Curriculum Intent	**Pupils will be taught using the following National Curriculum guidelines:**
Skills/National Curriculum Links	Computing – KS3 Key stage 3 Pupils should be taught to: • design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems • understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem • use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions • understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] • understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems • understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits • undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users • create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability • understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognize inappropriate content, contact and conduct and know how to report concerns.
Numeracy	
Literacy	**Vocabulary Tier 2:** Camera, push button, rules, decisions, morals, bias, email, **Vocabulary Tier 3:** Facial recognition, fingerprint recognition, language processing, neural network, self-driving cars, sensors, embedded, training data, machine learning, structured data, spam, ethics, algorithms, utilitarianism, bits, binary, fuzzy logic, intelligence, IQ, Turing test, Captcha, chatbots, virtual assistants, sentiment analysis, weightings. **Reading:** Presentations, worksheets, and homework **Writing:** complete worksheets and skill task **Oracy:** Learn how to pronounce difficult or new keywords **SMSC:** Understand ethical issue of programming, the dilemmas that self-driving cars face **PSHE:** What is the impact of Ai on jobs, on society, on freedom **Careers:** Ai Researchers, Data scientists, Machine Learning Engineers, Deep Learning Engineers, Robotic Scientist **Literacy:** literacy slide will provide a definition of the keyword, antonym and synonym **Numeracy:** N/A
Adaptation	Throughout this topic, quality first teaching will provide differentiation:
QFT/SEND Provision	**By product:** Learning will produce work on a variety of different levels, a mix of individual, think pair share, designing original maters, Q&A with teacher, teacher marking and self-marking. **By resource:** presentations, worksheets with extension tasks **By Intervention**: by providing different levels of supervision/support, seating plan, use of TA **By Progressive Questioning:** exploring pupils' understanding through interactive dialogue. **By Grouping:** according to prior attainment, gender, social preference, preferred learning style. **By Task:** Pupils should be involved in the identification of targets which are meaningful to them and in the selection of an appropriate task from the given range. **By Offering Optional Activities:** In class or as homework, to extend learning. This QFT/SEND provision will be explicit within the lesson-by-lesson schemes of work.

Implementation Curriculum Delivery	To be able to: This SOW is currently being updated.			
Learning Outcomes (Knowledge)	Artificial Intelligence	What is AI?	Understand the origin and uses of AI Understand how rules are used in AI decision making Investigate the rules needed to solve problems including: – Classification – Navigation of a maze or road	
		Machine learning	Understand the difference between facts and rules Describe uses of machine learning Use training data to create rules that solve problems of categorising data Discuss the strengths and weaknesses of machine learning	
		Ethics of AI	Understand what ethics is – Consider some simple ethical hypothetical problems – Understand and discuss ethical issues as they relate to AI Understand how jobs can be affected by AI and automation Understand how bias can be introduced into AI algorithms and machine learning	
		Image recognition	Understand issues that make facial recognition difficult Understand how images are stored as binary data Describe a technique for detecting patterns in a grid of pixels Review program code and adapt it to detect given shapes	
		Turing tests and chatbots	Understand how intelligence can be measured in humans and computers Know what the Turing test is and how it works Understand why interpreting patterns is not as useful a skill as 'thinking' Program a chatbot	
		Rate my review	Understand the analysis of text to rate an attitude or opinion Describe the opportunities and problems of using AI for sentiment analysis Review the program and identify areas for improvement	
Current learning to be developed in the future within:	This SOW will be built upon when writing programs with Microbit, Edison Robots and PyCharm in year 7, 8 and 9 to ensure pupils understand the ethical rules of writing a program.			
Assessment	• Refer to assessment maps for formative and summative assessment opportunities.			
Impact	• Learning will be tested during **Summative Assessment 2**. • Assessment results will indicate pupils emerging, developing, securing or mastering. • Data review documentation will indicate if pupils are underachieving, meeting or exceeding MEG grade. • In line with the departmental marking policy, quality written feedback will be provided for the specified marked piece			