

Junior Cycle Mathematics Units of Learning

This unit was developed as part of a series of units which were discussed in the *Planning for Teaching Learning & Assessment: One School's Approach* webinar, a recording can be accessed at www.jct.ie/maths/planning_resources.

Concept: Relationships and Variables III

Development of understanding of the links between representations of patterns and generalised algebraic form (linear and quadratic) and consolidation of procedural fluency related to formulae including geometric formulae

Student Context: First Year students with some prior knowledge of patterns, relationships and variables

Learning Outcomes: AF1 (a), (b), (c), AF2 (a), (b), (c), AF3 a(i)&(ii), AF4 (a), AF7, N1 (a)

Key Learning: Learning outcomes from the Unifying strand are decided by the class teacher

- Students develop their understanding of situations where letters stand for quantities, including:
 - Additive and multiplicative models
 - Expressions of equality
 - Linear and non-linear relationships
 - Representations of relationships using words, tables and graphs
- Students analyse patterns (manipulatives, list, table, graphical, worded etc.)
 - In the case of linear and quadratic relationships be able to:
 - Identify the pattern type with justification
 - In the case of linear relationships
 - Develop the general term
 - Begin to examine relationships between the constants and variables
 - Model situations and solve problems in context
- Students represent linear equations graphically and solve them algebraically and graphically

Ongoing Assessment

- Can students identify various types of mathematical relationships (additive, multiplicative, linear, non-linear, proportional, non-proportional, inverse, quadratic) with justification?
- Can students develop the general term for linear relationships?
- Can students convert between mathematical representations and determine the improvements or limitations of various representations?
- Do students understand the concept of equality?
- Can students represent and solve linear equations graphically and algebraically?

Learning Experiences**Notes/Reflection**

Units are in development and are subject to change based on ongoing departmental consultation, collaboration and feedback.