IoT and Robotics National Curriculum Mapping

National Curriculum Programme of Study	Lesson(s) Covered
design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems	Bit:bot: Race Car and Track Design: Autonomous Systems: 13, 14, 20, 21, 24
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	Bit:bot: Race Car and Track Design: Autonomous Systems:
use 2 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	Bit:bot: 1, 3, 4, 6 Race Car and Track Design: 7 Autonomous Systems: 16
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]	Bit:bot: Race Car and Track Design: Autonomous Systems:
understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems	Bit:bot: 2, 3, 4 Race Car and Track Design: 7, 11 Autonomous 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	Bit:bot: 2, 5 Race Car and Track Design: 8 Autonomous Systems: 15
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	Bit:bot: Race Car and Track Design: 10 Autonomous Systems: 17, 18, 19, 21, 24
create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	Bit:bot: Race Car and Track Design: 9, 12 Autonomous Systems: 22, 23
understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns	Bit:bot: Race Car and Track Design: Autonomous Systems: 22, 23