot elements.

- **Sensory Coding Activities:** Create hands-on coding activities using tactile materials like blocks or toys to represent coding commands. Encourage verbal communication as students describe their actions while programming sequences of movements**.**

- **Exploratory Play with Educational Apps:** Provide access to age-appropriate educational apps designed for early learners with SEN. Encourage verbal communication as students explore different features, activities, and concepts within the apps.

- **Collaborative Story Creation:** Facilitate collaborative story creation activities where students work together to create simple narratives using props, costumes, and digital storytelling tools. Encourage verbal communication as students discuss story ideas and roles, make decisions, and share their creations with peers.

Personal, Social & Emotional Development - Children will have opportunities
- **Collaborative Coding Projects:** Foster collaboration and teamwork by assigning coding projects that require students to work together in pairs or small groups. Encourage students to take turns, share ideas, and support each other in problem-solving tasks, fostering positive social interactions and teamwork skills.

- **Digital Citizenship Discussions:** Engage students in discussions about digital citizenship and online safety. Use age-appropriate resources and scenarios to teach students about responsible online behaviour, empathy, and respect for others, promoting social awareness and understanding.

- **Emotion-Based Coding Activities:** Incorporate emotion-based coding activities where students use coding tools to express emotions or tell stories about different feelings and experiences. Encourage students to reflect on their own emotions and empathize with others, promoting self-awareness and empathy.

- **Peer Feedback and Reflection:** Implement peer feedback and reflection sessions where students share their coding projects with peers and provide constructive feedback. Encourage students to listen actively, offer praise and suggestions, and reflect on their own learning and growth, fostering self-confidence and social skills.

Understanding the World - Children will have opportunities
- **Exploration of Digital Tools:** Provide opportunities for students to explore and interact with age-appropriate digital tools and devices, such as tablets, interactive whiteboards, or programmable toys. Encourage students to observe and investigate how these technologies work and how they are used in the world around them, promoting curiosity and exploration.

- **Virtual Field Trips:** Take students on virtual field trips using educational apps, websites, or virtual reality (VR) "experiences where possible." Explore different environments, cultures, and landmarks, and encourage students to ask questions, make observations, and share their thoughts and experiences, fostering curiosity and understanding of diverse perspectives.

- **Digital Storytelling about the World:** Encourage students to create digital stories or multimedia presentations about topics related to the world around them, such as nature, animals, or different cultures. Provide opportunities for students to research, explore, and express their understanding of these topics using digital tools, fostering curiosity, creativity, and understanding of the world.

Expressive Arts and Design - Children will have opportunities

- **Digital Art and Creativity:** Provide opportunities for students to explore digital art and creative expression using age-appropriate drawing and painting software or apps. Encourage students to experiment with colours, shapes, and patterns, and express their ideas and emotions through digital art, fostering creativity and self-expression.

- **Multimedia Storytelling:** Engage students in multimedia storytelling projects where they use digital tools to create and share stories through animation, audio recordings, or digital collage. Encourage students to use their imagination, creativity, and verbal communication skills to develop characters, plotlines, and narratives, fostering storytelling skills and creative expression.

- **Music and Sound Exploration:** Introduce students to music and sound exploration activities using digital tools and apps. Provide opportunities for students to experiment with creating and editing sound effects, music compositions, or audio recordings, and encourage them to express themselves through rhythm, melody, and sound, fostering creativity and auditory perception skills.
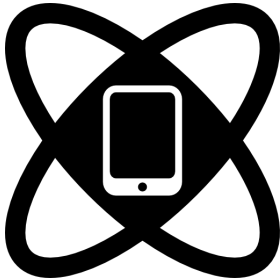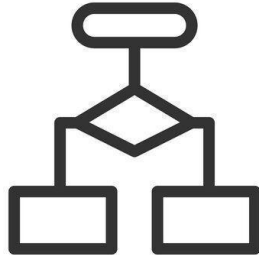
Literacy - Children will have opportunities

- **Digital Story time:** Use interactive storytelling apps or e-books to engage students in digital story time sessions. Encourage students to listen to stories, follow along with the text, and interact with the digital elements, fostering listening comprehension and early literacy skills.

- **Letter Recognition Games:** Introduce letter recognition games and activities using educational apps or interactive whiteboard games. Encourage students to identify letters, match upper and lowercase letters, and practice letter sounds through interactive gameplay, fostering early literacy skills and phonemic awareness.

- **Word Building Activities:** Provide opportunities for students to engage in word building activities using digital tools and resources. Use word processing software or letter tiles apps to create simple words, sentences, or stories, and encourage students to manipulate letters and words to build their literacy skills.

- **Digital Writing Projects:** Encourage students to participate in digital writing projects, such as creating digital journals, stories, or letters using word processing software or storytelling apps. Provide scaffolding and support as needed to help students express their ideas and develop their literacy skills through digital writing activities.
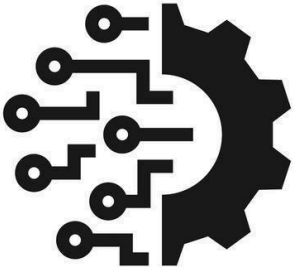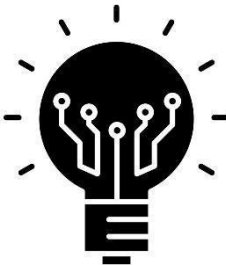
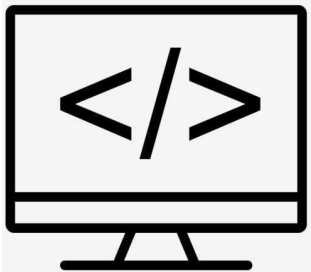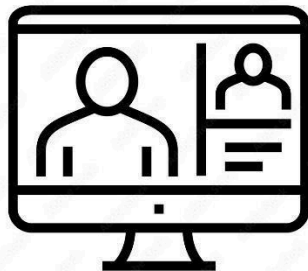**Maths - Children will have opportunities**

- **Counting and Number Recognition Games:** Utilize educational apps or interactive games that focus on counting, number recognition, and basic arithmetic skills. Encourage students to engage with activities that involve counting objects, matching numbers to quantities, and solving simple addition and subtraction problems, fostering early numeracy skills.
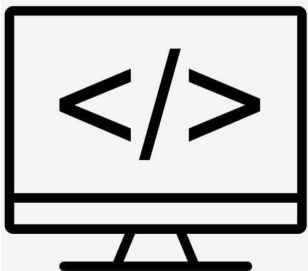
- **Shape and Pattern Exploration:** Introduce digital activities that focus on shapes, patterns, and spatial reasoning skills. Use interactive apps or games where students can explore different shapes, create and replicate patterns, and solve simple spatial puzzles, fostering understanding of geometric concepts and mathematical reasoning.

- **Measurement and Data Activities:** Provide opportunities for students to engage in measurement and data activities using digital tools and resources. Use interactive apps or simulations to explore concepts such as length, weight, capacity, and sorting/classifying objects, encouraging students to compare, order, and categorize objects based on different attributes, fostering measurement and data skills.

- **Mathematical Problem-Solving Games:** Incorporate mathematical problem-solving games and puzzles into the curriculum. Use digital resources such as math games apps or interactive whiteboard activities that present students with age-appropriate mathematical challenges, encourage them to apply mathematical concepts and strategies to solve problems, fostering critical thinking and problem-solving skills.

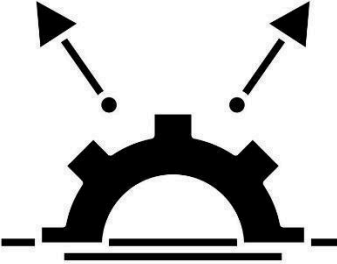| Key Stage 1	2024/25	2025/26	2026/27
Autumn	**Technology Around Us** Discovering Our Digital World - 	**Data** Exploring Data in Our World 	**Algorithms** Exploring Algorithms
Spring	**Digital Painting** Exploring Digital Artistic Expression 	**Coding** Exploring Creative Possibilities in Coding **<CODE/>**	**Digital Writing** Exploring Words in the Digital World
Summer	**Internet Safety**	**Digital Literacy**	**Digital Citizenship**

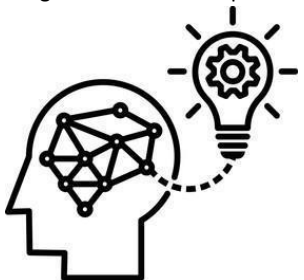|	Navigating the Digital World Safely	Digital Discovery	Navigating the Digital World Safely

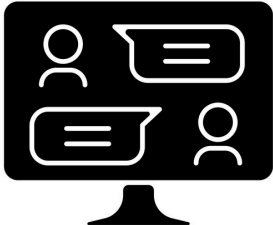| Key Stage 2	2024/25	2025/26	2026/27
Autumn	**Information Technology Skills** Navigating the Digital World 	**Digital Creativity** Creative Potential with Digital Tools 	**Hardware and Systems:** Understanding Digital Systems
Spring	**Computational Thinking:** Developing problem-Solving Skills	**Cybersecurity and Online Safety** Navigating the Digital World Safely	**Digital Citizenship and Ethics:** Navigating the Digital World Responsibly
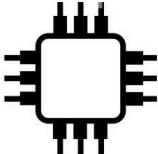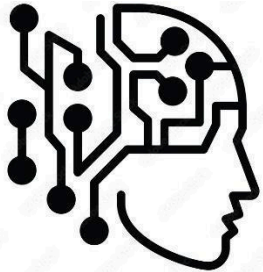
Summer	**Data Handling and Analysis:** Exploring Data in Our World 	**Computer Programming** Mastering Coding Concepts 	**Internet Research and Communication:** Exploring and Communicating Online

Key Stage3	2024/25	2025/26	2026/27
Autumn	**Digital Media Production** Understanding the Why and How 117386 USING DESKTOP PUBLISHING SOFTWARE,117387 USING ICT TO PRODUCE A POSTER OR LEAFLET, 112467 USING	**Data Creation & Analysis** Creating Data and understanding it	**Coding** Different methods of coding and what it does

	A DESKTOP PUBLISHING APPLICATION, 105892 SOCIAL MEDIA TRAINING: YOUTUBE AND YOUR SMART	114354 ANALYSIS OF DATA: DATA SAMPLING, 114358 ANALYSIS OF DATA: CUMULATIVE FREQUENCY GRAPHS, 79578 CONSTRUCTING AND INTERPRETING BAR CHARTS, 71047 INTRODUCTION TO DATA HANDLING (UNIT 1), 20206 BAR CHARTS, PICTOGRAMS AND CONDUCTING A SURVEY	122050 CREATING A SIMPLE PROJECT IN SCRATCH, 122054 GAME DESIGN CONCEPTS AND FLOWCHART CREATION 122049 EXPLORING THE SCRATCH PROGRAMMING INTERFACE AND BASIC COMMANDS
Spring	**Digital Safety and Legal Issues** Keeping myself and others safe 121952 USING THE INTERNET SAFELY, 121504 INTERNET SAFETY, WITH SUPPORT, 121356 INTERNET SAFETY	**System Architecture and Operating Systems** Different OS and their benefits 74890 PERSONAL COMPUTERS (UNIT 2): HARDWARE AND PERIPHERALS, 77239 INTRODUCTION TO BUILDING A PERSONAL COMPUTER	**Networks and Communications** How technology can be used to communicate 120374 USING TECHNOLOGY FOR LEISURE, COMMUNICATION AND RESEARCH 115865 DIGITAL SKILLS: ONLINE COMMUNICATION
Summer	**Emerging Technologies and Innovation** Whats new out there	**Computational Thinking and Problem-Solving** Thinking outside the box	**Advanced Technologies Around Us** AI and the virtual space

118615 ICT: INTRODUCTION TO MOBILE PHONES AND HOME TECHNOLOGY, 121333 USING DIFFERENT TECHNOLOGY INDEPENDENTLY

114244 COMPUTER SCIENCE (UNIT 2): DEBUGGING114246 COMPUTER SCIENCE (UNIT 4): DECOMPOSTION, 122061 BASICS OF TESTING AND DEBUGGING IN SCRATCH

117160 INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Key Stage 4	2024/25	2025/2026	2026/2027
Autumn	**Advanced Programming and Coding** Understanding how to create simple coded games 119506 BASIC CODING IN SCRATCH: DEBUGGING, 119508 BASIC BLOCKY CODING TO CREATE A COLLECTING COIN GAME, 120972 CREATING A FUNCTIONAL PIECE OF COMPUTER CODE, 119507 BASIC BLOCKY CODING TO CREATE A PONG GAME, 117907 CODING AND PROGRAMMING	**Computational Problem Solving** 121632 EMPLOYABILITY (UNIT 4): PROBLEM SOLVING, 119258 REALISING POTENTIAL: PROBLEM SOLVING	**Understanding Data & Information** Generating and manipulating data 113536 CREATING A SIMPLE DATABASE 112468 AN INTRODUCTION TO SPREADSHEETS 92960 CREATING A SPREADSHEET

Spring	**Digital Communication** Benefits and uses of digital communication 120374 USING TECHNOLOGY FOR LEISURE, COMMUNICATION AND RESEARCH 115865 DIGITAL SKILLS: ONLINE COMMUNICATION	**Emerging Technologies and Trends** Virtual Realities and new innovations 110678 USING A VIRTUAL REALITY HEADSET WITH SUPPORT 111958 USING A VIRTUAL REALITY HEADSET	**Digital Art Mobile App Creation** Graphic Creation 120720 DIGITAL ART: EXPLORING TECHNIQUES 111197 CREATING AND SHARING ARTWORK INSPIRED BY A FAMOUS ARTIST 115608 PRODUCING ARTWORK FOR PUBLIC EXHIBITION
Summer	**Hardware and Components** What makes up a computer and what they do 121003 DESIGNING AND MAKING A SPEAKER WITH SUPPORT, 120343 INTRODUCTION TO ELECTRONIC CIRCUITS, 120603 UNDERSTANDING REMOTE CONTROL SYSTEMS USING A MODEL VEHICLE	**Cybersecurity and Safety** What we can uses to keep us secure 96491 UNDERSTANDING PERSONAL SAFETY ON SOCIAL NETWORKING SITES, 116063 INTERNET SAFETY, 30376 EMPLOYABILITY SKILLS: ICT	**Artificial Intelligence** What is and what it can be used for 117160 INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Post 16 – Preparation for Adulthood Programme covered within ASDAN accreditation