School of Education

EDST6779
Mathematics 1

Term 1 2020

Contents

1. LOCATION

Faculty of Arts and Social
Sciences School of Education
EDST6779 Mathematics 1 (6 units of credit)
Term 1, 2020

2. STAFF CONTACT DETAILS

Course Coordinator: Kathryn Harris
Email: kathryn.harris@unsw.edu.au
Availability: Please email to arrange an appointment

3. COURSE DETAILS

Course Name	Mathematics 1
Credit Points	6 units of credit (uoc)
Workload	Includes 150 hours including class contact hours, readings, class preparation, assessment, follow up activities, etc.
Schedule Lecture/ Tutorial	http://classutil.unsw.edu.au/EDST_T1.html On Campus Thursdays 4:00-5:30pm (Face-to-face x 10 weeks) Online (Weekly activity requirements)

SUMMARY OF COURSE

This course introduces the continuum of mathematics learning K-6, with special emphasis on the transitions between Early Stage 1, Stage 1, Stages 2 and 3 and the transition into the Stage 4 syllabus. There will be a focus on number concepts prior to school entry, as well as the range of developmental understanding and student ability within most classes. The emphasis will be on pedagogical approaches and teaching strategies suitable for
        Developmental stages
        progress in numeracy
        understanding and application of mathematical concepts
        formative assessment.

AIMS OF THE COURSE
Successful completion of this course will prepare teachers for the teaching of mathematics by:

demonstrating their knowledge, skills and understanding of the foundation concepts of quantity, measurement, spatial representation, generalisation, estimation and mathematical reasoning and problem solving
examining the role and value of mathematics as a strand of STEM as well as its place in the broader school curriculum.

The course enables students to explore and gain understanding of the relationship between mathematics, numeracy and literacy. It will investigate the language of mathematical thinking and problem solving through the investigation ways of working with numbers and data (gathering, organising, representing processes and communicating results) with a direct emphasis of their application to real world situations relevant to the lives of primary age students.

STUDENT LEARNING OUTCOMES

Outcome	Assessment/s
1	

2.2.1	Organise content into an effective learning and teaching sequence	1, 2
2.3.1	Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans	1, 2
2.6.1	Implement teaching strategies for using ICT to expand curriculum learning opportunities for students	2
3.3.1	Include a range of teaching strategies	2
3.4.1	Demonstrate knowledge of a range of resources including ICT that engage students in their learning	2
5.1.1	Demonstrate understanding of assessment strategies, including informal and formal, diagnostic, formative and summative approaches to assess student learning	1
5.3.1	Demonstrate understanding of assessment moderation and its application to support consistent and comparable judgements of student learning	1
5.4.1	Demonstrate the capacity to interpret student assessment data to evaluate student learning and modify teaching practice	1
6.3.1	Seek and apply constructive feedback from supervisors and teachers to improve teaching practices	2

NATIONAL PRIORITY AREA ELABORATIONS

Priority area		Assessment/s
A. Aboriginal and Torres Strait Islander Education	4, 8,	1, 2

B. Classroom

4. RATIONALE FOR THE INCLUSION OF CONTENT AND TEACHING APPROACH

Students need to understand the scope and sequence of the NSW Board of Studies (2012) Mathematics K-10 syllabus and use it appropriately to select concepts, sequence and connect

6. COURSE CONTENT AND STRUCTURE

Modules

Lecture Topics and Content

This is an *indicative* course schedule and reading list. Refer to Moodle for the most current schedule and reading list. Throughout the course, the content *may*

purpose of money. Use real objects to collect, display and count. Compare size and quantity.

Exact v comparative language: *equal to, same as, more, fewer* (using arrays and randomised groups). Subtraction and addition as taking away/ adding in real contexts.

(NA) Addition and Subtraction   connected to count me in and the progressions

Module 8 30 April	Stage 1 (NA) Multiplication and division: Demonstrate fluency for rhythmic *skip* counting by 2s, 5s and 10s. Use equal groups to model *multiplication* groups of' equal *sets* with some *left over*. Demonstrate division means *sharing'*. Link multiplication by first dividing a collection and then recombining the groups. Stage 1 (NA) Patterns and Algebra: Use objects to represent counting patterns; describe repeated patterns as one, two or three patterns and relate to adding on by three; odd and even numbers.	Online component Due Wed 6 May
Module 9 7 May	Stage 1 (NA) Fractions: Apply halves, quarters and eighths to divide Compare different fractional parts: vertical, horizontal or area. Combine fractions to make a whole. Explore equivalence of fractions. Stage 1 (MG) Position: Use left/right from perspective of a person facing them. Give/follow simple directions using a diagram. Link to addition (forward) and subtraction (backwards). Stage 1 (SP) Chance: Use everyday model language to describe *chance* for events which are certain, likely, possible etc. Arrange words using opposites. Stage 1 (SP) Data: Use symbols for objects (including *tally* marks), recording displays of data, interpreting/explaining data displays using comparative/superlative language.	Online component Due Wed 13 May
Module 10 14 May	Revisiting the issue of diverse learners in mathematics. Recording progress and identifying conceptual gaps. Language of mathematics: Different ways of saying the same idea; moving from everyday language to more mathematical language, words used differently in non-mathematical contexts. Changing word problems to number sentences and inventing scenario to match a number sentence. Drawing word problems and number sentences. Supporting students in the transition to Stage 2.	*Reflection and On-line course evaluation*

7.

8. ASSESSMENT

Assessment Task   Length   Weight

Part 2: Student Work Samples (2000 words equiv)

A. Select **six** samples of student work (see Moodle):
      four samples for Number/Algebra <u>and</u>
      two samples for Measurement for Early Stage 1 and Stage 1

B. Annotate the samples to demonstrate evidence of student thinking. Analyse what the evidence is pointing to in terms of extending, consolidating or re-teaching. Consider the language and symbols
      -reflection

C. What written feedback would you use to h

Reflection: Student impact, knowledge extensions or gaps

Describe three ways in which you would assess the impact of your teaching in this KLA on your future students. If you have a specialisation in this KLA (e.g., a major in your undergraduate degree), describe how you could build on your advanced knowledge/skills to make improvements in student achievement in this KLA in your current school. If you do not have a specialisation in this KLA, identify three areas of your disciplinary knowledge /skills that require further development, and what strategies you will use to achieve that. Upload your 500-word response to Moodle before the end of the course.

Student Name: Student No.:

Assessment Task: 1

SPECIFIC CRITERIA	(-)				(+)

Understanding of the question or issue and the key concepts involved
        Outline what the student already understands and can already do in relation to Measurement.
        Include hands-on activities which require students to demonstrate and articulate an understanding of **capacity.**					

Depth of analysis and/or critique in response to the task Design of a 50-minute lesson plan that clearly indicates next steps for student learning					

Familiarity with and relevance of professional and/or research literature used

Student Name: Student No.:

Assessment Task: 2

SPECIFIC CRITERIA   (-)-------------------------➤