NCEA Digital Technologies Remote Learning and Assessment

Subject matrices are a guide to assessment where remote teaching, learning and assessment have to take place due to a significant event leading to closure of schools over an extended period of time. For example, lockdown, natural disaster, etc.

General Guidance

Students will need access to a computer and appropriate software. Students may also need access to an internet connection.

If students have an internet connection, there are a number of options for collaborative working available to them. They may be able to use video conferencing, the facilities of a cloud-based platform, or a learning management system.

Care must be taken when students are interacting online to ensure their safety.

There may be issues around access and equity for some students, which you will need to consider in your programme planning.

Supporting Evidence

Evidence can be gathered in a number of ways. In many cases the evidence will be apparent in the outcome that the student has created. This may be supplemented with succinct notes, for example to provide supporting evidence of where and why choices have been made.

Short videos and screencasts can also provide suitable evidence. Again, succinct notes may provide supporting evidence of student thinking.

Students should be encouraged to keep written evidence short and to the point.

Digital Technologies Matrix

COLOUR KEY: A colour-coding system to categorise standards according to the advice in this document.

Green:	These standards are suitable for remote teaching, learning and assessment.
Blue:	Teachers can facilitate assessment against these standards by remote learning with guidance (refer to General Guidance above).
Orange:	These standards are suitable for remote teaching and learning provided the candidate has access to appropriate equipment and/or technology. They are not suitable for remote assessment in their current delivery method and/or requirements. Guidance will be provided at the time as required.
Red:	These standards require a collaborative process or interaction with others, and are not suitable for remote teaching, learning and assessment.

Level 1	Level 2	Level 3
AS 92004 1.1	**AS 91890** 2.1	**AS 91900** 3.1
Internal (5 credits)	Internal (6 credits)	Internal (6 credits)
Create a computer program	**Conduct an inquiry to propose a digital technologies outcome**	**Conduct a critical inquiry to propose a digital technologies outcome**
Where students have access to the appropriate software to code the program, this is suitable for remote learning and assessment.	Ideal for distance learning and assessment using digital platforms or file-sharing. The evidence can be presented using any mode that clearly communicates the student's understanding.	Ideal for distance learning and assessment using digital platforms or file-sharing. The evidence can be presented using any mode that clearly communicates the student's understanding.
The Subject Learning Outcomes, standard, Unpacking, Conditions of Assessment, and Internal Assessment Activities give guidance on the requirements of the standard.	For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work.	For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work.
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Level 1	Level 2	Level 3
AS 92005 1.2	**AS 91891** 2.2	**AS 919101** 3.2
Internal (5 credits)	Internal (3 credits)	Internal (3 credits)
Develop a digital technologies outcome	**Apply conventions to develop a design for a digital technologies outcome**	**Apply user experience methodologies to develop a design for a digital technologies outcome**
Where students have access to the appropriate software to develop the digital outcome, this is ideal for remote learning and assessment.	Ideal for distance learning and assessment on digital platforms using digital mock-up applications or file-sharing. The evidence can be presented using any mode that clearly communicates the student's understanding and application of the design process.	Ideal for distance learning and assessment on digital platforms using digital mock-up applications or file-sharing. The evidence can be presented using any mode that clearly communicates the student's understanding and application of the design process.
Students may be able to trial their outcome to gather information using collaboration software (video or otherwise).	Students may be able to gain feedback on their designs using collaboration software (video or otherwise). Students could also collect and annotate video evidence.	Students may be able to test their designs using collaboration software (video or otherwise). Students could also collect and annotate video evidence.
The Subject Learning Outcomes, standard, Unpacking, Conditions of Assessment, and Internal Assessment Activities give guidance on the requirements of the standard.	For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work.	For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work.
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AS 92006 1.3 External (5 credits) **Demonstrate understanding of usability in human-computer interfaces** Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.	**AS 91892** 2.3 Internal (4 credits) **Use advanced techniques to develop a database** Where students have access to the appropriate database software, this is suitable for remote learning and assessment. For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.	**AS 91902** 3.3 Internal (4 credits) **Use complex techniques to develop a database.** Where students have access to the appropriate database software, this is suitable for remote learning and assessment. For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.

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AS 92007 **1.4** External (4 credits) **Design a digital technologies outcome** Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.	**AS 91893** **2.4** Internal (4 credits) **Use advanced techniques to develop a digital media outcome** Where students have access to the appropriate software, this is suitable for remote learning and assessment. For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.	**AS 91903** **3.4** Internal (4 credits) **Use complex techniques to develop a digital media outcome** Where students have access to the appropriate software, this is suitable for remote learning and assessment. For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.

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	AS 91894 **2.5** Internal (6 credits) **Use advanced techniques to develop an electronics outcome** This standard requires students to develop a functional electronics outcome. Some of the planning work could be done using digital platforms, such as explaining the interfaces and functions of components and systems and the explaining of relevant implications. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.	**AS 91904** **3.5** Internal (6 credits) **Use complex techniques to develop an electronics outcome** This standard requires students to construct a functional electronics outcome. Some of the planning work could be done using digital platforms, such as explaining the behaviour and functions of the electronics outcome and explaining communication protocols. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.

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	AS 91895 **2.6** Internal (4 credits) **Use advanced techniques to develop a network** The standard requires students to install and configure hardware (including peripherals) and software. Some of the planning work could be done using digital platforms, such as investigating and explaining the parts and components to be used and explaining the relevant implications. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.	**AS 91905** **3.6** Internal (4 credits) **Use complex techniques to develop a network** This standard requires students to construct a network physically. Some of the planning work could be done using digital platforms, such as investigating and explaining the parts and components to be used and explaining the OSI model. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.

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	AS 91896 **2.7** Internal (6 credits) **Use advanced programming techniques to develop a computer program** Where students have access to the appropriate software, this is suitable for remote learning and assessment. For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.	**AS 91906** **3.7** Internal (6 credits) **Use complex programming techniques to develop a computer program** Where students have access to the appropriate software, this is suitable for remote learning and assessment. For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.

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	AS 91897 **2.8** Internal (6 credits) **Use advanced processes to develop a digital technologies outcome** Ideal for distance learning and assessment using digital platforms or file-sharing. The evidence can be presented using any mode that clearly communicates the student's development of an outcome. Students may be able to test their outcomes using collaboration software (video or otherwise). Students could also collect and annotate video evidence. For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.	**AS 91907** **3.8** Internal (6 credits) **Use complex processes to develop a digital technologies outcome** Ideal for distance learning and assessment using digital platforms or file-sharing. The evidence can be presented using any mode that clearly communicates the student's development of an outcome. Students may be able to test their outcomes using collaboration software (video or otherwise). Students could also collect and annotate video evidence. For authenticity purposes, check points and verbal conferencing with students during the assessment period is recommended. For specific advice on how to manage authenticity when assessing during uncertain times, please see the Pūtake module: Tāku Reo, Tāku Mahi - My Voice, My Work. Further support can be found in the assessment resources on TKI and in the clarifications and exemplar documents on the NZQA Digital Technologies page.

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	AS 91898 2.9 External (3 credits) **Demonstrate understanding of a computer science concept** Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.	**AS 91908** 3.9 External (3 credits) **Analyse an area of computer science** Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.
	AS 91899 2.10 External (3 credits) **Present a summary of developing a digital outcome** Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply. Depending on the outcome chosen (for example an electronics outcome), the candidates must have produced it within the last 12 months. Schools should encourage students to produce one where the digital component is easily recognised, and the development process can be easily discussed and summarised.	**AS 91909** 3.10 External (3 credits) **Present a reflective analysis of developing a digital outcome** Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply. Depending on the outcome chosen (for example an electronics outcome), the candidates must have produced it within the last 12 months. Schools should encourage students to produce one where the digital component is easily recognised, and the development process can be reflectively analysed.