# Lessons 22 and 23 – Artificial Intelligence and Machine Learning

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| The Big Picture – Why Is This Relevant? | Learning Objectives |
| * How the work we have done on autonomous vehicles can be used in new systems that use Artificial Intelligence (AI) and Machine Learning (ML) | * Understand what artificial intelligence and machine learning are * Consider ways that AI and ML can be applied * Devise an algorithm for an AI healthcare robot |
| Engagement – How Can I Engage Learners? | Assessment for Learning |
| * Give the Learners free reign to come up with wacky and off the wall ideas. Don’t stifle their creativity * Make this practical based by including additional sensors will encourage Learners. * Be a willing guinea pig for their experiments! | **Expected Progress:**   * Learners consider different uses of AI, how these could work and the ethical dilemmas of using them   **Good Progress:**   * Learners design, develop and refine an algorithm a healthcare robot   **Exceptional Progress:**   * Learners have attempted a Stretch Task |
| Links to KS3 Programme of Study | |
| * understand a range of ways to use technology safely, respectfully, responsibly and securely * create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability | |
| Key Concepts | Key Words |
| * AI and ML | * Artificial intelligence * Machine learning * Robot * Natural language processing |
| Differentiation | Resources |
| Some Learners will have difficulty with moral and ethical choices group these discussions as mixed ability. | * Lesson 22-23 ppt * Lesson 22-23 Activity Sheet * PC * Access to <https://makecode.microbit.org> * micro:bit * Bit:Bot if required * Paper, Pens, Pencils * Internet for research * YouTube for videos * Pulse Sensor Module * BMP180 Pressure sensor |
| Lesson Flow | |
| * Introduce the Learning Objectives * Discuss AI and ML and what they refer to – try to get the Learners to identify where they see AI/ML systems in use. This might be as simple as the voice recognition system on their phone * Discuss current uses of AI – use examples eg cancer detection systems * Show Learners the examples videos or equivalent * Give out the worksheet and get Learners thinking about the design challenges * Start to discuss the ethical concerns of using robots in roles such as healthcare * Introduce the healthcare challenge * Get Learners to use the planning sheet. * If possible demonstrate the use of additional sensors * Give Learners the opportunity to create their healthcare embedded system * Give Learners and opportunity to test and compete practical activities * Encourage Learners to attempt the Stretch Tasks | |
| Making | |
| There are no making activities in these lessons. | |