DRIVING QUESTION:

**COULD ROBOTS EVER HAVE THE SAME RIGHTS AS HUMANS?**

In this theme students will consider both philosophical ideas and mathematical principles. iRobot connects two very different learning strands. The core of the theme, as suggested by the Driving Question, considers the future of robots from a socio-political point of view. In order to answer the driving question, students will first consider what it means to be human. Students will explore abstract concepts such as the soul, human rights and, to a certain extent, freedom. Underpinning the more philosophical ideas is the study of concrete concepts relating to the mechanics of both robots and humans. Students will explore programming by first considering key mathematical principles and relating these to control. By the end of this theme students will have a greater sense of the driving forces behind human ingenuity as well as a respect for the principles that underpin what it means to be human.

In this theme I will learn…

* What robots are and some of their applications
* Why humans need and use robots and the impact of robots on our lives
* How robotics have changed our lives within a particular field
* How robots solve an everyday problem
* The basics of code and how coding works
* The language features of an explanation text
* What an algorithm is
* How an algorithm can be used to enable others to learn
* What human life processes are and how they compare with the functions of a robot
* What the characteristics of a prosthetic limb are
* How creative medical solutions can be found using robotics
* What the terms conductor and insulator mean
* What parallel circuits are
* The importance of electrical safety
* What the differences between humans and robots are
* The importance of human rights and what it means to have them
* Similarities and differences between a human and a robot
* What different religions believe about the soul
* What a Micro:bit is and the parts of a Micro:bit.
* How to participate in formal debates and structured discussions, summarising and/or building on what has been said

In this theme the skills I will develop will be…

* How to identify what robots are and some of their applications
* How to research and discuss how robotics have changed our lives within a particular field
* How to devise a new robot to solve an everyday problem
* How to produce basic code
* How to identify key elements of explanation writing
* How to use key language features of an explanation text
* How to devise an algorithm which will enable others to learn
* Explore life processes and make connections with the functions of a robot
* Develop research skills in order to record relevant information about the characteristics of a prosthetic limb
* How to develop creative solutions to medical problems using robotics
* How to understand what the terms conductor and insulator mean
* How to draw and understand series and parallel circuits
* How to understand the importance of electrical safety
* How to answer questions about a text using quotes to support
* How to summarise key ideas of a narrative
* How to use key ideas and vocabulary from a text in extended writing
* How to describe the differences between humans and robots
* How to identify and explain the unique qualities possessed by humans
* How to analyse whether robots should have the same rights as humans
* How to summarise what different religions believe about the soul
* How to program a Micro:bit to carry out a set of instructions
* How to participate in formal debates and structured discussions, summarising and/or building on what has been said