



Mathematics Policy

Western Australian Curriculum Rationale:

“Learning mathematics creates opportunities for and enriches the lives of all Australians. The Western Australian Curriculum (Mathematics) provides students with essential mathematical skills and knowledge in Number and Algebra, Measurement and Geometry, and Statistics and Probability. It develops the numeracy capabilities that all students need in their personal, work and civic life, and provides the fundamentals on which mathematical specialties and professional applications of mathematics are built”- School Curriculum and Standards Authority (SCSA).

Aims:

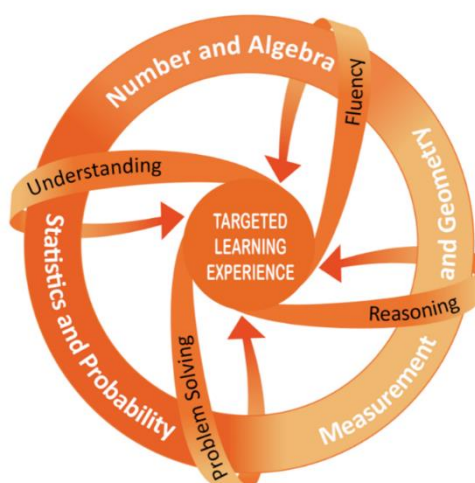
Our school adopts the aims of the Western Australian Mathematics Curriculum. We strive towards ensuring that our students:

- Are 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 processes, and are 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 and enjoyable discipline to study.

Planning, Assessment & Reporting:

The three content strands of Number and Algebra, Measurement and Geometry, and Statistics and Probability together with the four proficiency strands of Problem Solving, Reasoning, Understanding and Fluency define the mandated Western Australian Mathematics Curriculum. Students must engage with both the content and the proficiencies in order to become flexible, creative and critical problem solvers and mathematical thinkers

(SCSA)



At KPS, planning of Mathematics is supported by the use of the SCSA Mathematics Teaching and Learning Exemplars. These support materials provide examples of approaches to teaching, learning and assessment using the Western Australian curriculum and Achievement Standards and are reflective of the Principles of Teaching, Learning and Assessment. In addition, our teachers draw upon First Steps in Mathematics, a whole school approach to problem solving and a clear lesson design, ensuring that students are provided with opportunities for explicit instruction, guided and independent practise. Our teaching staff recognise that a consistent approach is integral across all year levels and, therefore, adopt a collaborative model of planning and assessment within year level Professional Learning Communities.

Student assessment and data collection forms an integral part of our processes to identify student learning needs and cater for all student ability levels, therefore providing opportunities for all students to achieve success in Mathematics. KPS teachers regularly utilise the Response to Intervention Model within classrooms and year level cohorts to inform effective, high-quality and targeted instruction for all students.

Each year level has specific standardised and informal assessments at specified intervals throughout the school year, as outline on the KPS Assessment and Reporting Schedule. Assessment in Numeracy includes:

- PAT Mathematics Assessment (Year 1-6)
- Westwood One Minute Basic Facts Test (Year 1-6)
- Paul Swan Basic Facts Assessment (Year 2-6)
- First Steps Mathematics Map of Development (K-6) and KPS created First Steps Map of Development checklists (K & PP)
- On-Entry Assessment (PP)
- NAPLAN Data
- Diagnostic Tasks
- Rich Tasks and Common Assessment Tasks
- Mathletics Online Assessment
- SAIS Data/Formal Reporting to Parents (per semester)

Instruction:

- Mathematics learning requires a daily block of time dedicated to targeted instruction and practise. At KPS, Mathematics is timetabled for a block of at least **55 minutes per day**.
- The integration of Mathematics learning into other curriculum areas is strongly encouraged, with a particular focus on the provision of rich STEM (Science, Technology, Engineering and Mathematics) opportunities for all students within Kindergarten to Year 6.
- The Mathematics Program is underpinned by a whole school approach to use of manipulative resources and essential 'hand on' materials to support student learning of mathematical concepts and skills. Each classroom has an 'Essential Resource' box containing flexible materials that can be used in various ways to support learning across all domains of Mathematics. Examples include; dice, counters, playing cards, pocket-dice etc. In addition, teachers can access shared materials located within each classroom block and within the school library.
- Basic facts and mental computation is taught explicitly, following the K-6 Kinross Scope and Sequence document with differentiations made to suit individual needs of students.
- Mathematical vocabulary is taught following Kinross K-6 Scope and Sequence document to develop a consistent approach to the teaching of key terms. Teachers also refer to the KPS Vocabulary Menu Board to provide continued learning opportunities to engage in rich use of Mathematical vocabulary across varying contexts and activities.
- We utilise a whole school approach to problem solving informed by Dr Paul Swan and Polya's Four Step Problem Solving Process. At Kinross we refer to the acronym CUBES throughout each year level as a common strategy to assist students in solving worded problems.
- Teachers refer to the KPS Lesson Design format in planning and providing explicit Mathematics lessons to students, therefore adopting 'The Gradual Release of Responsibility' instruction model across K-6 classrooms.

Lessons following this format may include:

Warm Up/Daily Review/Mental Fluency Set

Activate Prior Knowledge/Fluency Practice/Game or Hook. Examples include Daily reviews, Number Talks.

Lesson Objective and Purpose

Students know what they are going to learn and why it is important to them and the level of student performance/assessment is outlined. For example:

Learning Intention WALT, Success Criteria WILF and This is Because TIB

Whole Class Explicit Instruction: Teacher Demonstration (I Do)

Modelling/demonstration contains critical steps to be learned. Learning area vocabulary, skills and concepts that students need to know are made clear.

Explicit Instruction: Guided Practice (We Do)

Examples or questioning for students to practice. Teacher uses a variety of questioning and methods to check for understanding. Students receive specific feedback

Independent or Collaborative Practise (You Do)

Students work in small groups, pairs or independently to complete task/s that are linked to the lesson objective. Students are engaged in differentiated learning and have opportunities for assistance or extension.

Plenary/Reflection

Articulation/sharing of strategies used and/or a reflection on what has been learned.

Current Priorities:

The current priorities for Mathematics, sit alongside the KPS Business Plan 2023-2025 and include:

High Impact Teaching Strategies (HITS)

HITS are a research-based repertoire of 10 of the most valuable strategies for improving student learning outcomes. At Kinross PS, HITS are not used as stand-alone practices, but as an integral part of an overall whole school pedagogy of effective teaching and learning.

HIGH IMPACT TEACHING STRATEGIES



Daily Reviews and Number Talks

With solid links to the above mentioned HITS, Daily Reviews and Number Talks form part of the 'Warm Up' aspect of the KPS lesson design.

Daily Reviews are an explicit instruction strategy that builds fluency, revises previously taught concepts and introduces pre-requisite skills for upcoming lessons. They are designed to be fast-paced and engaging and allow for teachers to check for student understanding and give immediate feedback. At KPS, daily reviews are utilised at least three times per week for approximately 10-15minutes.

Number Talks are an instructional strategy which develop student number sense and provide opportunities for exposure to multiple methods for solving mathematical problems. Number talks encourage students to view engaging in Mathematics as a flexible process and procedures are used to invoke a sense of student safety and confidence in their mathematical ability. At KPS, number talks are utilised at least once a week for approximately 10-15minutes.