

NCEA Generic Technology 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

If students have an internet connection, there are a number of options available for collaborative working. For example, they may be able to use video conferencing, a cloud-based platform for file sharing, or a learning management system.

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

Remote working using digital technology may pose issues around access and equity for some students, which you will need to consider in your programme planning.

For the standards that have a practical component and require access to specialist equipment, tools and materials, assessment will need to be completed upon return to school.

Supporting Evidence

Evidence for these standards could be collected in a number of ways:

- Using cameras to capture or record what the students are saying.
- Annotations of images. Take photos, print them or annotate digitally.
- Video with voiceover using software for screen-casting or recording.
- Using e-portfolio platforms to collate digital evidence.
- Written portfolios.

For standards that have a research and/or stakeholder feedback component, rather than presenting large amounts of gathered research or stakeholder surveys, evidence could be provided that summarises the findings along with what this means for the brief or conceptual design.

Generic Technology 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 2	Level 3
AS 91354 2.1 Internal (4 credits) Undertake brief development to address an issue Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain feedback on the development of their brief using collaboration tools to share with their teacher. The stakeholder's requirement could be completed by accessible household members or the assessor, if appropriate. Support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. The Pūtake modules: Technology – Brief Development, The Final Brief, and Making Assessor Judgements Generic Technology provide additional guidance. 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.	AS 91608 3.1 Internal (4 credits) Undertake brief development to address an issue within a determined context Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain feedback on the development of their brief using collaboration tools to share with their teacher. The stakeholder's requirement could be completed by accessible household members or the assessor, if appropriate. Access to wider stakeholders could be managed by video conferencing or file sharing. Support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. The Pūtake modules: Technology – Brief Development, The Final Brief, and Making Assessor Judgements Generic Technology provide additional guidance. 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.

Level 2	Level 3
AS 91355 2.2 Internal (4 credits) Select and use planning tools to manage the development of an outcome Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain the feedback required to develop project schedules by using collaboration tools for file sharing. The stakeholder's requirement could be completed by accessible household members or the assessor, if appropriate. Support can be found in the clarification document and exemplars on the NZQA Technology page, and the Pūtake module: Technology – Planning for Practice provides further guidance. 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.	AS 91609 3.2 Internal (4 credits) Undertake project management to support technological practice Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain the feedback required to develop project schedules by using collaboration tools for file sharing. The stakeholder's requirement could be completed by accessible household members or the assessor, if appropriate. Support can be found in the clarification document and exemplars on the NZQA Technology page, and the Pūtake module: Technology – Planning for Practice provides further guidance. 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.

Level 2	Level 3
AS 91356 2.3 Internal (6 credits) Develop a conceptual design for an outcome Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Functional modelling could be done using sketches, suitable modelling software or paper/cardboard mock-ups or models. Students may be able to gain feedback on the development of their conceptual design using collaboration tools to share with their teacher. Students could collect, scan and/or photograph their sketches and models and upload to an image sharing site. The stakeholder's requirement could be completed by accessible household members or the assessor, if appropriate. Support can be found in the clarification document and exemplars on the NZQA Technology page, and the Pūtake module: Technology – Modelling in Technological Practice provides further guidance. 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.	AS 91610 3.3 Internal (6 credits) Develop a conceptual design considering fitness for purpose in the broadest sense Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Functional modelling could be done using sketches, suitable modelling software or paper/cardboard mock-ups or models. Students may be able to gain feedback on the development of their conceptual design using collaboration tools to share with their teacher. Students could collect, scan and/or photograph their sketches and models and upload to an image sharing site. The stakeholder's requirement could be completed by accessible household members or the assessor, if appropriate. Access to wider stakeholders could be managed by video conferencing or file sharing. Support can be found in the clarification document and exemplars on the NZQA Technology page, and the Pūtake module: Technology – Modelling in Technological Practice provides further guidance. 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.

Level 2	Level 3
AS 91357 2.4 Internal (6 credits) Undertake effective development to make and trial a prototype This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. Support can be found in the clarification document and exemplars on the NZQA Technology page, and the Pūtake module: Technology – Modelling in Technological Practice provides further guidance. 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.	AS 91611 3.4 Internal (6 credits) Develop a prototype considering fitness for purpose in the broadest sense This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. Support can be found in the clarification document and exemplars on the NZQA Technology page, and the Pūtake module: Technology – Modelling in Technological Practice provides further guidance. 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.

Level 2		Level 3	
AS 91358	2.5	AS 91612	3.5
External (4 credits)		External (4 credits)	
Demonstrate understanding of how technological modelling supports risk management		Demonstrate understanding of how technological modelling supports technological development and implementation	
Teaching and learning towards assessment of this standard is suitable remotely with guidance. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.		Teaching and learning towards assessment of this standard is suitable remotely with guidance. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.	
Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research.		Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research.	
AS 91359	2.6	AS 91613	3.6
External (4 credits)		External (4 credits)	
Demonstrate understanding of the role of material evaluation in product development		Demonstrate understanding of material development	
Teaching and learning towards assessment of this standard is suitable remotely with guidance. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.		Teaching and learning towards assessment of this standard is suitable remotely with guidance. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.	
Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research.		Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research.	

Level 2	Level 3
AS 91360 2.7 External (4 credits) Demonstrate understanding of redundancy and reliability in technological systems Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply. Standards that have a practical component will need access to specialist equipment, tools and materials. Most students are unlikely to have this access.	AS 91614 3.7 External (4 credits) Demonstrate understanding of operational parameters in complex and highly complex technological systems Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply. Standards that have a practical component will need access to specialist equipment, tools and materials. Most students are unlikely to have this access.

Level 2	Level 3
AS 91361 2.8 Internal (4 credits) Demonstrate understanding of sociocultural factors, and how competing priorities are managed, in technology Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain feedback on the development of their report using collaboration tools to share with their teacher. Further support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. 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.	AS 91615 3.8 Internal (4 credits) Demonstrate understanding of consequences, responsibilities and challenges involved in technology Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain feedback on the development of their report using collaboration tools to share with their teacher. Further support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. 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.

Level 2	Level 3
AS 91362 2.9 Internal (4 credits) Demonstrate understanding of the nature of technological outcomes Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain feedback on the development of their report using collaboration tools to share with their teacher. Further support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. 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.	AS 91616 3.9 Internal (4 credits) Demonstrate understanding of how the fitness for purpose of technological outcomes may be broadly interpreted Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain feedback on the development of their report using collaboration tools to share with their teacher. Further support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. 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.

Level 2	Level 3
AS 91363 2.10 External (4 credits) Demonstrate understanding of sustainability in design Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research.	AS 91617 3.10 External (4 credits) Undertake a critique of a technological outcome's design Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply. Where the teaching and learning programme has been providing Technological experiences from the candidate's own practice, there may be a need to provide these experiences using case studies or research.

Level 2	Level 3
AS 91364 2.11 Internal (4 credits) Demonstrate understanding of advanced concepts related to human factors in design Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain feedback on the development of their report using collaboration tools to share with their teacher. Further support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. 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.	

Level 2	Level 3
AS 91365 2.12 Internal (4 credits) Demonstrate understanding of advanced concepts used in manufacturing Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain feedback on the development of their report using collaboration tools to share with their teacher. Further support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. 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.	AS 91619 3.12 Internal (4 credits) Demonstrate understanding of the application of a technical area to a specific field Where students have access to research materials, this standard is suitable for distance learning and assessment using digital platforms such as learning management systems, video conferencing or file sharing. Students may be able to gain feedback on the development of their report using collaboration tools to share with their teacher. Further support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. 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.

Level 2	Level 3
AS 91366 2.10 Internal (6 credits) Undertake development and implementation of an effective manufacturing process. This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. Further support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. 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.	AS 91618 3.10 Internal (6 credits) Undertake development and implementation of a green manufacturing process. This standard may require specialist equipment and materials. It is suggested that this standard be assessed once students have safe access to suitable materials, equipment and tools to produce the prototype. Further support can be found in the assessment resources on TKI and in the clarification document and exemplars on the NZQA Technology page. 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.