

TEAC 7165 WORKING MATHEMATICALLY 2: STRENGTHENING CONNECTIONS

Credit Points 10

Coordinator Robert Mcintosh ([https://directory.westernsydney.edu.au/search/name/Robert Mcintosh/](https://directory.westernsydney.edu.au/search/name/Robert%20Mcintosh/))

Description This subject builds on the knowledge and practices developed in Working Mathematically 1: Exploring Connections to prepare students to work with upper primary school learners. Students will expand their understanding of primary mathematics in the NSW Mathematics K-10 syllabus for Stages 2 and 3. The focus of this subject is on mathematics pedagogy, curriculum, inquiry, learner engagement, assessment, differentiation for diversity and the integration of technology. Assessment for learning and planning will be underpinned by the Australian Curriculum: Mathematics and the relevant NSW Mathematics syllabus and curriculum documents. Students will explore how mathematical learning, fluency and problem-solving is conceptually developed. This subject will promote confident teachers who engage learners in meaningful mathematical experiences which promote autonomy and agency. This subject is included in the Transition Phase of the Master of Teaching program.

School Education

Discipline Teacher Education: Primary

Student Contribution Band HECS Band 1 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Postgraduate Coursework Level 7 subject

Equivalent Subjects TEAC 7094

Restrictions

Students must be enrolled in 1783 Master of Teaching (Birth-5 Years/ Birth-12 Years).

Learning Outcomes

1. Apply a range of assessment tools and strategies to gather data about learners that enables the differentiation of learning experiences effective pedagogical practices including instructional strategies to strengthen their capabilities, confidence and motivation.
2. Evaluate learning against curriculum requirements by interpreting learner work samples, and practising consistent and comparable judgements, that would enable timely and appropriate feedback for learning.
3. Plan effective and engaging learning experiences that use a range of resources, including the use of technology, to achieve learner outcomes.
4. Interpret theoretical perspectives, research, the Australian Curriculum: Mathematics and the NSW Mathematics K-10 syllabus to design learning experiences that cater for diverse capabilities and promote responsive teaching.
5. Design experiences that demonstrate knowledge and understanding of the development of mathematics concepts and skills related to the teaching of number and algebra, measurement and space, statistics

and probability, and the processes of understanding, fluency, problem-solving, and reasoning.

6. Prepare engaging and inclusive experiences that use appropriate pedagogies for teaching and learning mathematics, including student-centred practices, cooperative learning, problem-solving, inquiry, and investigative approaches.

Subject Content

1. Teaching Mathematics - exploring curriculum documents and continuity of learning for children, integrating mathematics across the curriculum, the role of the teacher as a responsive teacher and facilitator and the role of the child as an active learner developing their ability to think creatively, logically and critically.
2. Theoretical underpinnings - Constructivism in mathematics, working mathematically, principles of effective pedagogy in mathematics, Student engagement, lesson structures for promoting conceptual understanding - importance of independent problem-solving once a student approaches proficiency.
3. Assessment for learning and effective pedagogical practices – Assessment strategies and tools, and analysing data to inform planning, explicit teaching strategies and feedback, questions: types and structures.
4. Problem-solving, investigations, inquiry, and designing rich tasks, developing a classroom culture that supports problem-solving, enabling and extending prompts, addressing children's needs in the mathematics classroom, teaching through problem-solving, differentiation.
5. Number and algebra concepts - number sense, number talks, rich tasks to promote fraction understanding, exploring and addressing fraction misconceptions.
6. Measurement and space concepts - linking measurement and space concepts to the real-world, practical and interactive ideas to teach measurement geometry and space, using concrete materials to explore concepts, misconception involving triangles.
7. Statistics and probability concepts - representation and interpretation of data, using games to teach data, chance and probability.
8. Exploring the value of teaching resources in relation to the syllabus and mathematics teaching pedagogy, using technology.
9. Investigating culturally appropriate and student-centred learning with a focus on student equity, autonomy and agency and building proficiency in understanding, fluency, problem solving and reasoning within all lessons.

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task
Professional Task	2,000 words	50	N	Individual
Critical Review	2,000 words	50	N	Individual

Prescribed Texts

Booker, G., Bond, D., & Seah, R. (2020). *Teaching primary mathematics* (6th ed.). Pearson Australia.

NSW Education Standards Authority (NESA) (2022). *NSW Mathematics K-10 Syllabus*. <https://curriculum.nsw.edu.au/learning-areas/>

mathematics/mathematics-k-10-2022 (<https://curriculum.nsw.edu.au/learning-areas/mathematics/mathematics-k-10-2022/>)

Teaching Periods

Autumn (2024)

Bankstown City

On-site

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View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=TEAC7165_24-AUT_BK_1#subjects)

Spring (2024)

Bankstown City

On-site

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View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=TEAC7165_24-SPR_BK_1#subjects)