Mathematics aims to instil in students an appreciation of the elegance and power of mathematical reasoning. Mathematical ideas have evolved across all cultures over thousands of years, and are constantly developing. Digital technologies are facilitating this expansion of ideas and providing access to new tools for continuing mathematical exploration and invention.

(Australian Curriculum – Rationale)

At St. Joseph’s we believe that mathematics is an integral part of everyday living. It impacts on a myriad of daily personal, vocational and civic activities. Mathematics occupies a unique, vital and central position within the framework of our school curricula. Its global application and universality makes it an essential element for individuals to enable them to participate fully in society. The importance of giving individuals the opportunity to think, reason and work mathematically is critical in the life long development of the learner. Promoting the expansion of mathematical skills and knowledge as well as engaging in a range of life related investigations should allow for the identification and realization that mathematics situations are ever present in our daily lives. Through exposing individuals to situations that allow learners to ‘know about’, ‘know how to’ and ‘know when, and where to use mathematics’ should help in unlocking and interpreting mathematical information.

• The collaborative construction of the St Joseph’s Mathematics program clearly defines that teachers have the responsibility to provide opportunities for learners to:
  • Learn mathematics in real life, purposeful learning situations in order to become life long problem solvers;
  • Learn mathematics in a way that allows them to confident;
  • Apply what they learn in varying contexts and to experience a sense of accomplishment and enjoyment in these applications;
  • Be challenged to experiment and take risks with its use;
  • To receive ongoing and supportive feedback which allows them to progress in their learning;

As a school, St Joseph’s acknowledges the need to facilitate experiences where:
  • The learning of mathematics is in context and for real purposes;
  • The use of mathematics is in flexible learning situations;
  • There is variety, continuity and balance in opportunities across all year levels;
  • There is integration of mathematics teaching into all learning areas
  • Collaborative planning and evaluation of programs, units, learning experiences and resources is highly valued;
  • A range of assessment types and techniques are employed.

In implementing these opportunities through the construction of the Mathematics Program, consideration has been given to the cultural and social context of the school community, the needs which arise from individual differences of learners as well as fostering student responsibility for and reflection upon mathematical learning.
Mathematics Lesson Structure

Within a **Balanced Numeracy Program** we can provide all learners with:

• Opportunities for all children to explain their mathematical thinking (metacognition)
• A variety of learning opportunities
• A range of representations of the same concept
• A balance of explicit teaching, jointly constructed understandings and independent learning
• A growing sense of mastery in numeracy

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**Mental Maths**
The numeracy block starts with the whole class working together. This is a warming up or tuning in experience where students work together on a strategy or skill that will be developed further in the whole class activity.

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**Whole Class Teaching**
The whole class focus builds a community of mathematics learners focused on a common aspect of numeracy. This may be a modelled approach where the teacher introduces or revisits a new concept. It could also be a shared approach where the teacher and students jointly work through the process. When using a shared approach the teacher prompts students, questioning and supporting them as they reinforce, modify and extend their skills and understandings.

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**Reflection**
• emphasise connections
• encourage sharing of strategies
• make the mathematics explicit
• raise challenges
• promote a language to talk about mathematics
• encourage students to reflect on what they have learned, how they learned and what assisted them in their learning.

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**Rotational Activities**

**Guided Maths**
Guided maths involves the teacher guiding a small group of students with like needs as they think, talk and work their way through a mathematical experience. Following a brief introduction by the teacher, students have the opportunity to choose strategies and materials they will use. The teacher elicits responses from the students to determine their concept development (and misunderstandings!) – it has to be more than “I did it in my head”.

**Independent Maths**
Independent maths follows directly after a guided maths session where students work individually with the teacher prompting and helping at each student’s point of need. Students engage in independent mathematics directly related to the work they were doing in their small teaching group.

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**Recommended Best Practice**