

Levels 7 & 8 Overview of units

** marks spotlighted unit for the school

	Unit 1	Unit 2	Unit 3	Unit 4
Title / theme	Mission to Mars **	The Band Wagon	Harry Potter	Assistive Devices
Summary / intention	Students consider applying for the Mars One Mission. As part of the application they must show that they have developed their skills in coding robotics to simulate what problems a Mars Rover would be used to solve.	Students work in groups to evaluate websites before designing and creating their own website for their 'band'. Students explore multiple ways of creating a website.	Students organise and present information as Harry Potter gets ready for school. From shopping lists to budgeting for potions, students are presented with a variety of scenarios to collect, manipulate & present data.	Students to decide on how a Sphero Robot could be used as an assistive device. Students then create a solution to the problem they have identified. Students have to create a user guide on how to use their solution.
Approximate number of hours	10	10	10	10
Assessment piece or pieces	Portfolio of Evidence of Missions Completed	Website for the band	Portfolio of Evidence plus practical and theory assessment.	Create a solution to a problem
Hardware and software tools used	Laptops EV3 Mindstorms Mindstorm for Education Software	Laptops Adobe Dreamweaver	Laptops Excel	Laptops Spheros

Curriculum Content Descriptions addressed:

DIGITAL SYSTEMS

VCDTDS035: Investigate how data is transmitted and secured in wired, wireless and mobile networks.

DATA AND INFORMATION

VCDTDI036: Investigate how digital systems represent text, image and sound data in binary.

VCDTDI037: Acquire data from a range of sources and evaluate their authenticity, accuracy and timeliness.

VCDTDI038: Analyse and visualise data using a range of software to create information, and use structured data to model objects or events.

VCDTDI039: Manage, create and communicate interactive ideas, information and projects collaboratively online, taking safety and social contexts into account.

CREATING DIGITAL SOLUTIONS

VCDTCD040: Define and decompose real-world problems taking into account functional requirements and sustainability (economic, environmental, social), technical and usability constraints.

VCDTCD041: Design the user experience of a digital system, generating, evaluating and communicating alternative designs.

VCDTCD042: Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors.

VCDTCD043: Develop and modify programs with user interfaces involving branching, iteration and functions using a general-purpose programming language.

VCDTCD044: Evaluate how well student-developed solutions and existing information systems meet needs, are innovative and take account of future risks and sustainability.

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	Unit 5	Unit 6	Unit 7	Unit 8
Title / theme	Game On - Scratch	Networking – Digital Systems	3D Design and Printing	Data and Information
Summary / intention	Students develop their computational thinking skills and design and create a game suitable for a defined purpose and audience.	Students investigate the components that make up a network. Students compare the network used at home to their own home network.	Students develop their design thinking skills to design and create 3D objects. Students spend time investigating 3D models that have already been designed and then begin to designing and printing their own key tab.	Students design and create a favicon for a website by encoding pixels in binary. Students begin to explore how digital images are encoded in binary. Students learn about pixels and then encode binary images using a widget.
Approximate number of hours	10	10	10	10
Assessment piece or pieces	Student's Game	Audio – description of school network	Key ring	Favicon
Hardware and software tools used	Laptops Scratch Online	Laptops	Tinker Cad Makers Empire MakerBot printer	Code.org widget

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