

# Australian Curriculum: Digital Technologies — Year 9

By the end of Year 10, students explain the control and management of networked digital systems and the security implications of the interaction between hardware, software and users. They explain simple data compression, and why content data are separated from presentation. Students plan and manage digital projects using an iterative approach. They define and decompose complex problems in terms of functional and non-functional requirements.

Students design and evaluate user experiences and algorithms. They design and implement modular programs, including an object-oriented program, using algorithms and data structures involving modular functions that reflect the relationships of real-world data and data entities. They take account of privacy and security requirements when selecting and validating data. Students test and predict results and implement digital solutions. They evaluate information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise. They share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects.

| CURRICULUM              | YEAR 9  |   |
|-------------------------|---|---|
|                         | SEMESTER 1  |   |
|                         | Unit 1  | Unit 2  |
| <b>Unit name</b>        | Python Coding and Application Development   | Web Application Project   |
| <b>Unit description</b> | Students learn how to manage a digital project using an iterative approach. They design, develop, implement and test algorithms using modular coding in Python. Students also learn about databases that are useful for applications, about the security implications of digital solutions, functional and non-functional requirements of projects. | Students learn how to manage a digital project using an iterative approach. They design, develop, implement and test algorithms using modular coding in Python integrating with HTML using Flask. Students also learn about databases that are useful for applications, about the security implications of digital solutions, functional and non-functional requirements of projects. |

| ASSESSMENT  | YEAR 9                      |  |   |
|---|-----------------------------|--|---|
|   | SEMESTER 1                  |  |   |
|   | Summative assessment task 1 | Summative assessment task 2  |   |
| <b>Range and balance of summative assessment conventions</b>  | <b>Technique</b>            | Project  | Project   |
|   | <b>Type of text</b>         | Interactive application Coding   | Interactive web application Coding  |
|   | <b>Mode</b>                 | Coding   | Coding  |
|   | <b>Conditions</b>           | <ul style="list-style-type: none"> <li>6 weeks alternating between learning and project development</li> <li>Multimodal responses non-presentation. Max: 20 pages</li> </ul> | <ul style="list-style-type: none"> <li>5 weeks</li> <li>Multimodal responses non-presentation. Max: 10 pages</li> </ul> |
| <b>Aspects of the achievement standard</b>  |                             |  |   |
| explain the control and management of networked digital systems and the security implications of the interaction between hardware, software and users   |                             |  |   |
| explain simple data compression, and why content data are separated from presentation   |                             |  |   |
| plan and manage digital projects using an iterative approach  |                             |  |   |
| define and decompose complex problems in terms of functional and non-functional requirements  |                             |  |   |
| design and evaluate user experiences and algorithms   |                             |  |   |
| design and implement modular programs, including an object-oriented program, using algorithms and data structures involving modular functions that reflect the relationships of real-world data and data entities |                             |  |   |
| take account of privacy and security requirements when selecting and validating data  |                             |  |   |
| test and predict results and implement digital solutions  |                             |  |   |
| evaluate information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise   |                             |  |   |
| share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects   |                             |  |   |

Shaded cells indicate opportunities that summative assessments provide for students to demonstrate evidence against all aspects of the achievement standard

