TEAC 1040 MATHEMATICAL PATTERNS AND RELATIONSHIPS (BLOCK)

Credit Points 10

Legacy Code 500072

Coordinator Rachel Renwick (https://directory.westernsydney.edu.au/search/name/Rachel Renwick/)

Description Students will use a variety of investigative techniques to highlight the evidence of patterns and relationships in mathematics. The inherent structure of mathematics will be approached through the examination of various mathematical systems. In addition, students will examine the nature of mathematical thought including inductive and deductive reasoning. This subject contributes directly to the achievement of a sound foundation in mathematics.

School Education

Discipline Teacher Education

Student Contribution Band HECS Band 1 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 1 subject

Equivalent Subjects LGYA 2716 - Mathematics 1 Patterns and Relationships LGYB 2441 - Mathematics for K-6 Teachers TEAC 1025 - Mathematical Patterns and Relationships (WSTC) TEAC 2041 - Mathematical Patterns and Relationships TEAC 1024 - Mathematical Patterns and Relationships

Restrictions

Students must be enrolled in 7181 Undergraduate Certificate in Early Childhood Studies

Learning Outcomes

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

1. Demonstrate and apply skills and understandings of number theory and numeration systems.
2. Demonstrate and apply skills and understanding of multiple representations and ways of calculating fractions and decimals.
3. Understand and apply calculations of factors and multiples.
4. Use patterns and relationships in number and their application to real life problems.
5. Recount the historical evolution of measurement systems.
6. Explain the basic feature of the metric system and the relationships between the Hindu-Arabic numeration system and the metric system.
7. Explain the mathematical patterns and relationships that can be found in space and geometry.
8. Apply basic geometrical concepts and principles.
9. Explain geometrical patterns and relationships in the environment.
10. Apply knowledge of the metric system to investigations of real-life problems.

Subject Content

1. Patterns and relationships in geometry:
   - environmental instances and applications
   - basic concepts, principles and relationships
2. Patterns and relationships in number:
   - number patterns in space
   - factors, multiples, prime numbers,
   - fractions and decimals
   - number patterns
   - number theory
3. Mathematical systems
   - transformational geometry
   - numeration systems
   - number systems
4. Mathematical reasoning
   - historical evolution of mathematical thought
   - inductive and deductive reasoning
   - the investigation of mathematical ideas
5. Measurement
   - basic features of the metric system
   - relationship to the numeration system the investigation of mathematical ideas

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
Presentation	4-5 minutes (500 words)	20	N	Individual
Applied Project	1,000 Words + Calculations/ Working Out	30	N	Individual
Professional Task	Part A: 1,000 Words + Calculations/ Working Out Part B: 300 Words	50	N	Individual