NUMERACY TEACHING AND LEARNING

PURPOSE
At Nar Nar Goon Primary School we believe that mathematics influences all aspects of our lives. It is critical that our students understand the relevance of mathematics in their own lives and in the society in which they live. Our school aims to increase every student’s enjoyment and ability to understand the language and concepts of mathematics. We believe that students need a sequential mathematics program that will support them in making connections between mathematical concepts, language and the application to everyday life.

The teaching and learning of mathematics needs to be relevant to student’s experiences, interests and capabilities, and build on these as a springboard to further learning. Students must be immersed in mathematical language and experiences. These should be supported by the use of a variety of teaching and learning approaches, including real life applications and the use of concrete materials where necessary.

Teachers should provide a supportive and encouraging environment that allows students to take risks, ask questions and solve problems. This includes giving sufficient time to develop and revise concepts, and for thinking, reflecting, responding and sharing.

GOALS
Students are to:

- Develop a sound awareness of the base 10 number system and be able to master the underlying basic skills which will provide a base to support their future learning of mathematics,
- To be given a range of opportunities for hands-on activities, the use of concrete materials and ICT programs, and skill practice so that they can understand and make connections in their mathematics learning,
- Develop an inquisitive attitude towards mathematics and be encouraged to see mathematics as a part of their everyday lives,
- Develop a mathematical vocabulary and use it confidently and accurately,
- Confidently apply explicitly taught concepts to real life situations,
- Develop an appreciation and enjoyment of mathematics,
- Understand that mathematics is relevant to them personally and to the society in which they live,
- Acquire mathematical knowledge and ways of thinking so that they can confidently apply mathematics in real and abstract situations,
- Develop a range of strategies to become mathematical problem solvers,
- Understand that risk-taking and making mistakes are a part of their learning,
- Develop curiosity about the interrelationships of mathematical concepts,
- Develop skills in presenting and interpreting mathematical data,
- Learn to communicate mathematically to a range of audiences using a variety of tools and strategies,
• Understand and appreciate that mathematics can be used creatively and in different forms,
• Work independently with confidence, as well as being able to share understandings and ideas effectively in group situations,
• Value and be proud of their knowledge and strive to improve their understandings.

IMPLEMENTATION

Preface

At Nar Nar Goon Primary School, the implementation of our mathematics program is based around the key elements of Curriculum Programs, Planning, Teaching and Learning Approaches, Time Allocation and Resources.

Our teachers plan and implement a program based on the Australian Curriculum and aim to add value to the program by integrating mathematics into other curriculum areas where appropriate. There are a range of teaching and learning approaches used so that we can most effectively support children to make the connections between mathematical concepts and language, and their application to everyday life. Mathematics is a major part of the school’s curriculum program and as such teachers are expected to allocate significant time to its teaching and learning.

Curriculum Program
• All Year levels are to use the current 2013 Ausvels Mathematics Curriculum and beyond 2014, the Australian Curriculum, Mathematics Learning Area,
• The 3 strands of mathematics (Number and Algebra, Shape and Geometry, Statistics and Probability) are to be given appropriate explicit teaching and revision time and integrated to support each other where possible,
• All Year levels are to ensure that the mathematics program is sequential and targeted to the needs of the students in the area

Planning
• Teachers are to use the school’s Mathematics planning documents to guide lesson planning, see appendix
• Weekly planning is to clearly state lesson goals and be separated into strands and hours to assist daily organization,
• Teachers will plan collaboratively in their Area Teams, planning across all levels,
• Planned mathematics sessions can be modified as the need arises, including being personalized to suit the needs of individual students,
• A range of formal and informal data will be used to assist planning, particularly in evaluating the needs of individual students,
• Teachers are supported and encouraged to improve their knowledge and understandings as confident teachers of mathematics through professional learning opportunities and staff sharing sessions. All Area Teams have funds available for professional development.
**Teaching and Learning Approaches**

- All planned mathematics lessons will be based around a familiar and supportive structure of:
  - Tuning In,
  - Guided and Explicit Instruction (Whole Class),
  - Skill Development and Practice or Open Ended Learning Tasks (Small Group and Personalised),
  - Reflection (Whole Class)

- Students will be given opportunities to work independently and in pairs, in like ability and mixed ability groups, and in small teams to practice problem solving and share ideas and knowledge.
- Teachers will provide adequate concrete materials for those students who need them and to model their use in explicit teaching. Students will be encouraged to use concrete materials to support their understanding of concepts,
- **Flexible learning enables teachers to use a range of teaching and learning approaches and to utilise physical spaces to maximise the opportunities for all students to succeed.**

**Time Allocation**

- Teachers are expected to allocate a minimum of 5 hours per week to specific mathematics teaching and learning. Where possible, mathematics is to be timetabled on a daily basis.

**Resources**

- The Mathematics Resource Room is to be maintained to ensure that all concrete aids, materials and teacher resources are available for student and teachers to use to support their teaching and learning.
- All Year levels are to use the **Maths Plus textbooks (Oxford 2013)** across the school to assist in planning, and to ensure that all mathematical content is covered through a sequential and common program,
- All students are to have access to concrete materials to support the development of their skills and understandings. These materials are available in classrooms and in the Mathematics Resource Room,
- ICT and Interactive Whiteboards resources (such as: Studyladder, Rainforest Maths, Galaxy Kids) are used to provide explicit teaching, engage students, and to support skill practice,
- Australian Curriculum documents, relevant websites (Maths Association of Victoria) and teacher resource texts can be accessed online to assist in lesson planning ideas.
EVALUATION

Preface

At Nar Nar Goon Primary School, the evaluation of our mathematics program includes data and reflection from individual teachers, students, area teams and whole staff discussions.

Evaluation is ongoing and consists of formal testing, as per our whole school evaluation schedule, and teacher assessment and anecdotal information. Progress is evidenced through pre and post testing, anecdotal records and annotated work samples. We believe that teachers need time to reflect on their planning and teaching in mathematics and discuss this with their teams and other members of staff. Students also need time to reflect on their understandings with their teacher and fellow class members.

Teachers work individually and in level teams to discuss and evaluate individual children, and to plan for future teaching and learning experiences. Teamwork is essential in ensuring we continually reinforce and extend our students’ understanding in mathematics.

The Numeracy Policy will be evaluated on a yearly basis by staff to assess how relevant and successful it is in meeting the needs of the school.

Assessment

All teachers are expected to use a range of evaluation and assessment tools including:

- Diagnostic testing from Maths Plus (Oxford) text books at the end of each term,
- Pre and Post testing to assess goals of lessons/units met,
- Informal assessing student’s knowledge and understanding through discussions with students,
- Collecting work samples and test results completed during class activities and retained in student files,
- The use of anecdotal notes taken and recorded using programs such as Googledocs,
- Use of On Demand testing for Years 2-6 (twice yearly)
- Use of PAT testing for Years 2-6 (yearly)

NOTE:

- Area teams and curriculum meetings will focus on teacher moderation of student progress to ensure consistent and accurate teacher judgments. This will involve developing teacher understanding of progression points through aligning these with work samples and formal assessments throughout the school,
- Student records and documentation will be passed on to future teachers, and
- Students at-risk will be noted and area teams will be expected to plan specifically for their needs.
• All levels of the school will follow the school Assessment Schedule for Mathematics, (see appendix)

Planning

When planning, area teams are to utilise all forms of collected data to assist in planning and targeting teaching to meet the needs of students. This will include:
• Using anecdotal records to set individual goals for students,
• Identifying students at-risk and those with extended potential. Programs will be structured to assist growth and development of these students, and as a group, they will be tracked throughout schooling,
• Accessing data generated through school SPA program which will be used by area teams to inform future direction and assess program aims,
• Teachers moderating during planning discussions,
• Ensuring teacher’s mathematics planners have specific goals that can be evaluated at the end of lessons,
• Students being given the opportunity to provide feedback using appropriate tills, where appropriate, at the end of activities,
• Area teams meeting regularly to reflect on how planning and implementation in the classroom is working and on student progress.

This Policy was ratified by School Council on