

# St Philip Neri Catholic School Mathematics Policy

## **1. Introduction**

Mathematics is a mandatory Key Learning Area. The 2002 syllabus and the 2003 Sample Units of Work documents are the key resources. Mathematics plays a crucial role in the rapidly changing world we are living in. Children need to learn, develop proficiency in and become literate in mathematical thinking to become a successful member of contemporary society.

## **2. Purpose**

This policy is to provide a clear framework for the systematic teaching and learning of Mathematics at St Philip Neri Catholic School. The policy shall outline the content to be taught and developed conceptually as well as delineating the continuum of skill development in each of the five content stands and in the process strand, Working Mathematically. The policy makes explicit our commitment to Catholic Discipleship and core values outlined in the Diocesan Mission Statement. It reflects the identity of the school as articulated in St Philip Neri Catholic School Mission and Vision Statement.

## **3. Aim**

This policy aims to develop children's mathematical thinking, understanding, competence and confidence in the application of mathematics, their creativity, enjoyment and appreciation of the subject and their engagement with life long learning.

## **4. Beliefs about Teaching and Learning in Mathematics**

### **Belief 1**

*We believe all students have the capacity and the right to learn and the need to experience successful learning.*

Therefore

Whole school programs need to be continually monitored and evaluated to ensure that the children have experience of quality programs and successful learning.

### **Belief 2**

*We believe students are individuals who learn at different rates, with different strengths and with a variety of preferred learning styles.*

Therefore

Class programs need to be based upon authentic assessment and knowledge of individual learning needs.

### **Belief 3**

*Learning is life long, continuous, developmental and holistic; students need to learn how to learn and to actively evaluate their learning.*

Therefore

Proficiency in mathematics is best developed when skills and content are taught in a systematic, developmental, enquiry based, problem solving and holistic way.

### **Belief 4**

*Teaching and learning need to take place in a context of high expectations and in a positive, supportive environment.*

Therefore

The teacher needs to provide structures, scaffolds and challenging learning contexts where adequate and appropriate resources are provided and sufficient, dedicated time is allocated to the teaching and learning of mathematics.

### **Belief 5**

*Effective learning occurs when students are engaged in learning contexts that are collaborative and draw upon prior experiences, knowledge, understandings and skills.*

Therefore

Learning in mathematics is best when it occurs within a collaborative environment that structures group work and allows for the supportive and critical mutual sharing of experiences, skills and ideas.

### **Belief 6**

*Teaching is informed by explicit assessment and feedback, which in turn will inform future learning pathways.*

Therefore

Teaching programs are based on authentic assessment and evaluation.

### **Belief 7**

*Parents ought to be encouraged to be actively involved in their children's learning.*

Therefore

Parents need to be informed of the content of class programs and provided opportunities to deepen their understanding of the teaching and learning of mathematics.

## **5. Catholic Dimension of Mathematics**

At St Philip Neri Catholic School we are a community of disciples of Jesus who share our Catholic faith and life experience. Mathematics is an important part of the sharing, describing and celebrating the world through creation that God has blessed us with. In striving to build the Kingdom of God, the children will learn to use the values and attitudes, skills and knowledge of the Key Learning Area. The goal of developing productive and proactive Catholic disciples is furthered through the rigorous study and use of Mathematics.

## **6. Outcomes**

This policy shall ensure that: -

### ***the children will***

6.1 experience systematic teaching and learning of content in regard to Number, Space and Geometry, Data, Measurement, Patterns and Algebra.

6.2 develop skill in using and articulating the processes of working mathematically.

6.3 develop values and attitudes that reflect the relevance, enjoyment and appreciation of mathematics whilst considering Christian discipleship as well as cultural, environmental, spiritual and gender perspectives.

### ***the teachers will***

6.4 have a clearly articulated framework for the teaching and learning of mathematics.

6.5 have adequate resources for the effective teaching of mathematics.

6.6 participate in professional development opportunities offered by the Broken Bay diocese

### ***the parents and community will***

6.7 be informed as to the content of the mathematics curriculum at St Philip Neri Catholic School

6.8 provided opportunities to develop deeper understandings of how mathematics is taught.

## **7. References**

- ∞ NSW Board of Studies Mathematics Syllabus K-6 (2002)
- ∞ NSW Board of Studies Mathematics Sample Units of Work (2003)
- ∞ English K-6 & Mathematics K- 6 Syllabus Outcomes Classroom Assessment Resource Stage 2
- ∞ English K-6 & Mathematics K- 6 Syllabus Outcomes Classroom Assessment Resource Stage 3

## **7. Appendices**

### **A. Scope and Sequence**

Currently, St Philip Neri Catholic School uses the Scope and Sequence continuum as described on pages 28 to 37 of the NSW Mathematics Syllabus 2002.

Stage partners are to liaise on what has been taught to avoid repetition of content and that all Outcomes are addressed in each stage.

The future development of a Progress Map in Mathematics is an element of our Numeracy plan.

### **B. Programming Expectations c.f. Appendix 1**

All Teaching Programmes in mathematics at St Philip Neri Catholic School are developed from the NSW Board of Studies Syllabus K- 6.

Syllabus outcomes are to be stated explicitly in teacher's programmes

Working Mathematically underpins the three content strands. Processes to high lighted in each unit of work are to be highlighted and made explicit in programmes.

The effective teaching of Mathematics requires that all planned units and activities within those units are aimed at working towards achievement of the stated outcomes.

Teaching programmes of work ought to provide both quality modelling and explicit teaching of mathematic procedures, processes, language and ways of recording learning.

Ideally, teachers ought to seek to provide open ended tasks to enable a constructivist approach to the learning of mathematics.

Learning tasks are to be differentiated for those above and below the class level.

Teachers ought to always be alert opportunities across the curriculum for numeracy development.

The Programming proforma included as **Appendix 1** is intended as a guide and may be adapted to suit individual teacher's needs. In addition to the programmed tasks, teachers ought to include an organisational statement outlining how the mathematics classroom is organised and managed.

Programmes are to be formally evaluated in writing by each teacher at the conclusion of each term. This a summative process derived from ongoing evaluation.

## **C. Assessment and Reporting**

Planned outcomes must be assessed. Indicators of learning are to be used to describe student achievement.

Samples of children's work in each of the content strands are to be collected, annotated and included in each child's Portfolio each term. Portfolios are to be used as part of Parent/ Teacher reporting. Children are to be given the opportunity to develop the skills to self-reflect and take responsibility for their learning.

Assessment is a significant form of feedback to the children from the teacher about their learning.

The ongoing assessment of children and evaluation of the programme informs future planning and teaching practice.

Formal reporting to parents on individual children's progress in Mathematics occurs in June and November. Regular contact with parents is encouraged.

Use student's work samples to assess outcomes.

Data from the Basic Skills Numeracy Test used to inform teaching and learning K-6

## **D. Use of ICLT c.f. Appendix 2**

The use of ICLT to enhance the mathematics classroom is expected.

**Appendix 2** lists specific outcomes from the syllabus that have implications for the use of ICLT. ICLT is to be used as a tool with which to do mathematics and not as an end unto itself. Thus, the use of ICLT ought to be authentic.

## **E. Numeracy Plan**

Given the significant nature of mathematics, a Numeracy Plan has been developed to guide the ongoing development of mathematics at St Philip Neri Catholic School.

Principles that underpin this plan are:-

- ∞ that the Numeracy Plan outlines what needs to be addressed in the area of Numeracy and gives direction to the ongoing of Mathematics at St Philip Neri Catholic School
- ∞ that part of the school budget be allocated to Mathematics each year.
- ∞ resources are regularly reviewed and updated.
- ∞ Teachers and students have a variety of easily accessible, labelled maths equipment and technologies.
- ∞ students are encouraged to use equipment themselves and think and act independently.
- ∞ students are encouraged to use equipment to assist investigations and solve problems.
- ∞ resources are relevant, concrete and based on outcomes learning.
- ∞ text books are used as an adjunct to reinforce maths tasks and to expose students to a variety of learning materials. They will typically be used for homework purposes and for the reinforcement of concepts.
- ∞ that the Maths Key Reference teachers support each member of staff in the implementation of the Mathematics Policy.
- ∞ that there is ongoing staff professional development in numeracy.
- ∞ that teachers be provided with ongoing Professional Development

## **8. Evaluation of Policy**

Evaluation of this policy will take place every 2 years by the Mathematics Key reference teachers in consultation with the Principal, staff and students.

Time will be allocated to staff meetings for the Key Reference teachers and classroom teachers to discuss programming and classroom practice.