Digital Technologies Progression Points: Year 7 – 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 Technology Progression Points – Year 7**

| **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 8, students [distinguish](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Distinguish) between different types of networks and defined purposes. They [explain](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Explain) how text, image and audio data can be represented, secured and presented in digital systems. Students plan and manage digital projects to create interactive information. They define and decompose problems in terms of functional requirements and constraints. Students [design](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Design) user experiences and algorithms incorporating branching and iterations, and test, modify 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 meeting needs, innovation and sustainability. They [analyse](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Analyse) and [evaluate](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Evaluate) data from a range of sources to model and create solutions. They use appropriate protocols when communicating and collaborating online. |
| Content Descriptions | By the end of Year 8, students [distinguish](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Distinguish) between different types of networks and defined purposes |
| **KNOWLEDGE AND UNDERSTANDING** | Investigate how [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) is transmitted and secured in wired, wireless and mobile networks, and how the specifications affect performance [(ACTDIK023)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIK023) | **With explicit prompts, students can:*** **state** how a mobile network functions

*EG. name and the elements of a mobile network. Cellular radio towers (transceivers) and mobile phones.** **explore** the reliability and speed of transmitting data through wireless, wired and mobile networks

*EG. demonstrate an ability to upload and download via wi-fi and via Ethernet, band width usage.* | **With prompts, students can:*** **describe** how a mobile network functions

*EG. describe the elements of a mobile network. Cellular radio towers (transceivers) and mobile phones.** **identify and explore** the reliability and speed of transmitting data through wireless, wired and mobile networks

*EG. Switch between wi-fi and wired. Identify where downloads are stored on a device.* | **Independently, students can:*** **explain** **in basic terms** how a mobile network functions

*EG. explain the elements of a mobile network. Cellular radio towers (transceivers) and mobile phones.** **compare** the reliability and speed of transmitting data through wireless, wired and mobile networks

*EG. Discuss and compare upload and download rate on wi-fi and via Ethernet, band width usage.* | **Independently, students can:*** **explain in detail** how a mobile network functions

*EG. explain in detail the elements of a mobile network. Cellular radio towers (transceivers) and mobile phones*.* **compare and analyse** the reliability and speed of transmitting data through wireless, wired and mobile networks

*EG. Demonstrate an understanding of the reliability of data transmission. Upload and download rate on wi-fi and via Ethernet, band width usage.* | **Independently and consistently, students can:*** **explain in detail** how a mobile network functions **using specific terminology**

*EG. explain in detail with correct terminology the elements of a mobile network. Cellular radio towers (transceivers) and mobile phones.** **compare, analyse and justify** the reliability and speed of transmitting data through wireless, wired and mobile networks

*EG. Demonstrate an understanding of the reliability of data transmission, be able to identify and discuss how uploading and downloading simultaneous can affect transfer rate. Upload and download rate on wi-fi and via Ethernet, band width usage.* |
|  | They [explain](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Explain) how text, image and audio data can be represented, secured and presented in digital systems. |
| **KNOWLEDGE AND UNDERSTANDING** | Investigate how digital systems represent text, image and audio [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) in [binary](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=binary) [(ACTDIK024)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIK024) | **With explicit prompts, students can:** * **State** the differences between bitmap and vector graphics and the consequences of using either in different scenarios

*EG. Bitmap pixelation compared to resizing vector clip art graphics.** **List** the different colour modes are used for web, print and video

*EG. RGB, CMYK, Grayscale modes in Adobe Photoshop.** **List** ways to **connect** media elements

*EG. Hyperlinking to a YouTube video from a PowerPoint.* | **With prompts, students can:*** **Describe** the differences between bitmap and vector graphics and the consequences of using either in different scenarios

*EG. Bitmap pixelation compared to resizing vector clip art graphics.** **Describe** how colours modes are used for web, print and video

*EG. RGB, CMYK, Grayscale modes in Adobe Photoshop.** **Describe** how to connect media elements

*EG. Hyperlinking to a YouTube video from a PowerPoint*. | **Independently, students can:*** **Explains in basic terms** the differences between bitmap and vector graphics and the consequences of using either in different scenarios

*EG. Bitmap pixelation compared to resizing vector clip art graphics.** **Describe correctly** how colours modes are used for web, print and video

*EG. RGB, CMYK, Grayscale modes in Adobe Photoshop.** **Identify and describe correctly** how to connect media elements **and illustrate the impact these will have on the function**

*EG. Hyperlinking to a YouTube video from a PowerPoint.* | **Independently students can:*** **Explains in detail** the differences between bitmap and vector graphics and the consequences of using either in different scenarios

*EG. Bitmap pixelation compared to resizing vector clip art graphics*.* **Investigate and analyse** how colours modes are used for web, print and video

*EG. RGB, CMYK, Grayscale modes in Adobe Photoshop.** **Identify and compare** a range of different methods for connecting media elements **and discuss the impact these will have on the function**

*EG. Hyperlinking to a YouTube video from a PowerPoint.* | **Independently and consistently, students can:*** **Explains and analyses in detail** the differences between bitmap and vector graphics and the consequences of using either in different scenarios

*EG. Bitmap pixelation compared to resizing vector clip art graphics.** **Investigate and modify** how colours modes are used for web, print and video

*EG. RGB, CMYK, Grayscale modes in Adobe Photoshop.** **Identify, compare and evaluate** different methods for connecting media elements **and analyse the impact these will have on the function**

*EG. Hyperlinking to a YouTube video from a PowerPoint.* |
|  | They [analyse](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Analyse) and [evaluate](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Evaluate) data from a range of sources to model and create solutions. |
| **PROCESSES AND PRODUCTION SKILLS** | Acquire [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) from a range of sources and evaluate authenticity, accuracy and timeliness [(ACTDIP025)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP025) | **With explicit prompts, a student can:*** **Identify** data from sources and compile data into a digital format

*EG. People, websites, books, mobile phones.* * **List** different sources of data and **explore** its authenticity

*EG. Ensuring the source of a quote is reliable when researching online. ‘.org’ v an unverified wiki or blog*  | **With prompts, a student can:*** **Collect and identify** data from sources and compile data into a digital format

*EG. People, websites, books, mobile phones.** **Describe** the authenticity of data

*EG. Ensuring the source of a quote is reliable when researching online. ‘.org’ v an unverified wiki or blog*  | **A student can independently:*** **Collect and sort** data from a range of sources and compile these data into a digital format

*EG. People, websites, books, mobile phones, radiofrequency identification (RFID) and data repositories such as the Australian Bureau of Statistics datasets.* * **Describe correctly** the authenticity of data

*EG. Ensuring the source of a quote is reliable when researching online. ‘.org’ v an unverified wiki or blog*  | **A student can independently:*** **Discuss and organise** data from a range of sources and compile the data into a digital format

*EG. People, websites, books, mobile phones, radiofrequency identification (RFID) and data repositories such as the Australian Bureau of Statistics datasets.* * **Analyse** the authenticity of data

*EG. Ensuring the source of a quote is reliable when researching online. ‘.org’ v an unverified wiki or blog*  | **A student can independently and consistently:** * **Organise and justify** data from a range of sources and compile the data into a digital format

*EG. People, websites, books, mobile phones, radiofrequency identification (RFID) and data repositories such as the Australian Bureau of Statistics datasets.* * **Analyse** the authenticityof data from **a range of sources**

*EG. Ensuring the source of a quote is reliable when researching online. ‘.org’ v an unverified wiki or blog*  |
| **PROCESSES AND PRODUCTION SKILLS** | Analyse and visualise [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) using a range of software to create information, and use structured [data](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=data) to [model](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=model) objects or events [(ACTDIP026)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP026) | **With explicit prompts, a student can:*** **Explore** data summaries and **list basic** features and functions of software

*EG. Exploring an existing simple excel spreadsheet.** **Identify** a visual representation of data to create information

*EG. Using a specific graphs or chart in excel and manipulating the legends and axes.** **Explore** a model of real-world objects for a computer game and **list** its features

*EG. Minecraft.* | **With prompts, a student can:*** **Identify** basic data summaries and **list** features and functions of software

*EG. Calculating a simple excel spreadsheet.** **Identify** visual representations of data to create information

*EG. Using a variety of graphs, chart in excel and manipulating the legends and axes*.* **Identify and explore** a model of real-world objects for a computer game and **define** its features

*EG. Minecraft*. | **A student can independently:*** **Create** informative data summaries **and explore** features and functions of software

*EG. Calculating a simple excel spreadsheet and exploring functions and formulas.** **Create** visual representations of data to create information

*EG. Editing graphs, charts in excel and manipulating the legends and axes.** **Create** a model of real-world objects for a computer game

*EG. Minecraft*. | **A student can independently:*** **Create** informative data summaries **and justify** features and functions of software

*EG. Calculating a simple excel spreadsheet and selecting correct filters, functions and formulas.** **Create a range** of visual representations **of** data to create information

*EG. Using graphs, chart in excel and manipulating the legends and axes, displaying geocoded data on a map.** **create and justify** a model of real-world objects for a computer game

*EG. Minecraft.* | **A student can independently and consistently:*** **Create** informative data summaries and **modify** features and functions of software

*EG. Calculating a simple excel spreadsheet and selecting correct filters, functions and formulas*.* **Create a range of advanced** visual representations **of** data to create information

*EG. Using graphs, chart in excel and manipulating the legends and axe, displaying geocoded data on a map.** **Create, justify and modify** a model of real-world objects for a computer game

*EG. Minecraft.* |
|  | They define and decompose problems in terms of functional requirements and constraints.  |
| Define and [decompose](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=decompose) real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints [(ACTDIP027)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP027) | **With explicit prompts, a student can:*** **Decompose and list the sub elements in a given problem**

*EG. Creating a decision tree or a flow diagram to identifying the elements of game design such as characters, movements, collisions and scoring.** **List** types of environmental constraints of solutions

*EG. Reducing energy consumption and recycling to reduce landfill.*  | **With prompts, a student can:*** **Decompose and describe** how a given problem can be decomposed into sub elements

*EG. Creating a decision tree or a flow diagram to identifying the elements of game design such as characters, movements, collisions and scoring.** **Define** types of environmental

*EG. Reducing energy consumption and recycling to reduce landfill.* | **A student can independently:*** **Decompose and describe correctly** how problems can be decomposed into sub elements

*EG. Creating a decision tree or a flow diagram to identifying the elements of game design such as characters, movements, collisions and scoring.** **Compare** types of environmental constraints of solutions

*EG. Reducing energy consumption and recycling to reduce landfill.* | **A student can independently:*** **Decompose and analyse** how problems can be decomposed into sub elements

*EG. Creating a decision tree or a flow diagram to identifying the elements of game design such as characters, movements, collisions and scoring.** **Investigate and compare** types of environmental constraints of solutions

*EG. Reducing energy consumption and recycling to reduce landfill.* | **A student can independently and consistently:*** **Decompose, analyse and modify** how problems can be decomposed into sub elements

*EG. Creating a decision tree or a flow diagram to identifying the elements of game design such as characters, movements, collisions and scoring.** **Investigate, compare and explain** types of environmental constraints of solutions

*EG. Reducing energy consumption and recycling to reduce landfill.*  |
|  | Students [design](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Design) user experiences and algorithms incorporating branching and iterations, and test, modify and implement digital solutions. |
| **PROCESSES AND PRODUCTION SKILLS** | Design the user experience of a [digital system](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=digital+system), generating, [evaluating](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=evaluating) and communicating alternative designs [(ACTDIP028)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP028) | **With explicit prompts, a student can:*** **State** the basic features that make an effective game

*EG. Storyline, goal, reward, gameplay and environment.* * **Explore** similar digital systems and their user interfaces, assessing whether user interface elements can be re-used
* **Identify** how there canbealternative designs to a solution for a problem

 *EG. presenting alternative design mock-ups to the class.* | **With prompts, a student can:*** **Identify and design** features that make an effective game

*EG. Storyline, goal, reward, gameplay and environment.* * **Identify and explore** similar digital systems and their user interfaces, assessing whether user interface elements can be re-used
* **Describe** how there can be alternative designs to a solution for a problem

*EG. presenting alternative design mock-ups to the class.* | **A student can independently:*** **Design and create** features that make an effective game

*EG. Storyline, goal, reward, gameplay and environment.* * **Investigate** similar digital systems and their user interfaces, assessing whether user interface elements can be re-used
* **Describe and compare** alternative designs to a solution for a problem

*EG. presenting alternative design mock-ups to the class.* | **A student can independently:*** **Design, create and justify** features that make an effective game

*EG. Storyline, goal, reward, gameplay and environment.*  * **Investigate and analyse** similar digital systems and their user interfaces, assessing whether user interface elements can be re-used
* **Describe correctly and analyse** alternative designs to a solution for a problem

*EG. presenting alternative design mock-ups to the class.* | **A student can independently and consistently:*** **Modify the designed features** that make an effective game

*EG. Storyline, goal, reward, gameplay and environment.* * **Investigate and analyse** similar digital systems and their user interfaces, assessing whether user interface elements can be re-used **or modified**
* **Describe correctly and justify** alternative designs to a solution for a problem **and suggest modifications**

*EG. presenting alternative design mock-ups to the class.* |
| **PROCESSES AND PRODUCTION SKILLS** | Design algorithms represented diagrammatically and in English, and trace algorithms to predict [output](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=output) for a given [input](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=input) and to identify errors [(ACTDIP029)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP029) | **With explicit prompts, a student can:*** **Explore** diagrams to describe key decisions

*EG. Creating flowcharts using digital systems to describe a set of computational instructions.* | **With prompts, a student can:*** **Identify and explore** diagrams to describe key decisions

*EG. Creating flowcharts using digital systems to describe a set of computational instructions.* | **A student can independently:*** **Develop** diagrams to describe key decisions

*EG. Creating flowcharts using digital systems to describe a set of computational instructions.* | **A student can independently:*** **Develop and test** diagrams to describe key decisions

*EG. Creating flowcharts using digital systems to describe a set of computational instructions.* | **A student can independently and consistently:*** **Develop, test and modify** diagrams to describe key decisions

*EG. Creating flowcharts using digital systems to describe a set of computational instructions.* |
|  | Students plan and manage digital projects to create interactive information |
| **PROCESSES AND PRODUCTION SKILLS** | Implement and modify programs with user interfaces involving [branching](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=branching), [iteration](http://www.australiancurriculum.edu.au/glossary/popup?a=T&t=iteration) and functions in a general-purpose programming language [(ACTDIP030)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP030) | **With explicit prompts, a student can:*** **Produce** a **basic** digital game that manipulates models of real-world objects

*EG. Scratch and Tynker.*  | **With prompts, a student can:*** **Produce** a **basic** digital game that manipulates models of real-world objects

*EG. Scratch and Tynker.* | **A student can independently:*** **Produce and develop** a digital game that manipulates models of real-world objects

*EG. Scratch and Tynker.*  | **A student can independently:*** **Develop, and test** a digital game that manipulates models of real-world objects

*EG. Scratch and Tynker.* | **A student can independently and consistently:*** **Develop, test and modify** a sophisticated digital game that manipulates models of real-world objects

*EG. Scratch and Tynker.*  |
|  | They [evaluate](http://www.australiancurriculum.edu.au/glossary/popup?a=F10AS&t=Evaluate) information systems and their solutions in terms of meeting needs, innovation and sustainability. They use appropriate protocols when communicating and collaborating online. |
| **PROCESSES AND PRODUCTION SKILLS** | Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability [(ACTDIP031)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP031) | **With explicit prompts, a student can:*** **Identify** the quality of a student solution based on specific criteria

*EG. An initial specification criteria such as meeting an economic need or contributing to social sustainability.** **List** the features of touch input, keyboard or mouse input and **explore** how thesecontribute to their success in meeting a wide range of needs

*EG. Mimicking a common movement such as expanding or contracting a hand to change the size of an object on screen, suits users with a range of dexterity.** **List** the effects of e-waste on societies and environments

*EG. The impacts of toxic chemicals when hardware is disposed.* | **With prompts, a student can:*** **Identify and describe** the quality of a student solution based on specific criteria

*EG. An initial specification criteria such as meeting an economic need or contributing to social sustainability.** **Identify and describe** which features of touch input rather than keyboard or mouse input contribute to their success in meeting a wide range of needs

*EG. Mimicking a common movement such as expanding or contracting a hand to change the size of an object on screen, suits users with a range of dexterity.** **Describe** the effects of e-waste on societies and environments

*EG. The impacts of toxic chemicals when hardware is disposed.* | **A student can independently:*** **Identify** and draw basic conclusions pertaining tothe quality of a student solution based on specific criteria

*EG. An initial specification criteria such as meeting an economic need or contributing to social sustainability.** **Identify and describe** correctly which features of touch input rather than keyboard or mouse input contribute to their success in meeting a wide range of needs

*EG. Mimicking a common movement such as expanding or contracting a hand to change the size of an object on screen, suits users with a range of dexterity.** **Describe** correctly and make basic conclusions aboutthe effects of e-waste on societies and environments

*EG. The impacts of toxic chemicals when hardware is disposed*. | **A student can independently:*** **Analyse** and draw detailed conclusions pertainingthe quality of a student solution based on specific criteria

*EG. An initial specification criteria such as meeting an economic need or contributing to social sustainability*.* **Analyse** **and evaluate** whichfeatures of touch input rather than keyboard or mouse input contribute to their success in meeting a wide range of needs

*EG. Mimicking a common movement such as expanding or contracting a hand to change the size of an object on screen, suits users with a range of dexterity.** **Investigate** and draw detailed conclusions about the effects of e-waste on societies and environments

*EG. The impacts of toxic chemicals when hardware is disposed*. | **A student can independently and consistently:*** **Analyse** and draw justifiable conclusions pertaining tothe quality of a student solution based on specific criteria

*EG. An initial specification criteria such as meeting an economic need or contributing to social sustainability.** **Analyse, test and evaluate** which features of touch input rather than keyboard or mouse input contribute to their success in meeting a wide range of need

*EG. Mimicking a common movement such as expanding or contracting a hand to change the size of an object on screen, suits users with a range of dexterity.** **Investigate** and draw justifiable conclusions aboutthe effects of e-waste on societies and environments

*EG. The impacts of toxic chemicals when hardware is disposed.* |
| **PROCESSES AND PRODUCTION SKILLS** | Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account [(ACTDIP032)](http://www.australiancurriculum.edu.au/curriculum/contentdescription/ACTDIP032) | **With explicit prompts, a student can:*** **State** a set of ‘rules’ about acceptable and unacceptable behaviour when collaborating online

*EG. Using mobile phones for learning and accessing social media websites at school.** **Identify** the location of predeterminedfiles and instructions in readiness for implementation of a solution

*EG. Applying a file naming convention and logical folder structure to the files for a website.* | **With prompts, a student can:*** **Describe** a set of ‘rules’ about acceptable and unacceptable behaviour when collaborating online

*EG. Using mobile phones for learning and accessing social media websites at school*.* **Identify** and **collect** files and instructions in readiness for implementation of a solution

*EG. Applying a file naming convention and logical folder structure to the files for a website.* | **A student can independently:*** **Explain** a set of ‘rules’ and policies about acceptable and unacceptable behaviour when collaborating online

*EG. Using mobile phones for learning and accessing social media websites at school.** **Collect and manage** files and instructions in readiness for implementation of a solution

*EG. Applying a file naming convention and logical folder structure to the files for a website.* | **A student can independently:*** **Explain in detail** a set of ‘rules’ about acceptable and unacceptable behaviour when collaborating online

*EG. Using mobile phones for learning and accessing social media websites at school.** **Plan and manage** files and instructions in readiness for implementation of a solution

*EG. Applying a file naming convention and logical folder structure to the files for a website.* | **A student can independently and consistently:*** **Explain and justify** a set of ‘rules’ about acceptable and unacceptable behaviour when collaborating online

*EG. Using mobile phones for learning and accessing social media websites at school.** **Plan, organise and justify** the location of files and instructions in readiness for implementation of a solution

*EG. Applying a file naming convention and logical folder structure to the files for a website.* |