

St Bede's College

Mathematics Faculty Response to Draft Curriculum

Overview of Changes from Mathematics perspective

Key Competencies of:

- Managing self
- Relating to others
- Participating and Contributing
- Thinking (problem solving)
- Using language, symbols and texts (Numeracy – specialist vocabulary)

Mathematics and Statistics (Learning Area)

Structure three strands:

- Number and Algebra
- Geometry and Measurement
- Statistics

Pedagogy

- Encouraging reflective thought
- Connections across learning areas
- Positive, thought provoking
- E-learning (maths use of ICT)

Curriculum design

- Outcome focussed
- Consider SEN and G&T
- Portfolios (maths file which passes through year levels)

Assessment

- Analyse and use information (Astle)

Mathematics Achievement Objectives (as attached)

Curriculum Levels

L1 (level 6)

L2 (level 7)

L3 (level 8)

Overall intent and direction of the document

Increase in the proportion of Statistics which reflects the increasing reliance on this area of Mathematics. Also a greater number of students are expressing an interest in this area, in particular at level 3 (new draft level 8).

Due to the increased emphasis on Statistical investigation and literacy i.e. from the current assessment content of 5 out of 24 credits at level 1 (new draft level 6) up to 1/3 of Mathematics programme under new curriculum, Number and Algebra have been reduced to accommodate the increase.

Combining Number & Algebra makes sense as the two strands are interdependent.

Encouragement of excellence is necessary and we assume that this will be considered as part of the regular review cycle following the implementation of the final NZ curriculum.

Clarity of the document

Some of the language is unfamiliar and further clarification will be needed i.e. '*Structural* similarities of different rules' Level 5 – Patterns

Level 3 Position and Orientation – are we introducing polar co-ordinates as a rotation-based co-ordinate system?

A support document with greater detail would be beneficial.

Impact

Utilising assessment data and focusing on outcomes should have a positive impact and encourage greater flexibility in programming.

Implementation Challenges

Cost

- Cost of new resources – texts based on new achievement objectives
- Increased use of ICT in maths will require projectors and software
- Greater variety in respect of pedagogy will require PD

Time

- Designing a curriculum – could be extensive. The use of exemplars and partnership with faculties from other schools will be necessary.
- Access to ICT hardware for entire classes such as computer labs.

Further issues for consideration as discussed in faculty:

- The 1/3, 1/3, 1/3 strategy means that over 1 term (10 + weeks) is devoted to statistics and probability, which at the moment takes up about 5-7 weeks.
- Clarify terminology such as "cleaning data".
- How does this fit in with the Numeracy program?
- Year 9 keep a focus on number skills then move to a more balanced approach.

- Fractions are a very important aspect that students struggle with.
- Reinforce the work by using a calculator.
- Things that were in statistics are now in calculus. How will it all fit in to a fixed time? Will things be removed from the curriculum?
- Use of examinations as tools to identify areas of strength and weakness, and implementing a strategy for relaying that to students.
- Using some of the revision time to have a second look at areas of weakness as discovered from the test / exam results.
- Do we reduce the number of standards offered in class, or do we reduce the depth of what we teach?
- Are universities being consulted about the content of the curriculum?
- Should *any* type of calculator be allowed? Are they strictly to be used as a learning tool, or can they become the process? What are the limits to acceptable use of calculators on assessments?

Mathematics Faculty

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