



# EDUC2580

## Mathematics in Schools

Session 2, In person-scheduled-infrequent, North Ryde 2022

*Macquarie School of Education*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Lecturer and Convener

Dung Tran

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Contact via Email

29 Wally's Walk Room 233

By appointment

Credit points

10

Prerequisites

40cp at 1000 level or above including ((EDUC1050 or EDUC105) or (EDUC1060 or EDUC106) or (EDUC1070 or EDUC107))

Corequisites

Co-badged status

Unit description

This unit is designed for intending primary teachers and intending secondary Mathematics teachers. It focuses on the factors affecting school students' learning of Mathematics. Three major themes are addressed: the meaning of selected basic concepts; how students learn these basic concepts; and how teaching can influence student learning. Lectures examine current research perspectives on learning and teaching Mathematics in schools, while tutorial classes provide opportunities for intending primary and secondary mathematics teachers to engage in group work and problem-solving activities.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

**ULO1:** Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.

**ULO2:** Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.

**ULO3:** Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics.

**ULO4:** Know and understand numeracy teaching strategies and their application in teaching areas.

**ULO5:** Demonstrate understanding of the content covered in lectures and tutorials.

## General Assessment Information

### Assessment Presentation and Submission Guidelines

Please follow these guidelines when you submit each assignment:

- Allow a left and right-hand margin of at least 2cm in all assignments.
- Please type all assignments using 12-point font and 1.5 spacing.
- All assessments must be submitted through Turnitin in .doc or .pdf format
- It is the responsibility of the student to ensure that all assessments are successfully submitted through Turnitin.
- Faculty assignment cover sheets are NOT required.

### Draft Submissions & Turnitin Originality Reports

- Students may use Turnitin's Originality Report as a learning tool to improve their academic writing if this option is made available in the unit.
- Students are strongly encouraged to upload a draft copy of each assessment to Turnitin at least one week prior to the due date to obtain an Originality Report.
- The Originality Report provides students with a similarity index that may indicate if plagiarism has occurred. Students will be able to make amendments to their drafts prior to their final submission on the due date.
- Generally, one Originality Report is generated every 24 hours up to the due date.

### Please note:

- Students should regularly save a copy of all assignments before submission.
- Students are responsible for checking that the correct file has been uploaded, that their submission has been successful, and that it has been submitted by the due date and time.

### Assignment extensions and late penalties

- In general, there should be no need for extensions except through illness or misadventure that would be categorised as serious and unavoidable disruption according to the University definition of same, see: <https://students.mq.edu.au/study/my-study-program/special-consideration>
- Applications for extensions must be made via AskMQ according to the Special Consideration policy. Extensions can only be granted if they meet the Special Considerations policy and are submitted via <https://ask.mq.edu.au/>. This will ensure consistency in the consideration of such requests is maintained.
- Students should keep an electronic file of all assessments. Claims regarding "lost" assessments cannot be made if the file cannot be produced. It is also advisable to keep an electronic file of all drafts and the final submission on a USB untouched/unopened after submission. This can be used to demonstrate easily that the assessment has not been amended after the submission date.
- **Late Assessment Submission Penalty**

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a mark of '0' (zero) will be awarded even if the assessment is submitted. Submission time for all written assessments is set at 11.55pm. A 1-hour grace period is provided to students who experience a technical issue.

This late penalty will apply to non-timed sensitive assessment (incl essays, reports, posters, portfolios, journals, recordings, etc.). Late submission of time sensitive tasks (such as tests/exams, performance assessments/presentations, scheduled practical assessments/labs, etc.) will only be addressed by the unit convenor in a Special Consideration application. Special Consideration outcome may result in a new question or topic.

### **University policy on grading**

#### **Criteria for awarding grades for assessment tasks**

Assignments will be awarded grades ranging from HD to F according to guidelines set out in the University's Grading Policy. The following descriptive criteria are included for your information.

## Descriptive Criteria for awarding grades in the unit

In order to meet the unit outcomes and successfully pass this unit, students must make a genuine attempt at all assessment tasks. Where any submitted assessment task is considered to be unsatisfactory in this regard, the highest possible final grade that can be awarded for the unit will be 45.

Students will be awarded grades ranging from HD to F according to guidelines set out in the policy: <https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/assessment-in-effect-from-session-2-2016>

The following generic grade descriptors provide university-wide standards for awarding final grades.

Grade	Descriptor
<b>HD</b> (High Distinction)	Provides consistent evidence of deep and critical understanding in relation to the learning outcomes. There is substantial originality and insight in identifying, generating and communicating competing arguments, perspectives or problem-solving approaches; critical evaluation of problems, their solutions and their implications; creativity in application as appropriate to the discipline.
<b>D</b> (Distinction)	Provides evidence of integration and evaluation of critical ideas, principles and theories, distinctive insight and ability in applying relevant skills and concepts in relation to learning outcomes. There is demonstration of frequent originality in defining and analysing issues or problems and providing solutions; and the use of means of communication appropriate to the discipline and the audience.
<b>Cr</b> (Credit)	Provides evidence of learning that goes beyond replication of content knowledge or skills relevant to the learning outcomes. There is demonstration of substantial understanding of fundamental concepts in the field of study and the ability to apply these concepts in a variety of contexts; convincing argumentation with appropriate coherent justification; communication of ideas fluently and clearly in terms of the conventions of the discipline.
<b>P</b> (Pass).	Provides sufficient evidence of the achievement of learning outcomes. There is demonstration of understanding and application of fundamental concepts of the field of study; routine argumentation with acceptable justification; communication of information and ideas adequately in terms of the conventions of the discipline. The learning attainment is considered satisfactory or adequate or competent or capable in relation to the specified outcomes
<b>F</b> (Fail)	Does not provide evidence of attainment of learning outcomes. ?There is missing or partial or superficial or faulty understanding and application of the fundamental concepts in the field of study; missing, undeveloped, inappropriate or confusing argumentation; incomplete, confusing or lacking communication of ideas in ways that give little attention to the conventions of the discipline.

Note: *If you fail a unit with a professional experience component, the fail grade will be on your transcript irrespective of the timing of the placement.*

## Withdrawing from this unit

If you are considering withdrawing from this unit, please seek academic advice via <https://ask.mq.edu.au> before doing so as this unit may be a co-requisite or prerequisite for units in the following sessions and may impact on your progression through the degree.

## Results

Results shown in iLearn, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](https://ask.mq.edu.au).

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Numeracy skills assignment</a>	50%	No	23:55 12/09/2022
<a href="#">Exam</a>	50%	No	Exam period

### Numeracy skills assignment

Assessment Type <sup>1</sup>: Case study/analysis

Indicative Time on Task <sup>2</sup>: 30 hours

Due: **23:55 12/09/2022**

Weighting: **50%**

This assignment is designed to develop your ability to interpret a child's mathematical understanding to produce a thoughtful and considered interpretation of the child's learning needs.

The task also allows you to relate your interpretation of the child's understanding to relevant mathematics education research literature and to consider learning and teaching activities that could support the child's mathematical understanding.

Word Count 2000

On successful completion you will be able to:

- Demonstrate knowledge and understanding of research into how students learn certain fundamental mathematical ideas and the implications for teaching.
- Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.
- Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics.
- Know and understand numeracy teaching strategies and their application in teaching

areas.

- Demonstrate understanding of the content covered in lectures and tutorials.

## Exam

Assessment Type <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 2 hours

Due: **Exam period**

Weighting: **50%**

The purpose of the final examination is to ensure that all students can demonstrate mastery of the content of the unit.

On successful completion you will be able to:

- Demonstrate understanding of the concepts, substance and structure of the content and teaching strategies of mathematics.
- Know and understand numeracy teaching strategies and their application in teaching areas.
- Demonstrate understanding of the content covered in lectures and tutorials.

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<sup>1</sup> If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

<sup>2</sup> Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

## Delivery and Resources

### Required texts

Reys, R., Lindquist, M., Lambdin, D., Smith, N., Rogers, A., Cooke, A., Bennett, S., Ewing, B., & West, J. (2022). *Helping children learn mathematics* (4th Australian Edition). Wiley.

### iLearn

- This unit has a web support presence on iLearn. Students will need regular access to a computer and the Internet to complete this unit.
- Weekly access to iLearn is compulsory for all students. Important assessment information will be posted there, as will other relevant unit notices and materials, including a reading template and guide to lecture note taking to assist your studies. Various activities and materials for discussion and critical reflection are included, and external students especially are encouraged

to use this web component. Electronic links and suggested references will be included in the Resources section. Please check the iLearn unit regularly.

## Lectures

Weekly lectures are delivered live and recorded and posted on iLearn. You must view or listen to and/or attend all lectures. Slides will be made available via iLearn after each weekly lecture.

## Structure

The unit comprises a one-hour (approx.) lectorial and two-hour tutorial per week. In the tutorial students will discuss issues and questions arising from the lectorials and prescribed readings. They may also engage in a range of practical tasks associated with the concepts introduced in lectorials. Students are expected to base their arguments/discussions on evidence from published research and other relevant material. Attendance at all tutorials is expected. Attendance at on campus days for Infrequent Delivery students is also expected. There will be a supporting website for the unit providing additional readings, links and materials.

Students are required to participate in group activities, whole class discussion, read the weekly material in advance, and to complete brief tasks either as individuals or in pairs or small groups. The weekly program for the course with the accompanying readings/ preparation will be available on the unit iLearn site.

## Infrequent delivery students

Students completing this unit via Infrequent Delivery mode are expected to follow the same processes for engaging with the unit's online content as for weekday students. Dates and times for Infrequent Delivery mode students to attend separate Saturday morning sessions for Science and Technology and Mathematics unit components will be posted on iLearn.

## Access and technical assistance

Information for students about access to the online component of this unit is available at [ilearn.mq.edu.au/login/MQ/](https://ilearn.mq.edu.au/login/MQ/). You will need to enter your student username and password.

Please do **NOT** contact the Unit Convenor regarding iLearn technical help.

No extensions will be given for any technical issues. Allow enough time for your submissions.

Assistance is available from IT Helpdesk ph: 1800 67 4357, or log a request at [help.mq.edu.au](https://help.mq.edu.au). OneHelp is the online IT support service for both students and staff.

### **This unit requires students to use several ICT and software skills:**

- **Internet access:** The iLearn site contains materials for this unit. It is also required for the online submission of all Assessment Tasks, and for Turnitin submission for ALL tasks.
- **Word processing, visual representations, and document formatting:** You are required to use an appropriate form of software to present your assignments.
- **Uploading** of assessment tasks to iLearn.



## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

Students seeking more policy resources can visit [Student Policies \(https://students.mq.edu.au/support/study/policies\)](https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au) and use the [search tool](#).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](https://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

## School of Education Procedures

In addition, the following policies and procedures of the School of Education are applicable in this unit.

### **Attendance for undergraduate units**

See the university timetable for information about when classes begin in this unit. <https://timetables.mq.edu.au/>

Activities completed during weekly tutorials (internal) or on campus days (external) are essential for building the core knowledge and/or skills required to demonstrate the learning outcomes of this unit [and to meet the AITSL Graduate Teacher Standards and/or ACECQA requirements]. Attendance at all tutorials or on campus days is expected and the roll will be taken.

Students are required to attend the tutorial in which they are enrolled. Any changes to tutorial enrolments must be completed officially through e-student. Please do not contact the unit convenor requesting a change.

### **Unit Expectations**

- Students are expected to read weekly readings before completing tasks and attending tutorials
- Students are expected to listen/attend weekly lectures before completing tasks and attending tutorials

Note: It is not the responsibility of unit staff to contact students who have failed to submit assignments. If you have any missing items of assessment, it is your responsibility to make contact with the unit convenor.

### **Electronic Communication**

It is the student's responsibility to check all electronic communication on a regular weekly basis. Communication may occur via:

- Official *MQ Student Email* Address
- The *Dialogue* function on iLearn
- Other iLearn communication functions

### **External Students**

- Information about the dates if the on-campus sessions can be found in the university timetable. <https://timetables.mq.edu.au/>
- The on-campus sessions are essential to student engagement and learning and

attendance on all days is expected. Failure to attend or to have an approved Special Consideration may result in a Fail grade for the unit. Please see attendance requirements in this unit guide.

- Prior to the on-campus sessions, you should have read the prescribed readings and listened to the lectures. Summarise the main points and make a note of the key terms and definitions. Prepare any discussion questions of your own that you wish to share.

Please make effective use of the online component of the unit and access iLearn regularly. Keep up to date with listening to the lectures on a weekly basis.

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

### The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)
- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

## Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

## Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## 5Rs Framework

The 5Rs Framework, developed by the School of Education at Macquarie University, is embedded throughout your teacher education course.

Your use of the 5Rs Framework will help you develop the capabilities that will make your teaching career sustainable and fulfilling.

In this unit, you will learn using the 5Rs framework in the following important ways:

- Doing research to build up your professional knowledge
- Reflecting on the research to make informed decisions about student learning.
- Understanding individual students' needs to design effective teaching.