

## NCEA Physics 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

Where teaching, learning and assessment is done via distance learning, students may need access to digital devices and the internet. These requirements may pose access and equity issues for some students, which you will need to consider in your programme planning.

Students may need access to specific equipment to collect primary data for the practical investigation standards. This may require considering issues of availability and health and safety.

# Physics Matrix

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

<b>Green:</b>	These standards are suitable for remote teaching, learning and assessment.
<b>Blue:</b>	Teachers can facilitate assessment against these standards by remote learning with guidance (refer to General Guidance above).
<b>Orange:</b>	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.
<b>Red:</b>	These standards require a collaborative process or interaction with others, and are not suitable for remote teaching, learning and assessment.

Level 2	Level 3
<p><b>AS 91168</b> <span style="float: right;"><b>2.1</b></span></p> <p>Internal (4 credits)</p> <p><b>Carry out a practical physics investigation that leads to a non-linear mathematical relationship</b></p> <p>This standard is suitable for remote teaching, learning and assessment provided the candidate has access to appropriate equipment and/or technology.</p> <p>For authenticity purposes, teachers could have regular verbal conferencing with students during the assessment period.</p> <p>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.</p> <p>Guidance and support are also provided on the NZQA Physics page. This includes the clarification document, exemplars, Alternative Evidence Gathering Templates, and the National Moderator's Report.</p>	<p><b>AS 91521</b> <span style="float: right;"><b>3.1</b></span></p> <p>Internal (4 credits)</p> <p><b>Carry out a practical investigation to test a physics theory relating two variables in a non-linear relationship</b></p> <p>This standard is suitable for remote teaching, learning and assessment provided the candidate has access to appropriate equipment and/or technology.</p> <p>For authenticity purposes, teachers could have regular verbal conferencing with students during the assessment period.</p> <p>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.</p> <p>Guidance and support are also provided on the NZQA Physics page. This includes the clarification document, exemplars, Alternative Evidence Gathering Templates, and the National Moderator's Report.</p>

Level 2		Level 3	
<p><b>AS 91169</b> 2.2</p> <p>Internal (3 credits)</p> <p><b>Demonstrate understanding of physics relevant to a selected context</b></p> <p>Teaching, learning and assessment of this standard, both formative and summative, could take place digitally.</p> <p>For authenticity purposes, each student could be required to submit draft materials along with the final assessment evidence to ensure all evidence is the student's own work. Teachers could have regular verbal conferencing with students during the assessment period. 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.</p> <p>Guidance and support are also provided on the NZQA Physics page. This includes the clarification document, exemplars, Alternative Evidence Gathering Templates, and the National Moderator's Report.</p>		<p><b>AS 91522</b> 3.2</p> <p>Internal (3 credits)</p> <p><b>Demonstrate understanding of the application of physics to a selected context</b></p> <p>Teaching, learning and assessment of this standard, both formative and summative, could take place digitally.</p> <p>For authenticity purposes, each student could be required to submit draft materials along with the final assessment evidence to ensure all evidence is the student's own work. Teachers could have regular verbal conferencing with students during the assessment period. 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.</p> <p>Guidance and support are also provided on the NZQA Physics page. This includes the clarification document, exemplars, Alternative Evidence Gathering Templates, and the National Moderator's Report.</p>	
<p><b>AS 91170</b> 2.3</p> <p>External (4 credits)</p> <p><b>Demonstrate understanding of waves</b></p> <p>Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.</p>		<p><b>AS 91523</b> 3.3</p> <p>External (4 credits)</p> <p><b>Demonstrate understanding of wave systems</b></p> <p>Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.</p>	

Level 2		Level 3	
<p><b>AS 91171</b> 2.4</p> <p>External (6 credits)</p> <p><b>Demonstrate understanding of mechanics</b></p> <p>Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.</p>		<p><b>AS 91524</b> 3.4</p> <p>External (4 credits)</p> <p><b>Demonstrate understanding of mechanical systems</b></p> <p>Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.</p>	
<p><b>AS 91172</b> 2.5</p> <p>Internal (3 credits)</p> <p><b>Demonstrate understanding of atomic and nuclear physics</b></p> <p>Teaching, learning and assessment of this standard, both formative and summative, could take place digitally.</p> <p>For authenticity purposes, each student could be required to submit draft materials along with the final assessment evidence to ensure all evidence is the student's own work. Teachers could have regular verbal conferencing with students during the assessment period. 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.</p> <p>Guidance and support are also provided on the NZQA Physics page. This includes the clarification document, exemplars, Alternative Evidence Gathering Templates, and the National Moderator's Report.</p>		<p><b>AS 91525</b> 3.5</p> <p>Internal (3 credits)</p> <p><b>Demonstrate understanding of Modern Physics</b></p> <p>Teaching, learning and assessment of this standard, both formative and summative, could take place digitally.</p> <p>For authenticity purposes, each student could be required to submit draft materials along with the final assessment evidence to ensure all evidence is the student's own work. Teachers could have regular verbal conferencing with students during the assessment period. 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.</p> <p>Guidance and support are also provided on the NZQA Physics page. This includes the clarification document, exemplars, Alternative Evidence Gathering Templates, and the National Moderator's Report.</p>	

Level 2		Level 3	
<p><b>AS 91173</b></p> <p>External (6 credits)</p> <p><b>Demonstrate understanding of electricity and electromagnetism</b></p> <p>Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.</p>	<p><b>2.6</b></p>	<p><b>AS 91526</b></p> <p>External (6 credits)</p> <p><b>Demonstrate understanding of electrical systems</b></p> <p>Teaching and learning towards assessment of this standard is suitable remotely. Assessment is not suitable remotely. The current Assessment Specifications will continue to apply.</p>	<p><b>3.6</b></p>
		<p><b>AS 91527</b></p> <p>Internal (3 credits)</p> <p><b>Use physics knowledge to develop an informed response to a socio-scientific issue</b></p> <p>Teaching, learning and assessment of this standard, both formative and summative, could take place digitally.</p> <p>For authenticity purposes, each student could be required to submit draft materials along with the final assessment evidence to ensure all evidence is the student's own work. Teachers could have regular verbal conferencing with students during the assessment period. 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.</p> <p>Guidance and support are also provided on the NZQA Physics page. This includes the clarification document, exemplars, Alternative Evidence Gathering Templates, and the National Moderator's Report.</p>	<p><b>3.7</b></p>