COMPUTING MEDIUM TERM OVERVIEW

COMPUTING

INTENT – Luddenden CE School is committed to providing an environment which inspires confident, independent and innovative learners. Our Computing curriculum is designed to ensure our pupils develop the knowledge and skills that will enable them to go out into the world digitally literate and able to participate fully in the future digital lifestyles and workplace. We aim for our pupils to become digital creators as well as discerning digital consumers. Our curriculum ensures that pupils understand how to keep themselves safe online and develops pupils' resilience and responsiveness to the ever-changing online world and world of technology. Our core values in Computing are creativity, endurance, openness and respect.
IMPLEMENTATION – The Kapow Computing scheme of work will form the core computing curriculum. Throughout their time in school pupils will build, strengthen and enhance their computing knowledge, skills and understanding through a wide range of engaging, practical and relevant learning activities. Optimum use will be made of cross-curricular links to consolidate learning in Computing and to promote learning in other subjects.
IMPACT - Children can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. Children can analyse problems in computational terms, and have repeated practical experience of coding in order to solve such problems. Children can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems. Children are responsible, competent, confident and creative users of information and communication technology. Children know how to stay safe online.

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Early Years	Computing continuous provision	**Computing systems and networks: Using a computer** 1. Keyboards 2. Logging in & out 3. Mouse control 4. Mouse control – clicking 5. Mouse control – clicking & dragging	**Programming 1: All about instructions** 1. Following instructions 2. Giving simple instructions 3. Dressing up instructions 4. Debugging instructions (washing hands) 5. Predictions **Safer** Internet Day	**Computing systems and networks: Exploring hardware** 1. Exploring hardware tinker tray 2. Real world tinker tray 3. Pictures of play 4. Picture walk 5. Class photo album	**Programing 2: Bee-Bots** 1. Understanding arrows 2. Introducing the Bee-Bot 3. Simple Bee-Bot programming 4. Understanding algorithms 5. Programming a Bee-Bot	**Data handling: Introduction to data** 1. Loose parts play 2. Sorting ourselves 3. Yes or no? 4. Creating a branching database 5. Exploring pictograms
Year 1	**Computing systems & networks: Improving mouse skills** 1. Logging in 2. Click & drag skills 3. Drawing Shapes 4. Drawing a story 5. Self Portrait **Safety**: Using the internet safely	**Programming 1: Algorithms and debugging** 1. What is an algorithm? 2. Algorithm pictures (inputs & outputs) 3. Virtual assistants (decomposition) 4. Step by step 5. Debugging directions **Safety**: Online emotions	**Skills showcase: Rocket to the moon** 1. Rocket materials 2. Rocket design 3. Rocket building instructions 4. Making a rocket 5. Rocket Launching **Safer** Internet Day	**Programming 2: Digital Bee-Bots** 1. Digital classroom robots 2. Exploring digital bee-bots 3. Programming digital bee-bots 4. Digital Bee-Bot game 5. Digital Bee-Bot mystery **Safety**: Always be kind and considerate	**Creating media: Digital imagery** 1. Planning a photo story 2. Taking photos 3. Editing photos 4. Searching for images 5. Photo collage **Safety**: Posting and sharing online	**Data handling: Introduction to data** 1. Zoo data 2. Picture data 3. Minibeast hunt 4. Animal branching databases 5. Inventions **Safety**: How much time should we spend on technology?
Year 2/3 Cycle A	**2. Computing systems and networks: What is a computer?** 1. Computer parts 2. Inputs 3. Technology safari 4. Inventions 5. Real-world role play **2. Safety**: What happens when I post online?	**2. Computing systems and networks: Word Processing** 1. Getting to know the keyboard 2. Getting started with word procession 3. Newspaper writer 4. Poetry book 5. Digital writer **2 Safety**: How do I keep my things safe online?	**2. Creating media: Stop motion** 1. What is animation? 2. My first animation 3. Planning my project 4. Creating my project 5. Creating my project **Safer** Internet Day	**3. Computing systems & networks: Networks** 1. What is a network? 2. A file's journey 3. How a website works 4. Routers 5. What is packet data? **2 Safety**: It's my choice	**3. Computing systems & networks: Emailing** 1. Communicating with technology 2. Sending an email 3. Adding attachments 4. Be kind online 5. Fake emails **2 Safety**: Is it true?	**3. Computing systems and networks: Journey inside a computer** 1. Inputs & outputs 2. Building a paper laptop 3. Following instructions 4. Computer memory 5. Dismantling a laptop **Safety**: Online safety poster
Year 2/3 Cycle B	**2. Programming 1: Algorithms and debugging** 1. Dinosaur algorithm 2. Machine learning 3. Through the maze 4. Making maps 5. Unplugged debugging **3 Safety:** Beliefs, opinions & facts on the internet	**2. Programming: Scratch Jr** 1. Using Scratch Jr 2. Creating an animation 3. Making a musical instrument 4. Programming a joke 5. 'The 3 Little Pigs' algorithm **3 Safety:** Who should I ask?	**2. Data handling: International Space Station** 1. Homes in space 2. Space bag 3. Warmer, colder 4. Experiments in space 5. Goldilocks planets **Safer** Internet Day	**3. Programming: Scratch** 1. Tinkering with Scratch 2. Storytelling in Scratch 3. Planning a remix 4. Remixing an animation 5. Evaluating an animation **3 Safety**: When being online makes me upset	**3. Creating media: Video trailers** 1. Planning a book trailer 2. Filming 3. Editing the trailer 4. Transitions & text 5. Video reviews **3 Safety**: Sharing of information	**3. Data handling: Comparison cards databases** 1. Records, fields & data 2. Race against the computer 3. Sorting & filtering 4. Representing data 5. Planning a holiday **3 Safety**: Rules of social media platforms
Year 4/5 Cycle A	**4. Creating media: Website design** 1. Getting to know Google sites 2. Book review webpage 3. Creating a webpage 4. Planning my website 5. Creating my website **4. Safety:** What happens when I search online?	**4. Skills showcase: HTML** 1. What is HTML? 2. Remixing with HTML 3. HTML unplugged 4. Website hacking 5. Replacing images **4. Safety**: How do companies encourage us to buy online?	**4. Computing systems and networks: Collaborative learning** 1. Teamwork 2. Sharing a document 3. Slide presentations 4. Google forms 5. Shared spreadsheets **Safer** Internet Day	**5. Data handling: Mars Rover 1** 1. Mars Rover 2. Binary code 3. Computer architecture 4. Using binary – numbers 5. Using binary - text **4. Safety:** Fact, opinion or belief?	**5. Programming: Micro:bit** 1. Tinkering with BBC Micro:bit 2. Programming an animation 3. Programming a pedometer 4. Using the temperature sensor 5. Debug & evaluate **4. Safety**: What is a bot?	**5. Skills showcase: Mars Rover 2** 1. Pixels 2. Compressing images 3. Fetch-Decode-Execute cycle 4. Tinkering with CAD 5. Tinkercad design **4. Safety:** What is my #TechTimetable like?
Year 4/5 Cycle B	**4. Data handling: Investigating weather** 1. What is the weather? 2. Weather stations 3. Extreme weather 4. Satellites & forecasts 5. Presenting forecasts **5. Safety:** Online protection	**4. Programming: Further coding with Scratch** 1. Exploring variables & conditions 2. Using conditions & sensors 3. Planning a game 4. Programming a game 5. Evaluating a game **5. Safety:** Online communication	**4. Programming: Computational thinking** 1. Decomposition & pattern recognition 2. Abstraction 3. Algorithm design 4. Computational thinking in action 5. Evaluating computational thinking **Safer** Internet Day	**5. Creating media: Stop motion animation** 1. Animation explored 2. Exploring stop-motion 3. Planning my stop-motion project 4. Stop motion creation 5. Editing my stop-motion project **5. Safety:** Online reputation	**5. Computing systems and networks: Search engines** 1. Searching basics 2. Inaccurate information 3. Web quest 4. Information poster 5. Web crawlers **5. Safety**: Online bullying	**5. Programming: Programming music** 1. Tinkering with Scratch music elements 2. Scratch soundtracks 3. Planning a soundtrack 4. Programming a soundtrack 5. Evaluating a soundtrack **5. Safety:** Online health
Year 6	**Computing systems and networks: Bletchley Park and the history of computers** 1. Secret codes 2. Brute force hacking 3. Computers of the past 4. Future computer 5. Audio adverts **6. Safety:** Life online	**Computing systems & networks: Exploring AI** 1. What is AI? 2. AI & text 3. AI through images 4. Coding AI 5. Ethics & AI **6. Safety:** Sharing online	**Data handling: Big data 1** 1. Barcodes 2. Transmitting data 3. RFID 4. Using RFID 5. Transport data **Safer** Internet Day	**Programming: Intro to Python** 1. Tinkering with logo 2. Nested loops 3. Using Python 4. Using loops in Python 5. Coding Mondrian **6. Safety**: Creating a positive online reputation	**Data handling: Big data 2** 1. Transferring data 2. Data usage 3. The internet of things 4. Designing a smart school 5. Smart school presentation **6. Safety**: Capturing evidence	**Skills showcase: Inventing a product** 1. Invention design 2. Coding & debugging 3. Computer Aided Design 4. My product's website 5. Video advert **6. Safety:** Password protections **6. Safety**: Think before you click