A resource for teachers

Te Tāhuhu o te Mātauranga
Ministry of Education

Accelerating numeracy in secondary schools

The following information aims to provide practical strategies, resources, and information about accelerating numeracy in a secondary school classroom.

What does acceleration mean in the context of the NCEA Numeracy Co-requisite?

Acceleration refers to targeted teaching that enables students to make rapid progress towards meeting the NCEA Numeracy Co-requisite. It is not about teaching faster or covering more content, but about being strategic and timely with support. Acceleration strategies are responsive, focused, and often short-term interventions that help learners catch up or meet key goals in a set timeframe.

Acceleration in numeracy focuses on:

1. Improving students' ability to apply their mathematical knowledge in unfamiliar or everyday contexts.
2. Emphasising reasoning, estimation, interpretation, and communication.
3. Functional benchmarks such as those used in the NCEA Numeracy Co-requisite assessments.

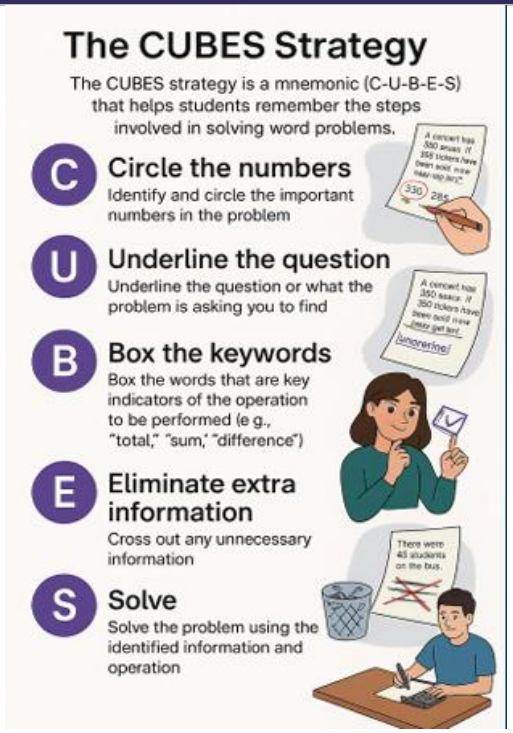
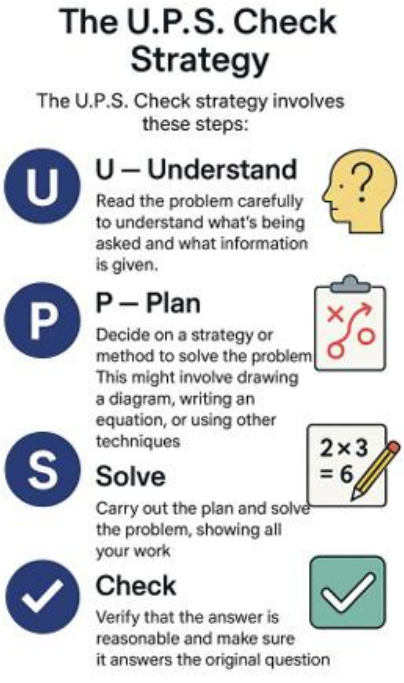
What numeracy acceleration is:	What numeracy acceleration is NOT:
• **Intentional and focused**. Uses diagnostic evidence to identify key capabilities students need for success in upcoming learning and assessment and addresses them precisely. • **Time-bound**. Targets improvement within a limited timeframe to support readiness for future learning and opportunites. • **Success-oriented.** Supports students to strengthen core numeracy capabilities so they can confidently engage in curriculum learning and assessment—not just pass a test. • **Embedded in meaningful contexts.** Grounded in rich, relevant learning tasks that build transferable skills, not test drills.	• **Remediation**. It is not about reteaching everything, just the essential capabilities that unlock access to current and future learning. • **Unfocused**. It is not a general catch-up; it is informed by evidence and designed to strengthen specific capabilities. • **Ongoing tutoring.** It is not indefinite support—it is targeted, short-term and designed to build learner independence and readiness. • **Teaching to the test.** It is not about preparing students for one assessment— it is about building enduring numeracy capabilities that enable success across contexts, including but not limited to NCEA.

Practical strategies to accelerate numeracy progress

- Identify the gaps. Supporting and accelerating learner's success with numeracy begins with knowing the learner's strengths and gaps. Formative assessment tools can help to do this quickly. See: Are your learners ready? | NCEA
- Teach clearly and step-by-step. Structured Lessons ensure consistent skill development and conceptual understanding across all year levels. Explicit instruction is especially effective for both foundational learning in primary and advanced concepts in secondary.
- Stretch students' thinking with challenging tasks, extending them once they have practiced some basic tasks.
- Mathematical Language Development supports conceptual understanding and communication, with growing complexity through the years.
- Use diagrams and visual tools to show your thinking. Concrete–Pictorial–Abstract (CPA) Approach helps develop strong number sense and supports learning from primary through to secondary. Use of Number Lines aid understanding of numerical relationships (whole numbers, fractions, negatives), and remain useful into secondary for operations, data analysis, and coordinate graphing.
- Help students to unpack questions (see below). Word Problem Instruction teaches students to identify, categorise, and solve word problems using real-world contexts and algebraic reasoning builds applied problem-solving skills at all levels.
- Teach students to spot patterns in problems
- Help students think about their thinking

Tools to help students unpack questions.

The following unpacking tools were taken from the webinar slides provided by Evaluation Associates: Targeted support and accelerating numeracy learning

CUBES CUBES Math Strategy	U.P.S Strategy Math Problem Solving Strategies
	

RAVEN

A tool designed for literacy and numeracy tasks where reasoning is required.

Read the question carefully.

Ask: What do I already know? What is being asked?

Visualise the situation with a sketch, number line, or table.

Estimate and calculate what seems reasonable.

Note your reasoning using everyday language and numbers.

Further unpacking tool examples include:

- READS – Designed to support students with estimating and evaluating.
  The 3 Reads Protocol for Solving Word Problems - Math Coach's Corner
- FAST DRAW – Particularly suitable for algebra and multi-step equations.
  FASTDRAW strategy for solving algebra story problems

All unpacking tools were provided by Evaluation Associates: Targeted support and accelerating numeracy learning.

For more information on accelerated numeracy learning, see:

- Support Materials for Additional NCEA Literacy and Numeracy-rich Standards | NCEA
- TMKR Numeracy 10 lessons
- TMKR Targeted Support and Acceleration - Numeracy
- Accelerated learning in secondary schools

Whilst strictly aimed at Years 0-8, the links below contain information that could be relevant when adapted to the secondary school context.

- Accelerating progress – Leadership guidance
- Accelerating progress in maths and stats – Teacher guidance
- Year-8-Working-with-percentages
- Year-7-Adding-and-subtracting-decimals
- Year-7-Measuring-area