BALMORAL

Mathematics and Statistics

As reported by the OECD, learning is understood to be significantly shaped by the context in which it is situated and is actively constructed through social negotiation with others. It is widely recognised that the ultimate goal of learning and associated teaching is to acquire adaptive expertise, crucial for lifelong learning. Adaptive expertise goes beyond acquiring mastery of routine expertise. It is the ability to apply meaningfully learned, conceptual knowledge and skills, flexibly and creatively in different situations.
These principles form the foundation of our ambitious mathematics program.

OUR APPROACH TO TEACHING MATHS

Developing Mathematical Inquiry Communities

- evidence based
- builds conceptual understanding and adaptive expertise
- strengths based and high expectations
- develops a strong, positive mathematics identity for all students

WHAT DOES A MATHS LESSON LOOK LIKE?

- **Years 0-1** Play based Mathematical Inquiry learning

- **Years 2-8 -** Half the class works collaboratively in small groups whilst the other half are practicing the maths skills they have learnt independently.
  - **Launch**: An open-ended, group worthy problem is unpacked by the students
  - **Small group inquiry**: children work in small groups to solve the problem. Students are encouraged to use multiple representations and productive struggle is recognised.
  - **Sharing back**: groups are intentionally selected to share their thinking which connects to a big mathematical concept. Peers are encouraged to engage with the maths that is being presented to gain a deeper understanding.
  - **Connect**: teachers explicitly connect what the students' have shared to the big concept of Maths and generalises the concept to other contexts.
- Throughout the lessons teachers develop mathematical practices which are fundamental to the students engaging deeply with mathematics as mathematicians.

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The New Zealand Curriculum is divided into three elements: Understand, Know, Do.

UNDERSTAND

Big concepts in Mathematics:
For example numbers can be split apart and re-combined to have the same value.

KNOW

Concepts through the different contexts of: Number, Algebra, Measurement, Space, Statistics, Probability.
Teachers facilitate students to engage in active struggle with core mathematical concepts. Within these contexts, there is a clear learning trajectory driven by the curriculum.

DO

Mathematical Practices:
Investigating, representing, connecting, explaining, generalising, justifying, reasoning, communicating and modelling.
By using mathematical practices, students meaningful engage with Maths as Mathematicians. This enables students to develop a deep conceptual understanding which they can use flexibly and creatively in different situations.

ASSESSMENT

An assessment task is completed at the end of each Maths focus. This is used to look at the strengths of the child and to make an overall teacher judgement (OTJ).