TEAC 7038 WORKING MATHEMATICALLY 1: EXPLORING CONNECTIONS

Credit Points 10

Legacy Code 102603

Coordinator Jana Kovtun (https://directory.westernsydney.edu.au/search/name/Jana Kovtun/)

Description This subject develops students' critical understandings of how numeracy and mathematical ideas shape young children's lives during their first eight years. Students will develop their ability to provide rich learning experiences that enhance and assess the development of children's numeracy and foundational mathematical concepts. The subject will foster positive dispositions towards teaching and applying mathematics and numeracy in educational settings for children using the Early Years Learning Framework for Australia, the Australian Curriculum and the NSW Mathematics K-10 Syllabus curriculum documents. It will also consider the literacy demands of Mathematics. This subject is included in the Development Phase of the Master of Teaching program.

School Education

Discipline Teacher Education: Early Childhood

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 LGYA 1111 - Mathematics Science Technology 0-8 TEAC 7060 - Investigating with Mathematics Science and Technology

Restrictions

Students must be enrolled in 1783 Master of Teaching (Birth-5 Years/Birth-12 Years), 1784 Master of Teaching (Birth – 5 years), 1773 Master of Teaching (Early Childhood and Primary) or 1774 Master of Teaching (Early Childhood).

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Reflect on the role of the teacher, family and community in extending children's learning and positive disposition towards mathematics and numeracy.
2. Apply key terminology and rich mathematical vocabulary to explain and represent mathematical ideas and to support numeracy development.
3. Analyse the continuity of learning of key mathematical processes of understanding, fluency, problem-solving and reasoning in the early years.
4. Use the Early Years Learning Framework for Australia, Australian Curriculum (F-Year 2) and the NSW Mathematics K-10 (focus on K-2) syllabus documents to plan, monitor and evaluate developing mathematical knowledge, skills and understandings.
5. Use formative and summative assessment procedures to assess children's mathematical and numeracy using appropriate curriculum documents to set appropriate teaching intentions and learning outcomes for children.
6. Create play and integrated learning experiences that enhance investigation and exploration of working mathematically.
7. Design a range of effective, scaffolded teaching strategies to promote deep mathematical thinking and problem-solving.
8. Choose appropriate resources, concrete manipulatives, games, technologies, literature, and everyday objects to extend children's confidence to engage in mathematical thinking.

Subject Content

- **Role of the teacher** Challenge misconceptions, attitudes and bias and identify positive dispositions and motivations to engage, learn and teach mathematics and numeracy
- **Key terminology**, rich mathematical language and vocabulary.
- **The continuity of learning for children** birth to 8 years working mathematically; the synergy and connections amongst curriculum documents - Early Years Learning Framework for Australia, Australian Curriculum and NSW Mathematics K-10 syllabus (Early Stages 1- Stage 1);
- **The influence** of children's early mathematical and numeracy experiences; using children's funds of knowledge, strengths and capabilities to build capabilities and interest;
- **Promoting equity** in mathematics; supporting learners including Aboriginal and Torres Strait Islander children, multilingual children, children with diverse abilities and experiences..
- **Mathematical concepts** in the early years, mathematics and play, communicating mathematical ideas and concepts; understanding, fluency, problem-solving and reasoning.
- **The planning cycle** - data gathering, assessment, planning for implementation, teaching strategies, monitoring and evaluating integrated and scaffolded mathematical experiences and lessons.
- **Documentation and assessment** of children's mathematical learning including assessment tools and approaches; how data analysis informs the planning cycle.
- **Content** Exploring spatial sense, geometric and algebraic reasoning, structure and pattern, number sense, data and probability reasoning and measuring along with drawing connections and argumentation in the context of play, daily interactions with people and objects and planned integrated experiences; Making connections to conceptual understandings of algebra, measurement and geometry, and statistics and probability concepts;
- **Planning** experiences and lessons that take account of different abilities and experiences.
- **Effective pedagogies and explicit teaching strategies** that scaffold and promote deep mathematical understanding the processes, connections, investigations and engagement in problem-solving to reach proficiency.
- **Resources** role of language and literature in learning mathematics, incorporating a range of materials digital technologies, concrete manipulatives, games, literature, symbols and patterns in the natural world and community environments

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	Mandatory
Report	2500 words	50	N	Individual	N

Professional Task	2500 words	50	N	Individual	N

Prescribed Texts

- Macdonald, A. (2023). *Mathematics in early childhood education*. Oxford University Press.
- NSW Education Standards Authority. (2022). *Mathematics K-10: NSW syllabus for the Australian curriculum*. 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 (2025)

Bankstown City

On-site

Subject Contact Jana Kovtun (https://directory.westernsydney.edu.au/search/name/Jana Kovtun/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=TEAC7038_25-AUT_BK_1#subjects)

Spring (2025)

Bankstown City

On-site

Subject Contact Jana Kovtun (https://directory.westernsydney.edu.au/search/name/Jana Kovtun/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=TEAC7038_25-SPR_BK_1#subjects)