Levels 7 & 8 Overview of units

** marks spotlighted unit for the school

We note that some curriculum content descriptors are not addressed in this overview at the time of publishing. School snapshots for the case studies project are classified on a spectrum from "starting out" to "consolidating practices".

Digital Learning and Teaching Victoria

Digital Technologies case studies project

	Unit A	Unit B
Title / theme	VEX Robotics (Integrated Studies STEM stream)	B4 Computing (Integrated Studies STEM stream)
Summary / intention	Introduction to programming robots, both virtually and real, that contain a number of sensors.	Introduction to how the computers work, by breaking it down into small components. And creating and programming a small 4 bit computer.
Approximate number of hours	30hrs	30hrs
Assessment piece or pieces	Successful programming of robot to complete a range of tasks	Successful completion of small progressive tasks that build up to the complete system
Hardware and software tools used	VEX – virtual Free online coding program https://education.vex.com/stemlabs/cs and hands on VEX Robotics IQ Kit https://education.vex.com/stemlabs/iq	B4 Programming Kit: https://www.digital-technologies.institute/b4-learning-system Curric map (Aust Curric) Lesson plans
Curriculum Content Descriptions addressed:	DIGITAL SYSTEMS ☐ VCDTDS035 DATA AND INFORMATION ☐ VCDTDI036 ☐ VCDTDI037 ☐ VCDTDI038 ☐ VCDTDI039 CREATING DIGITAL SOLUTIONS ☒ VCDTCD040 ☐ VCDTCD041 ☒ VCDTCD042 ☒ VCDTCD043 ☐ VCDTCD044	DIGITAL SYSTEMS ☒ VCDTDS035 DATA AND INFORMATION ☒ VCDTDI036 ☐ VCDTDI037 ☐ VCDTDI038 ☐ VCDTDI039 CREATING DIGITAL SOLUTIONS ☒ VCDTCD040 ☐ VCDTCD041 ☒ VCDTCD042 ☐ VCDTCD043 ☐ VCDTCD044

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.