UNIVERSITY OF CAMBRIDGE PRIMARY SCHOOL

Artificial Intelligence and Robotics

Year 6 | Summer 1

CURRICULUM SPOTLIGHT: COMPUTING | DESIGN AND TECHNOLOGY

ENQUIRY

How do I know you are not a robot?

OUTCOMES

- Lego SPIKE coding project and write up

VOCABULARY

Computing: adaptions, algorithm, application, artificial intelligence, autonomy, command, computational thinking, constraints, critical thinking, data, debugging, efficient, improve, input, loops, machine learning, motor sensor, network, output, process, prototypes, sequences, sequence, solution, variable.
D&T: Design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief, cam, snail cam, off-centre cam, peg cam, pear shaped cam, follower, axle, shaft, crank, handle, housing, framework, rotation, rotary motion, oscillating motion, reciprocating motion, mechanical system, input movement, process, output movement

KEY TEXTS

- How AI Will Completely Change the Way We Live in the Next 20 Years by Kai Fu Lee
- Mortal Engines by Philip Reeve

BACKGROUND KNOWLEDGE

- https://builtin.com/artificial-intelligence
- Chivers (2021) The Rationalist's Guide to the Galaxy: Superintelligent AI and the Geeks Who Are Trying to Save Humanity's Future
- Taulli (2019) Artificial Intelligence Basics: A Non-Technical Introduction
- Coded Bias documentary
- https://www.yout-ube.com/watch?v=s0dMTAQM4cw

RESOURCES

Lego SPIKE Coding and Google Teachable Machine

English	Mathematics	Physical Education	Design and Technology
Spelling: Revision ▪ Use the perfect form of verbs to mark relationships of time and cause	▪ Fractions, decimals and percentages ▪ Calculation review ▪ Algebra	Health and Fitness ▪ Static balance- stance ▪ Coordination- footwork ▪ Tennis ▪ Netball	**Design** ▪ Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups ▪ Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Make** ▪ Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ▪ Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities **Evaluate** ▪ Investigate and analyse a range of existing products ▪ Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ▪ Understand how key events and individuals in design and technology have helped shape the world

PSHCE	Spanish	Computing
▪ Managing Safety and Risk ▪ Personal responsibility for safety	▪ The Planets	Computing/ Coding ▪ Develop coding skills, organizing code into functions/ moving tabs/ labelling. ▪ Develop programs to include interactivity using text input. ▪ Follow flowcharts to create and debug code ▪ Generate visual effects and real life simulations.

PRE	Science
▪ Christianity – the Bible (navigating, understanding and evaluating)	Light Recognise that light appears to travel in straight lines. - Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. - Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes. - Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.