

# St Aloysius Catholic Primary School

## Chisholm



## Mathematics Policy

Last Reviewed

2015

Next Review

2019

## **ST ALOYSIUS CATHOLIC PRIMARY SCHOOL VISION**

***At St Aloysius Catholic Primary School we are called to be the face of Christ through living, loving and learning together. We dare to empower all to wonder, hope, thrive and be proud witnesses of our faith.***

### **RATIONALE:**

At *St Aloysius* the study of Mathematics provides students K- 6 with knowledge, skills and understanding in Number and Algebra, Measurement and Geometry and Statistics and Probability. It develops understanding, fluency, communication, logical reasoning, analytical thought and problem solving skills. These capabilities enable students to respond to familiar and unfamiliar situations by employing strategies to make informed decisions and solve problems relevant to their further education and everyday lives.

The study of Mathematics at *St Aloysius* enables students K-6 to develop a positive self-concept as learners of mathematics, obtain enjoyment from mathematics, and become self-motivated learners through inquiry and active participation in challenging and engaging experiences.

(Adapted from NSW Syllabus for the Australian Curriculum Mathematics K- 10 Syllabus P.13)

### **Catholic Dimension:**

Catholic Schools have a particular task of offering quality education in all areas of the curriculum and presenting that quality education as an expression of the Catholic worldview. Every curriculum area that is taught within a Catholic School has a religious dimension, a capacity to assist students to examine the world of human culture and the world of religion, providing knowledge and skills and fostering attitudes and values that are life-giving and that assist young people to search for meaning and truth.

The Catholic worldview is a comprehensive perception of the universe revealed in Jesus that provides insights into the meaning of life and how to live it.

The Catholic worldview is experiencing life through the eyes of our Catholic faith.

Catholic Schools transform the individual by informing the student about, and forming the student in, the Catholic vision and story. Catholic Schools offer opportunities for students to apply that worldview to all aspects of school life, and life outside school. The task for the teacher in the Catholic School is to ensure that all pedagogical and pastoral decisions in all key learning areas are founded in the Gospel of Jesus Christ and Catholic Social Teaching and offer students the experience and knowledge necessary to develop a distinctive Catholic way of being in and seeing the world.

Teachers will acknowledge that some children have been given the gift of logic shape and number. They will provide them with opportunities to express their talents through mathematical experiences, problem-solving and working in extension groups.

### **AIMS:**

At *St Aloysius*, Mathematics in Years K – 6 is taught to enable students to:

- Be confident, creative users and communicators of mathematics, able to investigate, represent and interpret situations in their personal and work lives and as active citizens

- Develop an increasingly sophisticated understanding of mathematical concepts and fluency with mathematical processes, and be able to pose and solve problems and reason in Number and Algebra, Measurement and Geometry, and Statistics and Probability
- Recognise connections between the Areas of mathematics and other disciplines and appreciate mathematics as an accessible, enjoyable discipline to study, and an important aspect of lifelong learning.

(Adapted from NSW Syllabus for the Australian Curriculum Mathematics K- 10 Syllabus P.16)

### **OBJECTIVES:**

Through the study of Mathematics students K-6 will develop **knowledge, skills and understanding** in the following strands:

#### **WORKING MATHEMATICALLY**

- Students develop understanding and fluency in mathematics through inquiry, exploring and connecting mathematical concepts, choosing and applying problem-solving skills and mathematical techniques, communication and reasoning

#### **NUMBER AND ALGEBRA**

- Students develop efficient strategies for numerical calculation, recognise patterns, describe relationships and apply algebraic techniques and generalisation

#### **MEASUREMENT AND GEOMETRY**

- Students identify, visualise and quantify measures and the attributes of shapes and objects, and explore measurement concepts and geometric relationships, applying formulas, strategies and geometric reasoning in the solution of problems

#### **STATISTICS AND PROBABILITY**

- Students collect, represent, analyse, interpret and evaluate data, assign and use probabilities, and make sound judgements

Through the study of Mathematics students K-6 will develop the following **values and attitudes**:

#### **Students:**

- appreciate mathematics as an essential and relevant part of life, recognising that its cross-cultural development has been largely in response to human needs
- demonstrate interest, enjoyment and confidence in the pursuit and application of mathematical knowledge, skills and understanding to solve everyday problems
- develop and demonstrate perseverance in undertaking mathematical challenges.

(Adapted from NSW Syllabus for the Australian Curriculum Mathematics K- 10 Syllabus P.16)

### **IMPLEMENTATION:**

#### **Personnel**

- The students of St Aloysius Primary School, Chisholm who are the focus of our Mathematics Programme.
- The classroom teachers are responsible for programming and teaching each of the Mathematics sub strands in accordance with the School's Scope and Sequence document.
- The St Aloysius Leader of Maths teacher who will be upskilled through Professional Development to lead the implementation of the new Australian Curriculum in NSW in Mathematics K – 6.
- Our Stage based Professional Learning Teams who meet weekly to plan learning and assessment experiences for all students across each Stage and analyse data to determine the effectiveness of this learning

### **Procedures**

- Each week / two weeks teachers will prepare a mathematics programme based on the NSW Syllabus for the Australian Curriculum Mathematics K- 10 Syllabus, which will follow the school scope and sequence. Essential content from the appropriate stage is to be covered each year of the stage as per the school scope and sequence, providing for review and consolidation. Additional content may be used as needed for extension
- Curriculum differentiation is an essential part of a teaching programme and ensures that adjustments are made to suit individual needs.
- Mathematics is taught in a continuous block of sixty minutes each day. The numeracy block follows a Balanced Numeracy Session format. (See Appendix 1)
- Teachers are responsible for embedding assessment opportunities throughout the mathematics programme.
- The K-10 Numeracy Continuum (DEC) supported by the learning framework in numeracy (LFIN) within Count Me In Too (CMIT) guides the continuous assessment and provides direction for teachers.
- Teachers will encourage students to “make their learning visible – say it, do it, draw it, write it” (Anita Chin)
- Teachers should draw on a variety of resources to help implement the mathematics programme.

### **ASSESSMENT**

Assessment is a significant part of the mathematics program, a variety of assessment activities should be carried out continuously during all stages of the teaching and learning cycle. Assessment should be designed to cater for all ability levels. Open-ended tasks in a variety of forms will allow children to demonstrate their abilities. In June and December teachers are required to award a Grade A – E based on the children's achievements for that semester. (Refer to Assessment Policy)

- Students are also tracked using the standardised ACER PAT Maths.

- Teachers are to observe and analyse what children do and how they represent their ideas.
- Teachers are to keep records of assessment data for each student including assessment criteria sheets to help them with programming, interviews and reports.
- Teachers are responsible for devising their own grading scale to use on their assessment criteria checklists.
- The K-10 Numeracy Continuum (DEC) supported Count Me In Too (CMIT) guides the continuous assessment and provides direction for teachers. Students will be placed on the Numeracy Continuum through individual assessment conducted by the classroom teacher;
  - Kindergarten Best Start Assessment provides initial student placement. The missing questions from SENA 1 may be administered at teacher's discretion
  - Students are tracked throughout K-6 using continuous assessment
  - Years 1 to 6 use continuous assessments, such as observations and work samples to move students along the Continuum
  - **SENA 1** is a valuable diagnostic tool for
    - students in years 2 – 6 who are working below stage level
  - **SENA 2** is a valuable diagnostic tool for
    - students in years 1 – 3 who show signs of performing above stage level
    - students in years 4 – 6 who are working below stage level
- In Years 3 and 5 the NAPLAN Test is given and results analysed for future planning in this curriculum area.

## **REPORTING**

Reporting takes place each Semester and students are awarded an A-E grade in Working Mathematically, Number and Algebra, Measurement and Geometry, and Statistics and Probability

## **RESOURCES**

Resources are catalogued and made easily accessible to the staff. They include:

- NSW Syllabus for the Australian Curriculum Mathematics K-10 **Syllabus** and Support Documents
- The Maitland- Newcastle Literacy and Numeracy Framework 2010
- NAPLAN Teaching Strategies
- Count Me In Too resources
- Teachers Manual
- Learning Framework in Number
- CMIT website
- DENS Stage 1
- DENS Stage 2
- ARC Website
- Numeracy Continuum website [www.numeracycontinuum.com](http://www.numeracycontinuum.com)
- A variety of concrete resources for maths are kept in classrooms and learning commons

- Teacher made resources & units
- Appropriate Online Resources

## **BUDGET**

Appropriate funds will be allocated annually from the school budget to allow for the successful implementation of this policy. Staff will prioritise the purchase of resources that are necessary to effectively implement the Mathematics Syllabus.

## **EVALUATION**

This policy will be reviewed every four years in keeping with the school policy review schedule or when Board of Studies or system requirements require a review

## **Appendix 1:** **The Balanced Numeracy Session**

### **Whole Class Warm ups**

**(5 Minutes)**

- Review and explore known skills and understandings across a range of substrands, whole number and patterns and algebra (quick quiz, games, pen and paper, championships)
- Identify and discuss common misconceptions
- Mental computation (using jump strategy, split strategy, compensation strategy, number patterns, decade counting, etc)

### **Prior knowledge and explicit teaching point**

**(5 minutes)**

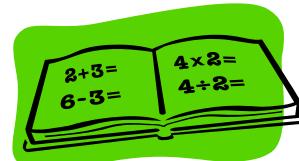
- What knowledge do the students already have about this topic?
- What is it you explicitly want the students to be able to do?



### **Modelled Teaching**

**(15 Minutes)**

- Explicitly teaching the lesson focus



### **Guided Teaching**

**(10 Minutes)**

- Opportunity for students to practice the lesson focus with some teacher guidance.
- Curriculum differentiation

### **Independent Activity**

**(10 Minutes)**

- Practice and consolidate learning individually



### **Mathematical Comprehension**

**(10 minutes)**

- Look at a NAPLAN style question using Newman's prompts.

### **Reflection**

**(5 Minutes)**

- Encourage students to share and reflect on their mathematical thinking (journaling, partner discussion of what they understand)
- Share highlights in thinking, more complex strategies, connections between mathematical ideas
- Discuss any problems that arise

- Further develop mathematical language
- Focus on developing mental strategies
- Focus on visualising concepts and solutions