

Tip Sheet

Resources to Support Numeracy Development

There are a range of useful resources to assist in the development of maths skills across primary and secondary school.

- **Elementary Maths Mastery** (EMM)
Comprehensive mental mathematics program designed for upper primary, lower secondary and remedial students. There is also a **Junior Elementary Maths Mastery** (JEM) program ideally suited for middle primary and upper primary remedial students, as well as a **Junior Elementary Maths Mastery Plus** (JEMM+) also suited for middle primary and upper primary remedial students.
- **Numicon** – www.oup.com.au/primary/mathematics/numicon
Multi-sensory, cumulative and sequential teaching program using a visual and practical approach to build conceptual understanding and fluent recall which can be used alongside any other program.
- **Paul Swan** – www.drpaulswan.com.au
Series of books, board games and card games, designed to build maths skills in a fun and engaging manner (e.g., *Dice Dilemmas*, *Tackling Tables*, *Fraction Cover Up*, *Money Matters*).
- **Think! Mathematics** or **Maths - No Problem!**
Based on the Singapore Maths approach which emphasises a problem-solving model, as opposed to rote and procedural focused learning, which supports a deeper understanding of mathematical concepts.
- Series of books developed by **Ronit Bird** (e.g., *The Dyscalculia Resource Book*, *Overcoming Difficulties with Numbers*) that provide resources, games and puzzles to help teach key aspects of numeracy to students between the ages of 6 to 16.
- **Keymath-3 Essential Resources**
Intervention program for up to Year 5/6 students with hundreds of lessons, practice sheets and brief tests.
- **Math-U-See** – www.mathusee.com
Program utilising manipulatives and strategies to assist students master fundamental maths skills and concepts allowing abstract maths concepts to be represented in clear, relatable ways.
- **Number Worlds** – www.mheducation.com/prek-12/program/microsites/MKTSP-TIG05M0.html
Teacher led maths intervention program with monitoring tools for students from Pre-K to Year 8.
- **Magical games for Mathematics**
A book of 80 maths games, covering number recognition, place value, algorithms, decimals, fractions and more. Aimed at students from the ages of 5 – 12.
- **Bridges** – www.mathlearningcenter.org/curriculum/bridges-intervention
Provides targeted instruction and assessment for essential K–5 mathematics skills and concepts. A strengths-based approach builds on each student's abilities — starting with manipulatives, then moving to two-dimensional representations and mental images. Intended to complement regular maths instruction, Bridges Intervention is ideal for use with small groups.
- **Spring Math** – www.springmath.org
SpringMath is teacher-led and incorporates research-proven paired learning — meaning it doesn't rely on independent student screen time. Students achieve maths mastery and long-term maths confidence through paper and pencil, "show-what-you-know" learning. SpringMath is built on a robust foundation of embedded coaching and support for each teacher as well as access to support documentation and help.
- **Reflex Maths** – www.reflexmath.com
Reflex Maths is an adaptive and individualised online maths resource that supports the mastery of basic facts in addition, subtraction, multiplication, and division for grades 2+. Full of games that students love, Reflex takes students at every level and helps them quickly gain maths fact fluency and confidence.

Tip Sheet

Resources to Support Numeracy Development (continued)

There are a range of **computer-based programs, online games and apps** that provide opportunities for students with maths learning difficulties / disorders to consolidate and extend their foundation maths skills, these include:

- **Dynamo Maths** - www.dynamomaths.co.uk
Online intervention program to support students struggling with maths.
- **NumberShark** - www.wordshark.co.uk/numbershark
Utilises a games-based approach to numeracy. It includes over 50 games that cover addition, subtraction, multiplication, and division in ways which add meaning and understanding to these operations.
- **Khan Academy** - www.khanacademy.org
Online practice exercises, instructional videos, quizzes, and a personalised learning dashboard so that students can study at their own pace
- **Online Games**
 - **The Number Race** - www.thenumberrace.com and for older children **Number Catcher** - www.thenumbercatcher.com
 - **Bitesize Math Games** - www.bbc.co.uk/bitesize/ks1/maths
- **Example Apps**
 - **Bugs and Numbers** – Early number skills
 - **Number Bonds by Thinkout** – Early Number skills, addition and abstract understanding of number
 - **Jump Numbers**
 - **Number Sense HD** – Designed to promote the development of number sense
 - **Maths Racing Pro** – Maths fluency and number fact recall
 - **Maths Rockx** – learn the times tables – paired with songs to help with recall
 - **Numfu**
 - **Pick-a-Path**
 - **Photomath** – take a photo of any maths problem and see the answer with step-by-step instructions
 - **Maths Formulas – Reference Guide** – Contains over 100 maths formulas with examples

References and Additional Useful Resources

- *Maths Learning Difficulties, Dyslexia and Dyscalculia* (2nd Ed) by Steven Chin
- *Building Numeracy: Moving from diagnosis to intervention* by George Booker
- *Dyslexia, Dyscalculia and Mathematics: A Practical Guide* (2nd Ed) by Anne Henderson
- *Visible Learning for Mathematics: What works best to optimise student learning* by John Hattie, Douglas Fisher and Nancy Frey
- *Dyscalculia: From Science to Education* by Brian Butterworth
- *The Dyscalculia Assessment* by Jane Emerson and Patricia Babbie
- *A Guide to: Mathematical Vocabulary* (Paul Swan) – www.drpaulswan.com.au/planning/a-guide-to
Plus, *My Word Book: Mathematics* by Paul Swan and David Dunstan
- *Overcoming Difficulties with Number: Supporting Dyscalculia and Students who Struggle with Maths* by Ronit Bird
- Explanation and examples of common manipulatives which can be used in maths - www.mathsmaterials.com
- *Solving Math Word Problems: Teaching students with learning disabilities using schema-based instruction* by Asha Jitendra