# Levels 9 & 10 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 | Unit C | Unit D |
|---|---|---|---|---|
| Title / theme | 9 Creating Digital Solutions | 9 & 10 Digital Systems | 10 Data & Information | 9&10 Creating Digital Solutions |
| Summary / intention | Game Design using simple drag and drop interface (Clickteam Fusion) to represent code & logic. Students to play each other's game for constructive feedback | Hardware/Software components in computer networks including LAN, WAN, DNS, DHCP, wireless encryptions, wireless protocols | Internet of Things (IoT) devices and impact of infrastructure development and social issues | Structured programming methodology using Microsoft Visual Basic.NET. Each student creates a simple (quiz) game based on their preferential theme. Analysis, Design, Develop and Evaluation stages are covered. |
| Approximate number of hours | 4 to learn | 2 and 2 | 3 | 30 |
| Assessment piece or pieces | 4 folios<br>1 project | Online test | 1 research assignment | 6 folios, 1 test, 1 project |
| Hardware and software tools used | Clickteam Fusion 2.5 free edition | PowerPoint | Publisher/PowerPoint/Word | Visual Basic.NET Community Ed |
| Curriculum Content Descriptions addressed: | DIGITAL SYSTEMS<br>☐ VCDTDS045 | DIGITAL SYSTEMS<br>☒ VCDTDS045 | DIGITAL SYSTEMS<br>☒ VCDTDS045 | DIGITAL SYSTEMS<br>☐ VCDTDS045 |
| | DATA AND INFORMATION<br>☐ VCDTDI046<br>☐ VCDTDI047<br>☐ VCDTDI048<br>☐ VCDTDI049 | DATA AND INFORMATION<br>☒ VCDTDI046<br>☐ VCDTDI047<br>☐ VCDTDI048<br>☐ VCDTDI049 | DATA AND INFORMATION<br>☐ VCDTDI046<br>☒ VCDTDI047<br>☐ VCDTDI048<br>☒ VCDTDI049 | DATA AND INFORMATION<br>☐ VCDTDI046<br>☐ VCDTDI047<br>☐ VCDTDI048<br>☐ VCDTDI049 |
| | CREATING DIGITAL SOLUTIONS<br>☒ VCDTCD050<br>☒ VCDTCD051<br>☐ VCDTCD052<br>☐ VCDTCD053<br>☐ VCDTCD054 | CREATING DIGITAL SOLUTIONS<br>☐ VCDTCD050<br>☐ VCDTCD051<br>☐ VCDTCD052<br>☐ VCDTCD053<br>☐ VCDTCD054 | CREATING DIGITAL SOLUTIONS<br>☒ VCDTCD050<br>☐ VCDTCD051<br>☐ VCDTCD052<br>☐ VCDTCD053<br>☐ VCDTCD054 | CREATING DIGITAL SOLUTIONS<br>☒ VCDTCD050<br>☒ VCDTCD051<br>☒ VCDTCD052<br>☒ VCDTCD053<br>☐ VCDTCD054 |

DIGITAL SYSTEMS

**VCDTDS045:** Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems.

DATA AND INFORMATION

**VCDTDI046**: Analyse simple compression of data and how content data are separated from presentation.

**VCDTDI047:** Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements.

**VCDTDI048:** Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data.

**VCDTDI049:** Manage and collaboratively create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities.

CREATING DIGITAL SOLUTIONS

**VCDTCD050:** Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs.

**VCDTCD051:** Design the user experience of a digital system, evaluating alternative designs against criteria including functionality, accessibility, usability and aesthetics.

**VCDTCD052:** Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases.

**VCDTCD053:** Develop modular programs, applying selected algorithms and data structures including using an object-oriented programming language.

**VCDTCD054:** Evaluate critically how well student-developed solutions and existing information systems and policies take account of future risks and sustainability and provide opportunities for innovation.