# **Assessing Working mathematically**

Facilitator guide

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## About this guide

This guide has been developed to assist leaders in facilitating the ‘Assessing Working mathematically’ professional learning session. The guide will explore:

* how the presentation supports the NSW Curriculum Reform
* how the session aligns with the Australian Professional Standards for Teachers and the School Excellence Framework
* how to structure the session to help your team effectively engage with the presentation content
* recommended activities to promote collaboration, reflection and plans for future action
* additional resources to support further professional development.

If you have questions about the session, please email mathematics7-12@det.nsw.edu.au.

## Presentation overview

This session will guide you through practical strategies and best practices for assessing Working mathematically. You will:

* discover how to design and implement formative and summative assessments that authentically capture students’ problem-solving skills and mathematical reasoning abilities
* explore what the new overarching Working mathematically outcome can look like in a classroom.

### Learning intentions and success criteria

By the end of the presentation, participants will:

* understand NESA’s assessment information
* be able to create assessment opportunities that best allow students to demonstrate their learning.

To demonstrate learning, participants will:

* be able to choose the best assessment tools to suit their students’ needs
* be able to explain how their assessment tools allow students to demonstrate Working mathematically processes.

### Alignment to the Australian Professional Standards for Teachers

This presentation aligns with the following standards:

* 5.1.2 Develop, select and use informal and formal, diagnostic, formative and summative assessment strategies to assess student learning.
* 6.3.2 Contribute to collegial discussions and apply constructive feedback from colleagues to improve professional knowledge and practice.

### Alignment to the School Excellence Framework

This professional learning session aligns with the following elements of the School Excellence Framework:

* Assessment
* Curriculum
* Effective classroom practice

## Preparation

It is recommended that you are familiar with the course structure and content prior to the professional learning session. You should guide participants through the learning by:

* playing video and audio files
* reading content when required (for example, activity instructions)
* leading activities and discussions
* managing time.

### Prior to the session

* Ensure all participants will have access to:
* the participant workbook (either printed or downloaded and completed electronically on a device)
* an assessment task that has been or will be used in your school. This could be a test, investigation task or any other assessment task where students are asked to respond to a question or prompt (required for Activity 1)
* your teaching program and/or upcoming lesson plans (required for Activity 2)
* Play any video or multimedia on your browser to ensure they have loaded for your session.
* Consider room or equipment set up for the day.

### After the session

* Direct participants to complete the evaluation survey using the QR code in their participant workbook.

## Session structure

This session should take approximately 90 minutes to complete. We recommend following the structure below.

|  |  |
| --- | --- |
| Item | Duration |
| Welcome and Acknowledgement of Country | 1 minute |
| Assessment policy and compliance | 4 minutes |
| Summative assessment | 10 minutes |
| Activity 1 | 40 minutes |
| Formative assessment | 5 minutes |
| Activity 2 | 25 minutes |
| Where to next? | 5 minutes |

## Session activities

Learning in this session is supported by the Participant workbook and 2 collaborative activities. These activities are designed to help your team reflect on the presentation and consider how the information can be applied to your school context.

### Participant workbook

The Participant workbook can be printed double-sided or used digitally. There are note-taking pages that complement the presentation and activity templates to guide engagement with the content.

The **note-taking pages** are to be used while watching the presentation. They provide your team with an opportunity to reflect and think critically about the information being shared. The note-taking pages feature 3 main sections:

* Focus questions – these are questions to keep in mind while engaging with the session. They encourage your team to consider how the content in the presentation can inform their practice.
* Key points and notes – in this section, your team can record any concepts or ideas that resonate with them. The left column is for participants to write down the main points of the presentation for future reference. The right column provides them with space to expand on their thinking and provide additional detail.
* Summary – at the end of the presentation, participants can write down 3 key ideas they would like to apply to their practice. You may like to conclude the session by having your team share the reflections they have recorded.

The **activity templates** provide a scaffold for the activity slides in the presentation. Further information is provided below.

### Activity 1

Participants should have access to an assessment task that has been or will be used in their school. This could be a test, investigation task or any other assessment task where students are asked to respond to a question or prompt.

If an assessment task is not available, participants could be guided to the examples available in the 7–10 section of the Mathematics K–10 Syllabus ([bit.ly/MathK-10Syl](https://bit.ly/MathK-10Syl)) and consider the questions they find as possible test questions. This will be modelled in the presentation.

Participants are asked to refer to page 6 of their participant workbook to evaluate existing questions in their assessment task, comparing them to the course performance descriptors ([bit.ly/MathCPD](https://bit.ly/MathCPD)). They are then asked to modify questions to enhance the opportunities for students to demonstrate Working mathematically processes and reflect on this process. Participants should be guided back together to share their responses with the group.

### Activity 2

Participants are asked to consider their upcoming lessons and construct a plan for incorporating a given formative assessment strategy. A device may be required to investigate the provided links to better understand the given strategies. Participants should be able to articulate how they will implement a chosen strategy, consider student responses and outline the actions the teacher could take to benefit student learning.

## Where to next?

Would you like to learn more? The links below provide additional learning and resources.

* Planning programming and assessing mathematics 7–10 ([bit.ly/departmentresources](https://bit.ly/departmentresources)) – resources developed and published by the NSW Department of Education to support the implementation of the 7–10 section of the Mathematics K–10 Syllabus. Participants could review the provided assessment tasks in both Stage 4 and 5 as examples of the summative assessment strategies described in this presentation. Additionally, formative assessment strategies are highlighted throughout the lessons provided at this link.
* Professional Learning ([bit.ly/MathMicrolearn](https://myplsso.education.nsw.gov.au/mylearning/catalogue/details/86572d44-d40b-ee11-ba76-0003ffd026a7)) – short, flexible and available on demand professional learning modules to support you with the implementation of the 7–10 section of the Mathematics K–10 Syllabus.

## References

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NESA holds the only official and up-to-date versions of the NSW Curriculum and syllabus documents. Please visit the NSW Education Standards Authority (NESA) website <https://educationstandards.nsw.edu.au/> and the NSW Curriculum website [https://curriculum.nsw.edu.au](https://curriculum.nsw.edu.au/).

[Mathematics K–10 Syllabus](https://curriculum.nsw.edu.au/learning-areas/mathematics/mathematics-k-10-2022/overview) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2022.

NESA (NSW Education Standards Authority) (2021) ‘[Proficient Teacher: Standard descriptors](https://educationstandards.nsw.edu.au/wps/portal/nesa/teacher-accreditation/meeting-requirements/the-standards/proficient-teacher)’, *The Standards*, NESA website, accessed 8 December 2023.

Organization for Economic Cooperation and Development (OECD) (2019) ‘[PISA 2018 Assessment and Analytical Framework: PISA 2018 Mathematics Framework’](https://www.oecd-ilibrary.org/docserver/13c8a22c-en.pdf?expires=1702264552&id=id&accname=guest&checksum=D41A2981BACD1FFFBE040332F23ACC4B), OECD iLibrary, accessed 8 December 2023.

OECD (2022) [*Description of the PISA mathematics literacy proficiency levels: 2022*](https://nces.ed.gov/surveys/pisa/pisa2022/docs/DescriptionsOf2022ProficiencyLevels-TableI31.pdf) [PDF 106 KB], OECD iLibrary, accessed 8 December 2023.

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