

<b>Bundoora Primary School Policy</b>	<b>CURRICULUM POLICY Mathematics</b>	<b>October 2017</b>
<i>Not Negotiable agreements for consistent Mathematics teaching and learning approaches throughout the school</i>		

### **Rationale**

Mathematics learning and competence is central to the learning and development of all young Australians. A mathematics program provides comprehensive coverage of content descriptions from the three strands of the Mathematics curriculum and is sequenced to develop knowledge and skills. The proficiencies of Understanding, Fluency, Problem Solving and Reasoning are fundamental to learning mathematics and working mathematically, and are applied across all three strands Number & Algebra, Measurement & Geometry, and Statistics & Probability. Mathematics provides students with access to important mathematical ideas, knowledge and skills that they will draw on in their personal and work lives.

### **Aims**

The Bundoora PS Mathematics program aims to teach students to:

- Develop critical mathematical and numeracy skills for everyday life, work and as active and critical citizens in a technological world
- Acquire specialist knowledge and skills in mathematics that provide for further study in the discipline
- Make connections and apply mathematical concepts, skills and processes to pose and solve problems in mathematics and in other disciplines and contexts
- Improve student outcomes
- Engage students by encouraging more interaction to help express mathematical concepts as well as having a positive learning environment

### **Broad Guidelines**

Bundoora PS staff will:

- Plan mathematics learning sessions that are engaging and targeted to each student's Zone of Proximal Development and ability (differentiated learning)
- Use Numeracy Scope and Sequence documentation to focus their teaching on improving mathematics outcomes
- Follow the **Bundoora PS Assessment Schedule**, as well as individual and diagnostic testing, and use collected data to inform and adjust teaching and learning strategies and content
- Moderate and triangulate data (for, as and of learning) to inform teaching and to report to parents/carers against the Victorian Curriculum F-10 Achievement Standards
- Communicate high expectations of student achievement to students and parents/carers
- Consider the cultural and socio-economic backgrounds of students when planning mathematics sessions
- Identify and refer students for participation in mathematic intervention groups
- Core strategies will be targeted, notably by the "Maths Intervention Clubs" which have been developed to master the essential mathematical strategies
- Identify and refer students for extra Individualised Learning Programs (I.L.P.s)
- Share skills and content knowledge through collaborative discussion and planning
- Use classroom support staff (if available) to ensure success for all students, specifically for students who are funded through the Disabilities Program, or who require targeted assistance to progress

## Implementation

Bundoora PS Staff will include:

- A minimum of 5 hours of mathematics in their curriculum planning each week (200 hours per year) i.e.
  - 5 daily 1 hour mathematics sessions. (It is noted that skills may be integrated into other curriculum areas)
- Structured, explicit and sequenced sessions that cater for one-to-one and/or small group and whole settings
  - An explicit 'learning intention' for each mathematics lesson – evidenced in weekly planners, term planners and led by the relevant Scope and Sequence document
  - Flexible student groupings based on data
  - A full range of available and appropriate technology in their planning
  - Utilise concrete materials as a core strategy

## Lesson Structure

Bundoora PS Staff will follow the Region based – Achievement Improvement Zones lesson structure:

- Warm up/tune in game activity, (this will be the same for the week)
- Launch with the 'learning intention'
- Explore activities – incorporating ongoing student reflection
- Summarise and reflect

N.B. This model will be altered according to the needs of the students. Specifically, the typical mathematics learning session will include:

<b>Mathematics</b> 5 hours every week	Introduction and <i>Learning Intention</i> discussed and modelled <ul style="list-style-type: none"><li>• Goals – what is expected, discussed and explained</li><li>• Warm up activity e.g. Clubs, problem solving, game, counting or mental math sheet</li><li>• Whole class instruction</li><li>• Activities aimed for differentiated working such as small groups or learning stations</li><li>• Whole class revision, correcting and problem solving</li><li>• Mathematics tasks and revision and testing practising</li></ul>
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## Classroom Practice

Bundoora PS teaching staff will:

- Refer to "[Teaching Primary Mathematics Ed. 5 by George Booker](#)" for advice on the implementation and scaffolding of skills taught
- Implement a mathematical task every day, in order to progress and scaffold students' skills
- Use the "Targeting Maths" teaching books as the main resource for planning a comprehensive Maths curriculum based on the Victorian Curriculum F–10 achievement standards in mathematics
- Provide targeted teaching to assist all students to understand and achieve the Learning Intention
- Ensure time on task is purposeful and maximised e.g. Task relates directly to the Learning Intention

- Utilise the “fishbowl” method when demonstrating new games and activities
- Use the Lesson Structure as detailed above
- Rove consistently to provide purposeful feedback throughout each session
- Provide opportunities for differentiated tasks (at least three levels)
- Make explicit connections between related concepts
- Encourage and support all students to set high personal learning goals which will progress their learning
- Provide explicit vocabulary and knowledge focus in all lessons

### Assessment and Reporting

Bundoora PS staff will:

- Regularly monitor student progress and make teaching and learning adjustments as required
- Follow a whole-school approach to communicating and reporting on evidence of student progress in mathematics
- Use the Victorian Curriculum F-10, Targeting Maths teaching books and Scope and Sequence, MOLI (Maths On Line Interview) data, PAT (Progressive Achievement Tests) data, NAPLAN (National Assessment Program Literacy and Numeracy) data, Mathletics and On Demand Data, as well as other data sets (Diagnostic tests), to assist in making accurate teacher judgements and systematically use data to report on student outcomes
- Refer to the agreed whole school Assessment Schedule for testing requirements, sequence and dates
- Complete individual MOLI assessment sheet to be attached to student records and passed onto subsequent class teachers
- Moderate student work samples to establish evidenced and uniform decisions about student achievement
- Communicate student progress to parents/carers, including ways they can provide support at home
- Use feedback from parents, students and staff in support of improved student learning outcomes

### Professional Development

Bundoora PS staff will attend Professional Learning Team meetings to reflect on and improve their teaching strategies by:

- Discussing concerns regarding student achievement and collaboratively discussing strategies to progress learning
- Reporting back on the progress of students participating in mathematics intervention or extension
- Discussing explicit teaching strategies that will be used by all teachers e.g. Intervention clubs
- Planning the next stage of learning for identified groups of students
- Sharing learning from external professional development sessions
- Communicating expectations and evidence of numeracy development to parents/carers and families, including ways they can maintain support
- Organising incursions involving math specialists and mathematical knowledge
- Attending external P.D. to improve math knowledge and skills

### Evidence to be collected

The following evidence of mathematics achievement will be collected by each class teacher and passed on to the next teacher at the end of year handover session:

***N.B. Include Assessment table from Semester 2 reports at all Levels Prep-6***

Foundation	<ul style="list-style-type: none"> <li>• EYOLN</li> <li>• Diagnostic Tests</li> </ul>
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Year 1/ 2	<ul style="list-style-type: none"> <li>• MOLI Assessment Sheets</li> <li>• Diagnostic Tests</li> <li>• Checklists</li> </ul>
Year 3/ 4	<ul style="list-style-type: none"> <li>• PAT Maths tests 1 &amp; 2</li> <li>• Diagnostic Tests</li> <li>• MOLI Assessment Sheets</li> <li>• On Demand tests</li> <li>• NAPLAN</li> <li>• Mathletics Assessments</li> </ul>
Year 5/6	<ul style="list-style-type: none"> <li>• PAT Maths tests 3 &amp; 4</li> <li>• Diagnostic Tests</li> <li>• MOLI assessment sheets</li> <li>• On Demand tests</li> <li>• NAPLAN</li> <li>• Mathletics Assessments</li> <li>• Fraction and decimal test</li> </ul>

### Resources

The following resources will be used across the school, to ensure consistency in mathematics teaching methods, professional dialogue and student achievement: Resource in bold is the chosen resource to base all planning on. The C.D.s will be copied and placed on Staff Share and stored in the library.

Foundation level (Prep)	<b>Targeting Maths Foundation</b> <b>Teaching Primary Mathematics Edition 5 by G Booker</b> Nelson Foundation Mathletics
Year 1/ 2	<b>Targeting Maths books 1 &amp; 2</b> <b>Teaching Primary Mathematics Edition 5 by G Booker</b> Nelson Maths 1 & 2 Maths Plus 1 & 2 Mathletics
Years 3/4	<b>Targeting Maths book 3 &amp; 4</b> <b>Teaching Primary Mathematics Edition 5 by G Booker</b> Nelson Maths 3 & 4 Maths Plus 3 & 4 Mathletics
Years 5/6	<b>Targeting Maths book 5 &amp; 6</b> <b>Teaching Primary Mathematics Edition 5 by G Booker</b> Targeting Maths Mental Maths book 5 & 6 Nelson Maths 5&6 Maths Plus 5&6 Mathletics

### Evaluation

This policy will be reviewed in consultation with all staff members as part of the school's review cycle. It will also be provided as part of induction material for each new staff member involved in the delivery of teaching and learning programs.

Date of approval at School Council:

Review date:



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Primary School