YEAR 9 (Computer Science)
HALF TERM 2.2

MAGHULL HIGH SCHOOL – CURRICULUM MAP

Unit: AI & Machine Learning	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
LESSON TOPIC QUESTION(S)	**What is AI?**	**How do machines learn?**	**How are ethics developed in AI?**	**How do computers recognise different images?**	**How is intelligence measured in computers?**	**Can AI accurately analyse sentiment?**
Knowledge & Skills development	**Theory Knowledge** *Understand the origin and uses of AI* *Understand how rules are used in AI decision making* *Understand what ethics is* *Understand how intelligence can be measured in humans and computers* *Know what the Turing test is and how it works* *Understand the difference between facts and rules* *Describe uses of machine learning* *Understand what ethics is* *Understand and discuss ethical issues as they relate to AI* *Understand how jobs can be affected by AI and automation* *Understand issues that make facial recognition difficult* *Understand how images are stored as binary data* *Review program code and adapt it to detect given shapes* *Understand the analysis of text to rate an attitude or opinion* *Review the program and identify areas for improvement* *Discuss the strengths and weaknesses of machine learning* *Understand how bias can be introduced into AI algorithms and machine learning* *Describe the opportunities and problems of using AI for sentiment analysis* *Understand why interpreting patterns is not as useful a skill as 'thinking'*			**Digital Skills** *Investigate the rules needed to solve problems including:* *Classification* *Navigation of a maze or road* *Use training data to create rules that solve problems of categorising data* *Describe a technique for detecting patterns in a grid of pixels* *Program a chatbot*		
Assessment / Feedback Opportunities	***Formative Assessment*** Workbook activity Class Discussion Questioning pupils Verbal Feedback			***Summative assessment*** Unit Assessment Student Portfolio		

	Live Marking	
Key Vocabulary	Facial recognition, fingerprint recognition, language processing, neural network, self-driving cars, sensors, embedded, camera, push button, rules, decisions, training data, machine learning, structured data, email, spam, ethics, algorithms, utilitarianism, morals, bias, bits, binary, fuzzy logic, intelligence, IQ, Turing test, Captcha, chatbots, virtual assistants, sentiment analysis, weightings.	
Literacy/Reading opportunities	**Books** Hey AI, Let's Talk!: Foundations of Prompt Engineering for Teenagers AI for Smart Pre-Teens and Teens Ages 10-19: Using AI to Learn, Think and Create **Website for technology news** https://newsforkids.net/category/all_news/science/technology/ https://www.dogonews.com/category/technology	
Cross Curricular Themes	RE – Religion, life and Ethics English	
Personal Development (Including British Values, RSE, Citizenship)	Working Together Respectful of others	
Career Opportunities	AI Engineer, Machine Learning Engineer, Data Engineer, Natural Language Processing Engineer, Robotics Engineer, Deep Learning Engineer	