Digital Technologies Progression Points: Year 9 – v8.3

Independent Schools Queensland (ISQ) has developed Progression Points to support teachers in independent schools with implementation of version 8.3 of the Australian Curriculum.

A Word document version of the Progression Points is available so that teachers can rearrange the sequences of learning.

Personnel in independent schools are encouraged to consider how the Progression Points could be used to: -

* diagnose through formative assessment, the capabilities, strengths and weaknesses of individual students
* plan teaching programs to meet the needs of individuals and groups of students
* formally assess the progress of individuals and groups of students
* report to parents on the achievements of their children against the Australian Curriculum.

The “demonstrating” column accurately reflects the expectations of version 8.3 of the Australian Curriculum achievement standards.

ISQ welcomes any suggestions for improvement from teachers working very closely with the Progression Points.

**Digital Technologies Progression Points – Year 9**

| **Strands and content descriptions for teaching**  ***Modes*** | | **Emerging** | **Developing** | **Demonstrating** | **Advancing** | **Extending** |
| --- | --- | --- | --- | --- | --- | --- |
| Beginning to work towards the achievement standard | Working towards the achievement standard | Demonstrating the achievement standard | Working beyond the achievement standard | Extending with depth beyond the achievement standard |
| * *With explicit prompts (step-by-step oral scaffolding, reference to charts, word wall, etc)* * *In familiar contexts* * *Learning to follow procedures* | * *With prompts (oral or written questions, reference to charts, word walls, etc)* * *In familiar contexts* * *Attempts to explain* | * *Independent (with access to charts, word walls, etc.)* * *In familiar contexts* * *Explains basic understanding* | * *Independent (with access to charts, word walls, etc.)* * *Applying in familiar contexts* * *Explains with detail* | * *Independent (with access to charts, word walls, etc.)* * *Applying in new contexts* * *Explains with connections outside the teaching context* |
| **Achievement Standard**  By the end of Year 10, students [explain](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Explain) the control and management of networked digital systems and the security implications of the interaction between hardware, software and users. They [explain](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=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](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Design) and [evaluate](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Evaluate) user experiences and algorithms. They [design](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=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](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Predict) results and implement digital solutions. They [evaluate](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=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. | | | | | | |
|  | | Students [explain](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Explain) the control and management of networked digital systems and the security implications of the interaction between hardware, software and users. | | | | |
| **KNOWLEDGE AND UNDERSTANDING** | Digital Systems  Investigate the role of hardware and software in managing, controlling and securing the movement of and access to [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) in networked digital systems [(ACTDIK034)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIK034) | **With explicit prompts, students can:**   * **identify** some aspects of an operating system and the relationships between hardware, applications and system software. * **identify** some aspects of two common operating systems. * **identify** how changes to the configuration of an operating system change the operation of hardware and software components in a networked digital system. * **Identify** the role of hardware and software components in allowing people to interact with digital systems. | **With prompts, students can:**   * **define** what an operating system is and the relationship between hardware, applications and system software. * **state** the similarities and differences of two common operating systems. * **state** how changes to the configuration of an operating system change the operation of hardware and software components in a networked digital system. * **state** the role of hardware and software components in allowing people to interact with digital systems. | **Independently, students can:**   * **explain** how an operating system manages the relationship between hardware, applications and system software. * **explain** the similarities and differences of two common operating systems. * **explain** how changes to the configuration of an operating system change the operation of hardware and software components in a networked digital system. * **explain** the role of hardware and software components in allowing people to interact with digital systems. | **Independently, students can:**   * **discuss** how operating systems work and the relationships between hardware, applications and system software. * **discuss** the similarities and differences of two common operating systems. * **discuss** how one or more changes to the configuration of an operating system can change the operation of hardware and software components in a networked digital system. * **discuss** the role of hardware and software components in allowing people to interact with digital systems. | **Independently and consistently students can:**   * **compare** how operating systems work and the relationships between hardware, applications and system software. * **compare** the similarities and differences of two common operating systems * **compare** how the changes to the configuration of an operating system can change the operation of hardware and software components in a networked digital system. * **compare** the role of hardware and software components in allowing people to interact with digital systems. |
|  | | Students explain simple data compression, and why content data are separated from presentation. | | | | |
| **KNOWLEDGE AND UNDERSTANDING** | Analyse simple [compression](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=compression) of [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) and how content [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) are separated from presentation [(ACTDIK035)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIK035) | **With explicit prompts, students can:**   * **identify** some codecs for audio-visual compression.   *EG. Common codecs for video formats like zip files.*   * **identify** aspects of layout for reports in a database or **uses** existing templates for creation of webpages. | **With prompts, students can:**   * **identify** codecs for audio-visual compression.   *EG. Common codecs for video formats like zip files.*   * **explore** a layout or report in a database or **uses** existing templates for creation of webpages. | **Independently, students can:**   * **explain** codecs for audio-visual compression.   *EG. Common codecs for video formats like zip files.*   * **apply** a layout or report in a database or **apply** an external platform to create a webpage. | **Independently, students can:**   * **discuss** codecs for audio-visual compression.   *EG. Common codecs for video formats like zip files.*   * **generate** a layout or report in a database or **apply** styles in a webpage without the use of a style sheet. | **Independently and consistently, students can:**   * **compare** codecs for audio-visual compression.   *EG. Common codecs for video formats like zip files.*   * **create** a layout or report in a database or **applies** a style sheet to a webpage. |
|  | | Students take account of privacy and security requirements when selecting and validating data. | | | | |
| **PROCESSES AND PRODUCTION SKILLS** | Develop techniques for acquiring, storing and validating quantitative and qualitative [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) from a range of sources, considering privacy and security requirements [(ACTDIP036)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP036) | **With explicit prompts, students can:**   * **identify** and defines the difference between qualitative and quantitative data of different formats.   *EG. Using text entry for open-ended questions to acquire qualitative data.*   * **identify** some strengths and weaknesses of collecting data using different methods.   *EG. Online surveys, face-to-face interviews, phone interviews, observations.* | **With prompts, students can:**   * **identify** strategies and techniques for capturing accurate and usable qualitative and quantitative data of different formats.   *EG. Using text entry for open-ended questions to acquire qualitative data.*   * **identify** strengths and weaknesses of collecting data using different methods.   *EG. Online surveys, face-to-face interviews, phone interviews, observations.* | **Independently, students can:**   * **apply** strategies and techniques for capturing accurate and usable qualitative and quantitative data of different formats.   *EG. Using text entry for open-ended questions to acquire qualitative data.*   * **explain** strengths and weaknesses of collecting data using different methods.   *EG. Online surveys, face-to-face interviews, phone interviews, observation, blog entries in response to a posting, phone logs, browser history and online webcam systems.* | **Independently, students can:**   * **develop** strategies and techniques for capturing accurate and usable qualitative and quantitative data of different formats.   *EG. Using text entry for open-ended questions to acquire qualitative data.*   * **evaluate** the strengths and weaknesses of collecting data using different methods.   *EG. Online surveys, face-to-face interviews, phone interviews, observation, blog entries in response to a posting, phone logs, browser history and online webcam systems.* | **Independently and consistently students can:**   * **create** strategies and techniques for capturing accurate and usable qualitative and quantitative data of different formats.   *EG. Using text entry for open-ended questions to acquire qualitative data.*   * **evaluate** and **draw** **conclusions** about the collection of data using different methods.   *EG. Online surveys, face-to-face interviews, phone interviews, observation, blog entries in response to a posting, phone logs, browser history and online webcam systems.* |
| **PROCESSES AND PRODUCTION SKILLS** | Analyse and visualise [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) to create information and address complex problems, and [model](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=model) processes, entities and their relationships using structured [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) [(ACTDIP037)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP037) | **With explicit prompts, students can:**   * **use** visualisation software tools to i**dentify** some patterns and relationships between sets of data and information, and support abstract reasoning.   *EG. Representing data using histograms.*   * **create** a short summary of data using visual sorting techniques.   *EG. Pivot tables in spreadsheets and aggregation functions in databases.*   * **identify** some attributes of objects and processes using a data dictionary. | **With prompts, students can:**   * **use** visualisation software tools to i**dentify** patterns and relationships between sets of data and information, and support abstract reasoning.   *EG. Representing data using histograms.*   * **create** a summary of data using basic grouping techniques.   *EG. Pivot tables in spreadsheets and aggregation functions in databases.*   * **state** some attributes of complex objects and processes using a data dictionary. | **Independently, students can:**   * **use** visualisation software tools to **explain** patterns and relationships between sets of data and information, and support abstract reasoning.   *EG. Representing data using histograms, network diagrams and maps.*   * **create** summaries of data using some grouping techniques.   *EG. Pivot tables in spreadsheets and aggregation functions in databases.*   * **explain** the attributes of complex objects and processes using a data dictionary. | **Independently, students can:**   * **use** visualisation software tools to **discuss** patterns and relationships between sets of data and information and support abstract reasoning.   *EG. Representing data using histograms, network diagrams and maps.*   * **create** summaries of data using filtering and grouping techniques   *EG. Pivot tables in spreadsheets and aggregation functions in databases.*   * **explain** and **document** the attributes of complex objects and processes using a data dictionary. | **Independently and consistently students can:**   * **use** visualisation software tools to **compare** patterns and relationships between sets of data and information and support abstract reasoning.   *EG. Representing data using histograms, network diagrams and maps.*   * **create** summaries of data using advanced filtering and grouping techniques.   *EG. Pivot tables in spreadsheets and aggregation functions in databases.*   * **discuss** and **document** the attributes of complex objects and processes using a data dictionary. |
|  | | Students define and decompose complex problems in terms of functional and non-functional requirements. | | | | |
| **PROCESSES AND PRODUCTION SKILLS** | Define and [decompose](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=decompose) real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs [(ACTDIP038)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP038) | **With explicit prompts, students can:**   * **decompose and identify** a preliminary specification for an opportunity or a need that typically contains a problem statement, a set of solution needs expressed as functional and non-functional requirements, any assumptions or constraints to be considered and the scope or boundaries of the solution. * **identify**, with limited understanding some stakeholders who are associated with solutions but are not direct users **using** simple questioning techniques to clarify needs. * **identify** some software such as graphic organisers to determine a fundamental cause of a problem or to represent related elements of a problem that need to be jointly addressed in the digital solution. * **decompose and identify** some text and graphical user interface designs with clients who have different needs on the basis of time taken to complete the task and the number of errors made. | **With prompts, students can:**   * **decompose and explain** a preliminary specification for an opportunity or a need that typically contains a problem statement, a set of solution needs expressed as functional and non-functional requirements, any assumptions or constraints to be considered and the scope or boundaries of the solution. * **identify** some stakeholders who are associated with solutions but are not direct users and **using** techniques such as interviewing to clarify needs. * **identify** software such as graphic organisers to determine a fundamental cause of a problem or to represent related elements of a problem that need to be jointly addressed in the digital solution. * **decompose and identify** a range of text and graphical user interface designs with clients who have different needs on the basis of time taken to complete the task and the number of errors made. | **Independently, students can:**   * **decompose and develop** a preliminary specification for an opportunity or a need that typically contains a problem statement, a set of solution needs expressed as functional and non-functional requirements, any assumptions or constraints to be considered and the scope or boundaries of the solution. * i**dentify** a range of stakeholders who are associated with solutions but are not direct users and **use** techniques such as interviewing and reinterviewing to clarify needs. * **explore** software such as graphic organisers to determine a fundamental cause of a problem or to represent related elements of a problem that need to be jointly addressed in the digital solution. * **decompose and test** a range of text and graphical user interface designs with clients who have different needs on the basis of time taken to complete the task and the number of errors made. | **Independently, students can:**   * **decompose and develop** a preliminary specification for an opportunity or a need that typically contains a problem statement, a set of solution needs expressed as functional and non-functional requirements, any assumptions or constraints to be considered and the scope or boundaries of the solution. * **identify** the range of stakeholders who are associated with solutions but are not direct users and **using** techniques such as interviewing and reinterviewing to clarify needs. * **develop** software such as graphic organisers to determine a fundamental cause of a problem or to represent related elements of a problem that need to be jointly addressed in the digital solution * **decompose, test** and **evaluate** a range of text and graphical user interface designs with clients who have different needs on the basis of time taken to complete the task and the number of errors made. | **Independently and consistently students can:**   * **decompose and create** a preliminary specification for an opportunity or a need that typically contains a problem statement, a set of solution needs expressed as functional and non-functional requirements, any assumptions or constraints to be considered and the scope or boundaries of the solution. * **predict** and **identify** the range of stakeholders who are associated with solutions but are not direct users and using techniques such as interviewing and reinterviewing to clarify needs. * **create** software such as graphic organisers to determine a fundamental cause of a problem or to represent related elements of a problem that need to be jointly addressed in the digital solution. * **decompose, test** and **evaluate in detail** a range of text and graphical user interface designs with clients who have different needs on the basis of time taken to complete the task and the number of errors made. |
| **PROCESSES AND PRODUCTION SKILLS** | Design the user experience of a [digital system](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=digital+system) by [evaluating](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=evaluating) alternative designs against criteria including [functionality](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=functionality), [accessibility](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=accessibility), usability, and [aesthetics](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=aesthetics) [(ACTDIP039)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP039) | **With explicit prompts, students can:**   * **identify** some aspects of the user interface of a solution using story boards and mock-ups.   *EG. Mocking up the product design of an app for people with disability – low fidelity.*   * **identifies** some similar digital systems and existing user interfaces, assessing whether their elements can be reused. | **With prompts, students can:**   * **identify** the aspects of the user interface of a solution using story boards and mock-ups.   *EG. Mocking up the product design of an app for people with disability – low fidelity.*   * **identify** similar digital systems and existing user interfaces, assessing whether their elements can be reused. | **Independently, students can:**   * **develop** some aspects of the user interface of a solution using story boards and mock-ups.   *EG. Mocking up the product design of an app for people with disability – low fidelity.*   * **explain** similar digital systems and existing user interfaces, assessing whether their elements can be reused. | **Independently, students can:**   * **develop** aspects of the user interface of a solution using story boards and mock-ups.   *EG. Mocking up the product design of an app for people with disability – low fidelity.*   * **discuss** similar digital systems and existing user interfaces, assessing whether their elements can be reused. | **Independently and consistently students can:**   * **create** the user interface of a solution using story boards and mock-ups.   *EG. Mocking up the product design of an app for people with disability – low fidelity.*   * **compare** similar digital systems and existing user interfaces, assessing whether their elements can be reused. |
|  | | Students [design](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Design) and [evaluate](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Evaluate) user experiences and algorithms. Students test and [predict](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Predict) results and implement digital solutions. | | | | |
| **PROCESSES AND PRODUCTION SKILLS** | Design algorithms represented diagrammatically and in [structured English](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=structured+English) and validate algorithms and programs through tracing and test cases [(ACTDIP040)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP040) | **With explicit prompts, students can:**   * **explore** simple algorithms to solve problems and **state** simple algorithms using flow charts and structured English.   *EG. START, END, IF and UNTIL.*   * **recognise** that different algorithms can solve a problem with different trade-offs. * **recognise** that algorithms can be used to predict results.   *EG. Desk checking or using an interactive debugging tool.* | **With prompts, students can:**     * **explore** simple algorithms to solve real-world problems and **state** algorithms using flow charts and structured English.   *EG. START, END, IF and UNTIL.*   * **recognise** and **show** basic recognition that different algorithms can solve a problem with different trade-offs. * **identify** some algorithms to predict results and **apply** this to program state for a given input.   *EG. Desk checking or using an interactive debugging tool.* | **Independently, students can:**   * **design and evaluate** algorithms to solve real-world problems and **describes** algorithms using flow charts and structured English.   *EG. START, END, IF and UNTIL.*   * **recognise** that different algorithms can solve a problem with different trade-offs. * **identify** and **define** some algorithms to predict results and **apply** this to program state for a given input.   *EG. Desk checking or using an interactive debugging tool.* | **Independently, students can:**   * **design** **and evaluate** algorithms to solve real-world problems and **describes** algorithms using flow charts and structured English.   *EG. START, END, IF and UNTIL.*   * **recognise** and **apply** different algorithms to solve a problem with different trade-offs * **trace** some algorithms to predict results and can program state for a given input with some success.   *EG. Desk checking or using an interactive debugging tool.* | **Independently and consistently students can:**   * **design** and **evaluate** algorithms to solve real-world problems and **describe and predict** the outcomes ofalgorithms using flow charts and structured English.   *EG. START, END, IF and UNTIL.*   * **create** a variety of algorithms that can solve a problem with different trade-offs. * **trace** algorithms to predict results and can repeatedly program state for a given input with success.   *EG. Desk checking or using an interactive debugging tool.* |
|  | | Students [design](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=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. | | | | |
| **PROCESSES AND PRODUCTION SKILLS** | Implement modular programs, applying selected algorithms and [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) structures including using an object-oriented programming language [(ACTDIP041)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP041) | **With explicit prompts, students can:**   * **identify** that coding in separate modules can perform discrete functions but collectively meet the needs of the solution. * **identify** classes that represent the attributes and behaviour of objects in the real world or in a game. | **With prompts, students can:**     * **describe** coding in separate modules that perform discrete functions but collectively meet the needs of the solution. * **define** classes that represent the attributes and behaviour of objects in the real world or in a game. | **Independently, students can:**   * **design and implement** coding of separate modules that perform discrete functions but collectively meet the needs of the solution. * **explain** classes that represent the attributes and behaviour of objects in the real world or in a game. | **Independently, students can:**   * **create** coding for separate modules that perform discrete functions but collectively meet the needs of the solution. * **discuss** and **develop** classes that represent the attributes and behaviour of objects in the real world or in a game. | **Independently and consistently students can:**   * **create** coding for separate modules that perform discrete functions but collectively meet the needs of the solution. * **create** and **evaluate** classes that represent the attributes and behaviour of objects in the real world or in a game. |
|  | | They [evaluate](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Evaluate) information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise. | | | | |
| **PROCESSES AND PRODUCTION SKILLS** | Evaluate critically how student solutions and existing information systems and policies, take account of future risks and sustainability and provide opportunities for innovation and [enterprise](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=enterprise) [(ACTDIP042)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP042) | **With explicit prompts, students can:**   * **investigate** and **identify** actions, devices and events that are potential risks to information systems.   *EG. Losing portable storage devices containing important files, deliberately infecting systems through malware, and power surges.*   * **investigate** some techniques used by people and organisations to shape how information systems are used, including potential for innovation and enterprise.   *EG. Refusing to use innovations, using social media to advocate behaviours, purchasing devices, withdrawing previous processes that can now only be performed by an information system.*   * **identify** some impacts and opportunities created through the practice of planned obsolescence, with reference to sustainability.   EG. Discussing the benefits and risks to users, the creators and the environment of information systems having a defined life span, taking into account costs, research and resource extraction. | **With prompts, students can:**   * **investigate** and state actions, devices and events that are potential risks to information systems.   *EG. Losing portable storage devices containing important files, deliberately infecting systems through malware, and power surges*.   * **investigate** techniques used by people and organisations to shape how information systems are used, including potential for innovation and enterprise.   *EG. Refusing to use innovations, using social media to advocate behaviours, purchasing devices, withdrawing previous processes that can now only be performed by an information system.*   * **identify** the impact and opportunities created through the practice of planned obsolescence, with reference to sustainability.   EG. Discussing the benefits and risks to users, the creators and the environment of information systems having a defined life span, taking into account costs, research and resource extraction. | **Independently, students can:**   * **investigate** and **evaluate** actions, devices and events that are potential risks to information systems, including sustainability and potential for innovation and enterprise.   *EG. Losing portable storage devices containing important files, deliberately infecting systems through malware, and power surges.*   * **investigate** and **evaluate** techniques used by people and organisations to shape how information systems are used, including potential for innovation and enterprise.   *EG. Refusing to use innovations, using social media to advocate behaviours, purchasing devices, withdrawing previous processes that can now only be performed by an information system.*   * **investigate** the impact and opportunities created through the practice of planned obsolescence, with reference to sustainability.   EG. Discussing the benefits and risks to users, the creators and the environment of information systems having a defined life span, taking into account costs, research and resource extraction. | **Independently, students can:**   * **investigate** and **critically** **evaluate** actions, devices and events that are potential risks to information systems, including sustainability and potential for innovation and enterprise.   *EG. Losing portable storage devices containing important files, deliberately infecting systems through malware, and power surges.*   * **investigate** and **critically** **evaluate** techniques used by people and organisations to shape how information systems are used, including potential for innovation and enterprise.   *EG. Refusing to use innovations, using social media to advocate behaviours, purchasing devices, withdrawing previous processes that can now only be performed by an information system.*  *Facebook refusal:*   * **investigate** and **evaluate** the impact and opportunities created through the practice of planned obsolescence, with reference to sustainability.   EG. Discussing the benefits and risks to users, the creators and the environment of information systems having a defined life span, taking into account costs, research and resource extraction*.* | **Independently and consistently students can:**   * **investigate**, **critically** **evaluate** and **predict** actions, devices and events that are potential risks to information systems, including sustainability and potential for innovation and enterprise.   *EG. Losing portable storage devices containing important files, deliberately infecting systems through malware, and power surges.*   * **investigate**, **critically** **evaluate** and **predict** techniques used by people and organisations to shape how information systems are used, including potential for innovation and enterprise.   *EG. Refusing to use innovations, using social media to advocate behaviours, purchasing devices, withdrawing previous processes that can now only be performed by an information system.*   * **investigate** and **critically** **evaluate** the impact and opportunities created through the practice of planned obsolescence, with reference to sustainability.   EG. Discussing the benefits and risks to users, the creators and the environment of information systems having a defined life span, taking into account costs, research and resource extraction. |
|  | | They share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects. | | | | |
| **PROCESSES AND PRODUCTION SKILLS** | Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and legal responsibilities [(ACTDIP043)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP043) | **With explicit prompts, whilst sharing and collaborating online, students can:**   * **investigate** and **recognise** in basic terms the legal responsibilities of organisations regarding the storage, communication and disposal of personal and organisational data.   *EG. The Australian Privacy Principles as they apply to intellectual property.*   * **identify** evidence to make ethical decisions when faced with dilemmas about security and ownership of data.   *EG. Selecting an action that results in the greatest benefit for the most number of people; avoiding the use of photos of deceased persons from Aboriginal and Torres Strait Islander communities*. | **With prompts, whilst sharing and collaborating online, students can:**   * **investigate** and **recognise** the legal responsibilities of organisations regarding the storage, communication and disposal of personal and organisational data.   *EG. The Australian Privacy Principles as they apply to intellectual property.*   * **state** evidence to make ethical decisions when faced with dilemmas about security and ownership of data.   *EG. Selecting an action that results in the greatest benefit for the most number of people; avoiding the use of photos of deceased persons from Aboriginal and Torres Strait Islander communities.* | **Independently, whilst sharing and collaborating online, students can:**   * **investigate** and **draws basic conclusions** about the legal responsibilities of organisations regarding the storage, communication and disposal of personal and organisational data.   *EG. The Australian Privacy Principles as they apply to intellectual property.*   * **explain** evidence tomake ethical decisions when faced with dilemmas about security and ownership of data.   *EG. Selecting an action that results in the greatest benefit for the most number of people; avoiding the use of photos of deceased persons from Aboriginal and Torres Strait Islander communities.* | **Independently, whilst sharing and collaborating online, students can:**   * **Investigate** and **draws** **detailed conclusions** about the legal responsibilities of organisations regarding the storage, communication and disposal of personal and organisational data.   *EG. The Australian Privacy Principles as they apply to intellectual property.*   * **develops** techniques based on evidence to make ethical decisions when faced with dilemmas about security and ownership of data.   *EG. Selecting an action that results in the greatest benefit for the most number of people; avoiding the use of photos of deceased persons from Aboriginal and Torres Strait Islander communities.* | **Independently and consistently, whilst sharing and collaborating online, students can:**   * **investigate** and **draw** **justifiable conclusions** about the legal responsibilities of organisations regarding the storage, communication and disposal of personal and organisational data.   *EG. The Australian Privacy Principles as they apply to intellectual property.*   * **create** techniques based on evidence to make ethical decisions when faced with dilemmas about security and ownership of data.   *EG. Selecting an action that results in the greatest benefit for the most number of people; avoiding the use of photos of deceased persons from Aboriginal and Torres Strait Islander communities*. |
|  | | Students plan and manage digital projects using an iterative approach. | | | | |
| **PROCESSES AND PRODUCTION SKILLS** | Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability [(ACTDIP044)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP044) | **With explicit prompts, students can:**   * **identify** aspects of the development of solutions.   *EG. Using software to record and monitor project tasks, responsibilities and timeframes and to organise continuous opportunities to review progress with collaborative partners and to conduct regular unit testing.*   * **state** in simple terms, aspects of how a prototype evolves iteratively and incrementally.   *EG. Regularly revising features of an application in response to user feedback and development decisions.* | **With prompts, students can:**   * **describe** the development of solutions.   *EG. Using software to record and monitor project tasks, responsibilities and timeframes and to organise continuous opportunities to review progress with collaborative partners and to conduct regular unit testing.*   * **describe** the process of how a prototype evolves iteratively and incrementally.   *EG. Regularly revising features of an application in response to user feedback and development decisions.* | **Independently, students can:**   * **plan and manage** the development of solutions.   *EG. Using software to record and monitor project tasks, responsibilities and timeframes and to organise continuous opportunities to review progress with collaborative partners and to conduct regular unit testing.*   * **plan, develop and manage** an evolutionary prototype iteratively and incrementally.   *EG. Regularly revising features of an application in response to user feedback and development decisions.* | **Independently, students can:**   * **plan, manage** and **modify** the development of solutions.   *EG. Using software to record and monitor project tasks, responsibilities and timeframes and to organise continuous opportunities to review progress with collaborative partners and to conduct regular unit testing.*   * **plan, develop, manage** and **create** an evolutionary prototype iteratively and incrementally.   *EG. Regularly revising features of an application in response to user feedback and development decisions.* | **Independently and consistently students can:**   * **plan, manage**, **modify** and **evaluate** the development of solutions.   *EG. Using software to record and monitor project tasks, responsibilities and timeframes and to organise continuous opportunities to review progress with collaborative partners and to conduct regular unit testing.*   * **plan, develop, manage, create** and **evaluate** an evolutionary prototype iteratively and incrementally.   *EG. Regularly revising features of an application in response to user feedback and development decisions.* |