



Essential Mathematics Levels 2-3

Overview and Key Features

Years 9 to 12 Learning 2020



The purpose of this paper

The purpose of this paper is to provide information regarding the overview and key features of the proposed *Essential Mathematics Level 2-3*.

It is designed to enable all interested stakeholders to reflect and provide feedback on key features including learning outcomes, structure, sequencing and likely content. This feedback will be considered in writing the draft course.

Consultation

Throughout the course development process there will be four opportunities for formal stakeholder consultation:

- Course Scope
- Structural Overview and Key features (Nov/Dec 2020)
- Initial Draft Course (March 2021)
- Final Draft Course (June 2021)

This paper represents the second of four course consultation points for teachers to engage in the course development process for *Essential Mathematics Level 2-3*.

Course Rationale

The *Essential Mathematics Level 2-3* course enables students to develop the mathematical competence to use mathematics effectively, efficiently and critically to make informed decisions in their daily lives. Essential Mathematics provides students with the mathematical knowledge, skills and understanding to solve problems in real contexts, in a range of workplace, personal, further learning and community settings. This subject offers students the opportunity to prepare for post-school options of employment, and further education and training.

This course will enable learners to develop the mathematical competence required to enter the workforce and contribute productively in an ever-changing global economy, and with both rapid revolutions in technology and global and local social challenges. This is a key factor in ensuring Tasmania and Australia's current and emerging needs are met as an economy competing globally requires substantial numbers of proficient workers able to learn, adapt, create, interpret, analyse and apply mathematical information.

Years 9 to 12 Curriculum Framework

[Years 9 to 12 Education Framework](#) informs the design of *General Mathematics* course and it fits within the Discipline-based focus area of the [Years 9 to 12 Curriculum Framework](#).

Pathways in

The *Essential Mathematics Level 2-3* course enables learning continuity from: Years 8-10 Australian Curriculum Mathematics. Additionally, learners who have undertaken the currently accredited TASC course Workplace Maths – MTW215120 could progress into this course at Level 3 or students who have undertaken the currently accredited Essential Skills – Maths – MTN210114 or Everyday Maths – MTE110114 could progress into Level 2 of this course.



Level 2

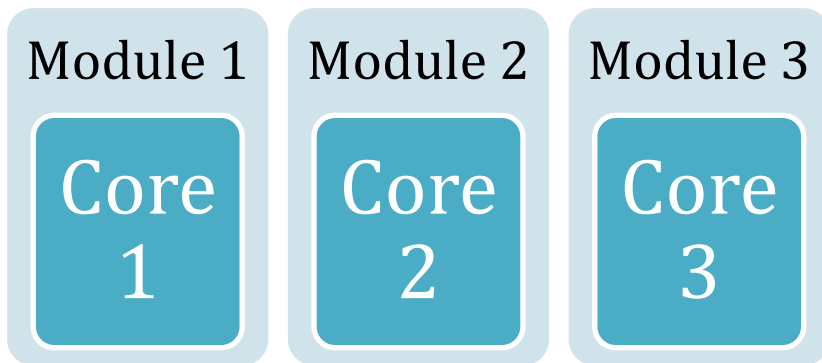
Learning Outcomes

On successful completion of this course learners will be able to:

- Communicate mathematical ideas, information and arguments purposefully and appropriately
- Use symbolic, formal and technical language and operations
- Apply metacognitive and reflective thinking to individual and collaborative learning experiences
- Select or devise and implement a mathematical strategy to solve problems
- Apply reasoning in order to justify or check justification of ideas, actions and results
- Interpret mathematical concepts and apply associated techniques
- Use mathematics to represent and model real-world situations and problems

Course Structure

Essential Mathematics Level 2 will consist of three compulsory modules that can be studied in any order or through an integrated approach. The three modules combined articulate all aspects of the Australian Curriculum: Essential Mathematics Unit 1 - 2. The three modules are as follows.



Modules Available

Core 1: Numeric Calculations and Techniques

Core 2: Measurement and Proportional Reasoning

Core 3: Data Representation and Interpretation

Course Delivery

To be developed through consultation.

Module content

Module 1: Numeric Calculations and Techniques - including the topics of:

- Calculations
 - Basic number operations
 - Percentages
 - Rates



- **Algebraic techniques**
 - Single substitution
 - General substitution
- **Percentages and finance**
 - Percentage calculations
 - Applications of percentages

Module 2: Measurement and Proportional Reasoning - including the topics of:

- **Measurement**
 - Linear measure
 - Area measure
 - Mass
 - Volume and capacity
 - Use of energy
- **Applications of rates and ratio**
 - Ratios
 - Rates
- **Time and motion**
 - Time
 - Distance
 - Speed

Module 3 - Data Representation and Interpretation - including the topics of:

- **Graphs**
 - Reading and interpreting graphs
 - Drawing graphs
- **Representing and comparing data**
 - Classifying data
 - Data presentation and interpretation
 - Summarising and interpreting data
 - Comparing data sets

Level 3

Learning Outcomes

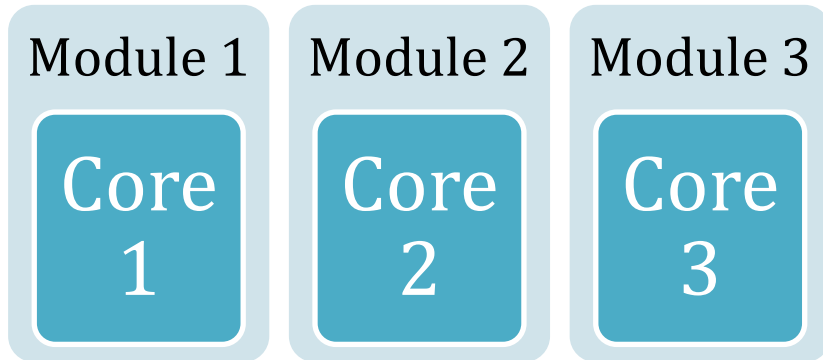
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- Select or devise and implement a mathematical strategy to solve problems
- Apply reasoning in order to justify or check justification of ideas, actions and results
- Interpret mathematical concepts and apply associated techniques
- Use mathematics to represent and model real-world situations and problems



Course Structure

Essential Mathematics Level 3 will consist of three compulsory modules that can be studied in any order or through an integrated approach. The three modules combined articulate all aspects of the Australian Curriculum: Essential Mathematics Unit 3 - 4. The three modules are as follows.



Modules Available

Core 1: Applications of Geometry and Finance

Core 2: Measurement

Core 3: Probability and Statistics

Course Delivery

To be developed through consultation.

Module content

Module 1: Applications of Geometry and Finance - including the topics of:

- **Earth geometry and time zones**
 - Location
 - Time
- **Loans and compound interest**
 - Compound interest
 - Reducing balance loans (compound interest loans with periodic repayments)

Module 2: Measurement - including the topics of:






- **Measurement**
 - Linear and area measure
 - Mass
 - Volume and capacity
- **Scales, plans and models**
 - Geometry
 - Interpret scale drawings

- Creating scale drawings
- Three dimensional objects
- Right-angled triangles

Module 3: Probability and Statistics - including the topics of:

- **Graphs**
 - Cartesian plane
 - Using graphs
- **Data Collection**
 - Census
 - Surveys
 - Simple survey procedures
 - Sources of bias
 - Bivariate scatterplots
 - Line of best fit
- **Probability and relative frequencies**
 - Probability expressions
 - Simulations
 - Simple probabilities
 - Probability applications

Relationship to possible Future Provision

| Focus Area | P | I | 2 | 3 | 4 |
|--|-------------|-----------------------|------------------------------------|--|---|
|  DISCIPLINE-BASED | | | General Mathematics | Mathematical Methods Specialist Mathematics | |
|  TRANSDISCIPLINARY | | | History of Mathematics (with HASS) | Applications of Discrete Maths | |
|  PROFESSIONAL STUDIES | | | Data Science (with Technologies) | | |
|  WORK-BASED | | | | | |
|  PERSONAL FUTURES | Mathematics | Essential Mathematics | Essential Mathematics | | |

Note: Subject to ongoing accreditation considerations in line with the Accreditation Framework