



UNSW
A U S T R A L I A

Arts & Social
Sciences

School of Education

EDST6725
Mathematics Method 1

Semester 1, 2016

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IMPORTANT :

For student policies and procedures relating to assessment, attendance and student support, please see website, <https://education.arts.unsw.edu.au/students/courses/course-outlines/>

The School of Education acknowledges the Bidjigal and Gadigal people as the traditional custodians of the lands upon which we learn and teach.

1. LOCATION

Faculty of Arts and Social Sciences
School of Education
EDST6725 Mathematics Method 1 (6 units of credit)
Semester 1 2016

2. STAFF CONTACT DETAILS

Lecturer: Vicki Likourezos
Office Location: John Goodsell 132
Email: v.likourezos@unsw.edu.au
Availability: Friday 7-7.30 pm or via email

3. COURSE DETAILS

Course Name	Mathematics Method 1
Credit Points	6 units of credit (uoc)
Workload	150 hours including class contact hours, readings, class preparation, assessment, follow up activities, etc.
Schedule	
Lecture	Fri 16:00 - 17:00 (w1-3, 5-11, N4, CLB 2)
Tutorial(s)	Fri 17:00 - 19:00 (w1-3, 5-11, N4, John Goodsell LG21)

Summary of Course

This course is designed to increase a student's pedagogical content knowledge for Mathematics teaching, with an emphasis on literacy and numeracy. The key elements of pedagogy and Mathematics content knowledge are examined and developed. Students will critically address how these elements can then be combined into effective classroom practice for addressing the requirements and philosophy of the NSW Mathematics syllabi.

Aims of the Course

This course aims to:

- Increase a student's pedagogical content knowledge for Mathematics teaching.
- Increase understanding of literacy in numeracy within the context of Mathematics.
- Develop a student's understanding of what comprises effective classroom practice.

The main ways in which the course has changed since last time as a result of student feedback

- Provide opportunities for students to collect and share their high quality classroom resources which will help them better prepare for their first year of teaching.
- Give students more thinking time and feedback. This increases student engagement where they can learn more effectively within a motivating environment.

Important information

- **Assessment:** Students must pass all assignments in order to pass the course. Only by passing all assignments, can they go on placement for PE 1.
- **Attendance:** Students are expected to give priority to university study commitments. Unless specific and formal permission has been granted, failure to attend at least 80% of classes in this course may result in failure.

Student Learning Outcomes

Outcome		Assessment/s
1	Demonstrate knowledge and understanding of the NSW Board of Studies Mathematics Syllabuses for stages 4/5 and stage 6 and various Department of Education policies, particularly those relating to ICT, Literacy, Aboriginal Education and Cultural Diversity.	2, 3, 4
2	Plan and implement coherent, goal oriented lessons and lesson sequences that are designed to engage all students and address learning outcomes.	2, 3, 4
3	Demonstrate the essential link between outcomes, assessment, teaching strategies and lesson planning.	1, 2, 3, 4
4	Demonstrate knowledge and understanding of learning outcomes and classroom practice related to teaching ICT in stages 4/5 and 6.	2, 3, 4
5	Plan for and implement a range of literacy strategies to meet the needs of all students.	1, 2, 3, 4
6	Discuss classroom strategies that recognise students' different approaches to learning.	1, 2, 3, 4
7	Analyse specific strategies for teaching Aboriginal and Torres Strait Islander students, students with special education needs, Non-English Speaking Background students, and students with challenging behaviours.	1, 2, 3, 4
8	Develop appropriate and engaging resources for the Mathematics classroom that take into account students' skills, interests and prior achievements and that respect the social, ethnic and religious backgrounds of students.	1, 2, 3, 4
9	Investigate and discuss a variety of strategies to develop rapport with students within a positive classroom learning environment	1, 2, 3, 4
10	Recognise a range of professional organizations that can contribute to the on-going professional development of Mathematics teachers.	3

Program Learning Outcomes (AITSL Professional Graduate Teaching Standards)

Standard		Assessment/s
1.2	Demonstrate knowledge and understanding of research into how students learn and the implications for teaching.	3, 4
1.3	Demonstrate knowledge of teaching strategies that are responsive to the learning strengths and needs of students from diverse linguistics, cultural, religious and socio-economic backgrounds.	3, 4
2.1	Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies of the teaching area.	1, 2, 3, 4
2.2	Organise content into an effective learning and teaching sequence.	3
2.3	Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans.	3
2.4	Demonstrate broad knowledge of, understanding of and respect for Aboriginal and Torres Strait Islander histories, cultures and languages.	3, 4
2.5	Know and understand literacy and numeracy teaching strategies and their application in teaching areas.	1, 2, 3, 4
2.6	Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.	1, 3
3.1	Set learning goals that provide achievable challenges for students of varying abilities and characteristics.	1, 3
3.2	Plan lesson sequences using knowledge of student learning, content and effective teaching strategies in teaching.	3
3.3	Include a range of teaching strategies in teaching.	1, 3, 4
3.4	Demonstrate knowledge of a range of resources, including ICT, that engage students in their learning.	1, 3
4.1	Identify strategies to support inclusive student participation and engagement in classroom activities.	1, 3
4.2	Demonstrate the capacity to organise classroom activities and provide clear directions.	3
6.3	Seek and apply constructive feedback from supervisors and teachers to improve teaching practices.	1, 3

National Priority Area Elaborations

Priority area		Assessment/s
A. Aboriginal and Torres Strait Islander Education	1 – 6 in weeks 1 and 5, 4 – 6 in weeks 2 & 3	1, 2, 3
B. Classroom Management	1 – 5 across all weeks	1, 2, 3, 4
C. Information and Communication Technologies	1 – 6, in weeks 1, 5, 7 & 9	1, 2, 3, 4
D. Literacy and Numeracy	2 – 4 & 6 in week 1, 1 – 12, 17 – 19 in weeks 2 – 11	1, 2, 3, 4
E. Students with Special Educational Needs	1 – 4 across all weeks	1, 2, 3, 4
F. Teaching Students from Non-English Speaking Backgrounds	3 – 6 in week 1 and 3 – 7 in weeks 2 – 11	1, 2, 3, 4

4. RATIONALE FOR THE INCLUSION OF CONTENT AND TEACHING APPROACH

This subject aims to develop in each student the ability to effectively teach Mathematics to secondary school students with an emphasis on the Australian Curriculum for NSW Mathematics. During the course, students will develop their knowledge of New South Wales syllabus documents. Lectures, tutorials and assignments will cover a variety of approaches to teaching and learning in the Mathematics classroom. Emphasis will be given to the relationship between Mathematics, literacy and numeracy and the role and value of Mathematics in the curriculum and the community.

Student-centred activities will form the basis of the course examining the central ideas and common misconceptions. These activities will draw on the prior knowledge of the students and will allow them to engage in relevant and challenging experiences that mirror those they will be expected to design for the secondary students they will later teach.

5. TEACHING STRATEGIES

- Explicit teaching, including lectures, to demonstrate an understanding of students' different approaches to learning and the use of a range of teaching strategies to foster interest and support learning.
- Small group cooperative learning to understand the importance of teamwork in an educational context and to demonstrate the use of group structures as appropriate to address teaching and learning goals.
- Extensive opportunities for whole group and small group dialogue and discussion, allowing students the opportunity to demonstrate their capacity to communicate and liaise with the diverse members of an education community, and to demonstrate their knowledge and understanding of method content and language.
- Structured occasions for reflection on learning to allow students to reflect critically on and improve teaching practice and strategies.
- Online learning from readings on the Moodle website.
- Peer teaching in a simulated classroom setting.

These activities will occur in a classroom climate that is supportive and inclusive of all learners.

6. COURSE CONTENT AND STRUCTURE

Week Beginning	Weekly Topic
<p>1 (29 Feb - 4 Mar)</p>	<p>Introduction to the Course</p> <p>What is Mathematics? How has it changed in recent years? What is expected of Mathematics teachers? Where can you find resources? What professional networks are there to help you?</p> <p>Mathematics Syllabus in the Continuum of K-12 (including the Life Skills Syllabus) A1-6, B1-5, C1-6, D2-4,6, E1-4, F3-6</p>
<p>2 (7-11 March)</p>	<p>Teaching strategies to enhance Literacy and Numeracy in the Classroom</p> <p>Meeting the literacy and numeracy needs of all students in the classroom Respect and knowledge of different cultures A4-6, B1-5, C1-6, D1-12, 17-19, E1-4, F3-7</p> <p><i>Short presentations by students</i></p>
<p>3 (14-18 March)</p>	<p>Number & Algebra: Decimals, Fractions and Percentages</p> <p>Lesson Planning B1-5, C1-6, D1-12, 17-19, E1-4, F3-7</p> <p><i>Short presentations by students</i></p> <p>* Remember to submit proposed lesson plan 1 week prior to your Microteaching.</p>
<p>4 (21-25 March)</p>	<p>Good Friday</p> <p><i>Assessment 2 (Literacy Materials) is due via Moodle at 5pm, on 23 March</i></p>
	<p>Mid Semester Break</p>
<p>5 (4 April-8 April)</p>	<p>Number & Algebra: Financial Mathematics</p> <p>Using ICT: Excel</p> <p>Differentiation A1-6, B1-5, C1-6, D1-12, 17-19, E1-4, F3-7</p> <p><i>Short presentations by students</i> <i>Microteaching</i></p>

<p>6 (11-15 April)</p>	<p>Number & Algebra: Introducing Algebra</p> <p>Microteaching Expectations B1-5, C1-6, D1-12, 17-19, E1-4, F3-7</p> <p><i>Assessment 3 (Unit of Work) is due via Moodle at 5 pm on 13 April</i></p> <p><i>Short presentations by students</i> <i>Microteaching</i></p>
<p>7 (18-22 April)</p>	<p>Measurement & Geometry: Geometry</p> <p>Using ICT: Geogebra B1-5, C1-6, D1-12,17-19, E1-4, F3-7</p> <p><i>Short presentations by students</i> <i>Microteaching</i></p>
<p>8 (25 April-29 April)</p>	<p>Measurement & Geometry: Area & Volume</p> <p>B1-5, C1-6, D1-12,17-19, E1-4, F3-7</p> <p><i>Microteaching</i></p>
<p>9 (2-6 May)</p>	<p>Number & Algebra: Graphs</p> <p>Using ICT: Graphic software DESMOS B1-5, C1-6, D1-12,17-19, E1-4, F3-7</p> <p><i>Microteaching</i></p>
<p>10 (9-13 May)</p>	<p>Measurement & Geometry: Trigonometry</p> <p>What to expect on practicum.</p> <p>B1-5, C1-6, D1-12,17-19, E1-4, F3-7</p>
<p>Professional Experience</p>	
<p>11 (20-24 June)</p>	<p>Senior Syllabus: The General Mathematics Course</p> <p>B1-5, D1-12,17-19, E1-4, F3-7</p>

7. ASSESSMENT

Assessment Task	Length	Weight	Learning Outcomes Assessed	Graduate Attributes Assessed	National Priority Area Elaborations	Due Date
1. Short Presentations	10 mins	0%	3, 5, 6, 7, 8, 9	2.1, 2.5, 2.6, 3.1, 3.3, 3.4, 4.1, 6.3	A1-6 B1,2,4,5 C1-6, D 1-11 E1-4, F 3-7	Weeks 2,3,5,6,7
2. Literacy Materials for Teaching Mathematics	2500 words or equivalent	40%	1 – 8	1.2,1.3,2.1, 2.2,2.4,2.5, 2.6,3.1,3.2, 3.3,3.4,4.1, 4.2,6.3	A4-6, B1,2,4,5 C1-6 D1-12,17-19 E1-4 F3-7	Wed, 23 March 5 pm
3. Unit of work	3500 words or equivalent	60%	1 – 10	All listed attributes	A1-6 B1,2,4,5 C1-6 D1-12,17-19 F 1-4	Wed, 13 April 5 pm
4. Microteaching	10 mins	Satisfactory/ Unsatisfactory	1 – 10	1.2, 1.3, 2.1, 2.5, 2.6, 3.4, 3.3	A1-6, B1-5 C 1-6 D 1-12, 17-19 F 3-7	Weeks 5 -9

Submission of Assessment Tasks

Students are required to follow their lecturer's instructions when submitting their work for assessment. All assessment will be submitted online via Moodle by 5pm. Student no longer need to use a cover sheet. Students are also required to keep all drafts, original data and other evidence of the authenticity of the work for at least one year after examination. If an assessment is mislaid the student is responsible for providing a further copy. Please see the Student Policies and Procedures for information regarding submission, extensions, special consideration, late penalties and hurdle requirements etc.

Assessment Details

1. Short Presentation

Student 'Short Presentations' will occur in weeks 2, 3, 5, 6 and 7. Each student will be required to either present a solution/explanation to a mathematical problem or present a short lesson about a mathematical concept. The presentations are not to be lectures but should be seen as a segment from a mathematics lesson, pitched at the Year 7 - 10 level. Your peers will play the role of the class. These presentations will not form part of your assessment for this course but will give you an opportunity to practise skills such as eye contact, voice production and communication for your future compulsory Microteaching. Your lecturer and class will give you feedback about your level of skill.

a Presentation of a solution/explanation to a mathematical problem of your choosing.

If necessary, give the class 5 minutes to familiarise themselves with your problem, so they can attempt their own solution. Then, imagine that you were discussing the problem with (or teaching this content to) a Year 7 - 10 class. Take the class through the solution to the problem and any other materials (such as simpler versions of the problem, alternative solution strategies, etc.), which you feel are relevant. Consider the teaching strategies you will use, the questions you will ask, the language used and your use of ICT or white board summary.

OR

b A short lesson/explanation about a mathematical concept

Introduce the content you will be teaching. Briefly describe your target students (eg Year 7 students who are only at early stage 3 who also have poor literacy.) Consider the teaching strategies you will use, the questions you will ask, literacy and numeracy needs, your use of ICT or white board summary. In summation, explain to your peers why you chose to teach the concept this way.

A brief class discussion on your lesson segment will take place at the end of your presentation to give you feedback from the method lecturer and your peers. A **maximum of 15 minutes** is allowed for the whole episode of presentation and feedback.

These presentations are designed to give you a chance to develop your teaching skills and receive constructive feedback from the group. They provide an opportunity for students to practise and demonstrate the Graduate Teacher Standards.

2. Literacy Materials for Teaching Mathematics

Construct a bank of four different tasks that you could use to enhance the literacy of mathematics in the classroom at the Year 7 - 10 level. These could include cloze activities, barrier games, sequencing and/or matching activities, language scaffolds, reading or writing tasks. These tasks should be of your own creation, using the skills you have learnt in this course.

For each task:

- Describe the target group e.g. Year 8 class, low ability, average literacy skills, has a few ESL students.
- State your focus language and where applicable, use the 'Language' sections in the syllabus to help you to achieve this.
- Identify the point in the BOSTES, NSW Mathematics K - 10 Syllabus where this task would be most effectively used. Eg Prior to learning about hypotenuse (MA4 - 16MG, p.82).
- Describe the Mathematics that would flow from this literacy task, using the same syllabus as above.

Word count will vary depending on inclusion of mathematics and diagrams, so if you are unsure about this aspect, please ask your lecture for further clarification.

3. Unit of Work

Purpose

Plan a unit of work and briefly outline the appropriate lessons. Identify who the unit of work is appropriate for, and at what stage of their development and discuss how you would differentiate the unit to meet the varying needs of the students in the classroom. In particular, discuss the needs and teaching implications for the following groups of students; *non-English speaking students, Indigenous Australian students and students from the Pacific Islands, students from a diverse range of religious and cultural groups, students with challenging behaviours and students with special education needs.* Students must make reference to topics, concepts and readings from their courses.

Choose one topic eg. Teaching Fractions and Decimals (of approximately 12 - 15 sixty-minute lessons duration) from The NSW Mathematics Syllabus for the Australian Curriculum for Years 7 - 10 and design a unit of work to include the following four components:

1. A unit outline/program:
 - a. Describe the learning needs, prior knowledge and cultural composition of the class.
 - b. Detail your learning goals and why these goals are important.
 - c. Write a rationale which explains the teaching strategies you have chosen in order to achieve the learning goals.
2. One lesson plan:

Use the standard lesson plan proforma (see student handbook).
3. One related worksheet:
 - a. Include brief details of what the worksheet and ICT is designed to achieve and how it would be used in the classroom.
 - b. Use your ICT skills to prepare your worksheet ensuring that it is engaging for students.
4. A resource list for the topic:
 - a. Include resources other than school texts, particularly any appropriate ICT resources.
 - b. Explain how these resources could be used.

UNSW SCHOOL OF EDUCATION
 FEEDBACK SHEET
 EDST6725 MATHEMATICS METHOD 1

Student Name:

Student No.:

Assessment Task: Assessment 2- Literacy Materials for Teaching Mathematics

Specific criteria	(-) —————> (+)				
<p>Understanding of the question or issue and the key concepts involved</p> <ul style="list-style-type: none"> • Understanding of the task and its relationship to relevant areas of theory, research and practice. • Rationale linked to outcomes in the syllabus. 					
<p>Depth of analysis and/or critique in response to the task</p> <ul style="list-style-type: none"> • Ability to plan and assess for effective learning by using knowledge of the NSW syllabus documents or other curriculum requirements of the education act. • Reasons for the choice of teaching and learning strategies effectively explained. • Demonstration of knowledge, respect and understanding of the social, ethnic, cultural and religious backgrounds of students and how these factors may affect learning. • Demonstrates knowledge of resources that will engage and extend all students. • Sharing of helpful resources with your colleagues either via Moodle or in hardcopy. • Clear statement of syllabus outcomes. • Lesson goal(s) clearly linked to syllabus outcomes and chosen strategies • Effective use of student group structures to address teaching and learning goals. 					
<p>Familiarity with and relevance of professional and/or research literature used to support response</p> <ul style="list-style-type: none"> • Reference specifically to material, research and ideas presented in method lectures, readings from the prescribed text and other sources, relevant lectures from the combined method lecture series and from the professional experience lectures on diversity. • Reference all sources of your work including yourself if you are the author 					
<p>Structure and organisation of response</p>					
<p>Presentation of response according to appropriate academic and linguistic conventions</p> <ul style="list-style-type: none"> • Clarity and accuracy in use of key terms and concepts in mathematics teaching. 					
<p>General comments/recommendations for next time</p>					

Lecturer

Date

Recommended: /20 (FL PS CR DN HD)

Weighting 40%

NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualize and/or amend these specific criteria. **The recommended grade is tentative only, subject to standardisation processes and approval by the School of Education Learning and Teaching Committee.**

UNSW SCHOOL OF EDUCATION
FEEDBACK SHEET
EDST6725 MATHEMATICS METHOD 1

Student Name:

Student No.:

Assessment Task: Assessment 3 - Unit of Work

Specific criteria	(-) —————> (+)				
<p>Understanding of the question or issue and the key concepts involved</p> <ul style="list-style-type: none"> • Understanding of the task and its relationship to relevant areas of theory, research and practice. • Rationale linked to outcomes in the syllabus. 					
<p>Depth of analysis and/or critique in response to the task</p> <ul style="list-style-type: none"> • Ability to plan and assess for effective learning by designing a detailed lesson on the given proforma, using knowledge of the NSW syllabus documents or other curriculum requirements of the education act. • Lesson details include timing and questions /examples asked. • Reasons for the choice of teaching and learning strategies effectively explained. • Demonstration of knowledge, respect and understanding of the social, ethnic, cultural and religious backgrounds of students and how these factors may affect learning. • Demonstrates knowledge of resources that will engage and extend all students. • Clear statement of syllabus outcomes. • Lesson goal(s) clearly linked to syllabus outcomes and chosen strategies. • Effective use of student group structures to address teaching and learning goals. 					
<p>Familiarity with and relevance of professional and/or research literature used to support response</p> <ul style="list-style-type: none"> • Reference specifically to material, research and ideas presented in method lectures, readings from the prescribed text and other sources, relevant lectures from the combined method lecture series and from the professional experience lectures on diversity. 					
<p>Structure and organisation of response</p>					
<p>Presentation of response according to appropriate academic and linguistic conventions</p> <ul style="list-style-type: none"> • Clarity and accuracy in use of key terms and concepts in mathematics teaching. 					
<p>General comments/recommendations for next time</p>					

Lecturer

Date

Recommended: /20 (FL PS CR DN HD)

Weighting 60%

NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualize and/or amend these specific criteria. **The recommended grade is tentative only, subject to standardisation processes and approval by the School of Education Learning and Teaching Committee.**

HURDLE REQUIREMENT

4. MICROTEACHING

Microteaching is the planning, presentation and evaluation of a lesson over a shortened period of time (a 10 minute mini-lesson). It is a critical aspect of method as it provides students with the opportunity to demonstrate key competencies that must be achieved before student teachers are permitted to undertake Professional Experience 1, at the same time observing other student teachers and engaging in peer review. It is recommended that students read widely on effective classroom strategies and practise aspects of their mini-lesson with a small group of peers prior to assessment.

The assessment process will consist of the following two components:

1. A detailed **lesson plan using the prescribed template**, including a statement of expected learning outcomes
2. A 10 minute mini-lesson

Initial Lesson Plan: All students must submit to the method lecturer their proposed lesson plan at least one week prior to the presentation. If you are unsure of any aspect please discuss your plan with your lecturer after class in the previous week.

Microteaching: This will be assessed according to the attached criteria, and will be graded as **Satisfactory or Unsatisfactory**. Any student whose first microteaching episode is judged as unsatisfactory will be given a further (one only) opportunity to gain a satisfactory grade.

NOTE: If a student is assessed as unsatisfactory in microteaching s/he will automatically fail Method 1 overall, and not be permitted to undertake Professional Experience or any further method work in that teaching area until the key concerns have been resolved.

Microteaching Feedback Form For Pre-Service Teacher



STUDENT TEACHER			
Name:	zID:	Date:	
Method		Topic/level	
Standards	Comments		
<p>A. Teachers know their subject content and how to teach that content to their students (AITSL Standard 2)</p> <ul style="list-style-type: none"> Was the lesson or unit of work relevant to the needs of the students and based on the appropriate syllabus document requirements? (1.3.1, 2.3.1) Was knowledge of relevant concepts, topics and themes demonstrated, including ATSI perspectives? (2.1.1, 2.4.1) Were relevant linguistic structures and features and literacy /numeracy knowledge and skills integrated into the lesson? (2.5.1) Was a clear and coherent sequence of activities undertaken to engage and support the learning of all students within a class or cohort? (2.2.1, 3.2.1) Were the teaching resources and materials suitable for the aims of the lesson? (2.1.1) Were tasks required of students modelled and scaffolded? (2.1.1, 3.3.1) 			
<p>B. Teachers plan for and implement effective teaching and learning (AITSL Standard 3)</p> <ul style="list-style-type: none"> Were challenging yet realistic and achievable goals in teaching and learning activities planned? Were these explicitly articulated in the lesson plan/to students? (3.1.1) Were instructions, explanations and questioning techniques effective? (3.3.1) Were verbal and non-verbal communication strategies used effectively in the classroom to support student understanding of content and encourage participation and engagement of students? (3.5.1) Was students' understanding continually monitored and students' achievements of the learning outcomes noted? (3.6.1) 			
<p>C. Teachers create and maintain supportive and safe learning environments (AITSL Standard 4)</p> <ul style="list-style-type: none"> Was rapport with the learners established and responsiveness to their needs in the class demonstrated? (4.1.1) Were activities well organised and direction clear? (4.2.2) Was respect and appreciation of others demonstrated through active listening, being accessible to all students and exhibiting a caring attitude? (4.1.1, 4.4.1, 1.1.1) 			
<p>D. Teachers engage professionally with colleagues, parents/carers and the community (AITSL Standard 7)</p> <ul style="list-style-type: none"> Was there adequate in-class discussion and involvement that demonstrated the understanding and application of professional ethics and responsibilities? (7.1.1) Were contributions to other teachers' professional growth made in a positive manner? (7.4.1) Was constructive feedback provided to the presenting teacher to help improve their teaching practice? (7.4.1) 			
Comments: (See over page)			

Lecturer:

Date:

Satisfactory /Unsatisfactory (circle)

8. RESOURCES

Required Texts

Cavanagh, M., & Prescott, A. (2014). *Your professional experience handbook: A guide for preservice teachers*. Sydney: Pearson.

Goos, M., Stillman, G., & Vale, C. (2007). *Teaching secondary school mathematics: Research and practice for the 21st century*. Sydney: Allen & Unwin.

NSW Mathematics Syllabuses for stages 4, 5 & 6.

Required Readings

Jones, K., & Smith, K. (1997). Student Teachers Learning to Plan Mathematics Lessons. Paper presented at the 1997 Annual Conference of the Association of Mathematics Education Teachers (AMET1997). Leicester. 15-17 May 1997.

Further Readings

Anstey, M., & Bull, G. (2006). *Teaching and learning multiliteracies: Changing times, changing literacies*. Melbourne: Curriculum Press.

Attwood, B. (2005). *Telling the truth about Aboriginal history*. Crows Nest: All and Unwin.

Boaler, J. (2010). *The elephant in the classroom: Helping children learn and love maths*. London: Souvenir Press Limited.

Finger, G., Russell, G., Jamieson-Proctor, R., & Russell, N. (2006). *Transforming learning with ICT: Making IT happen*. Frenchs Forest: Pearson Australia.

Gibbons, P. (2002). *Scaffolding language, scaffolding learning: Teaching second language learners in the mainstream classroom*. Portsmouth: Heinemann.

Harrison, N. (2008). *Teaching and learning in indigenous education*, Melbourne: Oxford University Press.

Henderson, R. (2012). *Teaching literacies, pedagogies and diversity in the middle years*. Melbourne: Oxford University Press.

Hyde, M., Carpenter, L., & Conway, R. (2010). *Diversity and inclusion in Australian schools*. Melbourne: Oxford University Press.

Martin, K. (2008). The intersection of Aboriginal knowledges, Aboriginal literacies and new learning pedagogy for Aboriginal students. In Healy, A. (Ed.) *Multiliteracies and diversity in education: New pedagogies for expanding landscapes* (pp. 59-81). Melbourne: Oxford University Press.

Murray, M. (2011). *A very good literacy focus on mathematics (Books 1-8)*. Sydney: Mathematical Publications.

Palmer, S., Greenwood, D., Wooley, S., Goodman, J., & Vaughan, J. (2014). *Cambridge Mathematics NSW Syllabus for the Australian Curriculum, Year 10, Stage 5.1/5.2/5.3*. Cambridge University Press.

Powers, G. K. (2013). *Cambridge Preliminary Mathematics General (2nd ed.)*. Cambridge University Press.

Powers, G. K. (2013). *Cambridge HSC Mathematics General 1*. Cambridge University Press.

Powers, G. K. (2013). *Cambridge HSC Mathematics General 2 (2nd ed.)*. Cambridge University Press.

Price, K. (2012). *Aboriginal and Torres Strait Islander education: An introduction for the teaching profession*. Cambridge University Press.

Watson, A., Jones, K., & Pratt, D. (2013). *Key ideas in teaching mathematics: Research-based guidance for ages 9-19*. Oxford: Oxford University Press.

Recommended Websites

www.boardofstudies.nsw.edu.au (Students can download syllabuses from the Board of Studies website)

www.det.nsw.edu.au

www.curriculumsupport.education.nsw.gov.au/secondary/english/index

www.hsc.csu.edu.au

www.studentnet.edu.au/aispd/index.html

www.cecsw.catholic.edu.au

www.curriculum.edu.au

www.curriculumsupport.education.nsw.gov.au

www.aboriginaleducation.nsw.edu.au/index.html

www.nswteachers.nsw.edu.au

www.naplan.edu.au

www.acara.edu.au

Professional Associations

www.mansw.nsw.edu.au

www.aamt.com.au

www.austms.org.au

www.mathematiciansinschools.edu.au