AI and Machine Learning

HALF TERM 2.1 Jan - Feb	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
TOPIC (S)	**What is AI**	**What is Machine Learning**	**What does the ethics of AI mean**	**How does image recognition work**	**What is the Turing tests**	**Can AI become bias**
Knowledge & Skills development	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	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	Understand what ethics is Understand how jobs can be affected by AI and automation Understand how bias can be introduced into AI algorithms and machine learning	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	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	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
Assessment / Feedback Opportunities	Classroom activity Class Discussion Questioning pupils Verbal Feedback Portfolio Assessment					
Cultural Capital	Using the internet safely Impacts of AI on our lives How systems can become bias					
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)	• Listening to others • Responding suitable in discussions • Taking part in group activates					
Reading opportunities	Instructional writing Key word identification					
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.					

Digital Literacy	Use of technology
	Digital research methods
	Use of range of software
Careers	Data scientist; Software engineer, Machine learning engineer, Data engineer, Software architect, Natural language processing, AI research