In the heart of Western Australia's Wheatbelt, there's a classroom where a teacher is juggling mathematics, science, and English across three different year levels. It's Tuesday afternoon, and she's wondering how to help her struggling Year 5 students grasp place value when she never specialised in mathematics herself. The nearest professional development opportunity? A five-hour drive to Perth, requiring a full day away from her students and a substitute teacher the school budget can barely afford.

This isn't an isolated story. It's the reality for thousands of rural educators across Australia.

That's why this August, Linear Abacus and Numero are taking a different approach - bringing innovative mathematics education directly to rural educators through our specialised workshop in Katanning and surrounds. Because rural students deserve the same quality mathematics education as their metropolitan counterparts and their teachers deserve the support to make it happen.

The Rural Education Challenge

The data is clear: rural students consistently demonstrate lower mathematical achievement compared to their metropolitan counterparts. This disparity is not about ability—it is about opportunity and access to specialised resources.

Rural schools face unique challenges including teacher shortages in specialised subjects, limited access to professional development and geographic isolation. These factors create what experts call the "rural achievement gap" - a persistent disparity that demands innovative solutions.

Our workshop addresses these challenges head-on by bringing specialised expertise directly to rural communities on a weekend, minimising disruption to school schedules and eliminating costly relief and travel expenses for already stretched education budgets.

Our Mission: Educational Equity Through Access

At Linear Abacus and Numero, we've built our companies on a fundamental belief: every child deserves access to engaging mathematics education, regardless of their postcode.

Linear Abacus was founded on the principle that mathematical understanding begins with concrete experience. We've spent years developing and refining our methodology specifically to support teachers who need confidence-building tools that work across multiple year levels and abilities.

Numero emerged from classrooms where teachers needed engaging, flexible resources that could differentiate naturally while building genuine mathematical fluency. Our game-based approach has transformed mathematics experiences in schools where traditional methods weren't meeting diverse student needs.

Together, we're not just selling resources—we're building a movement toward mathematical equity. That's why this Katanning initiative matters so much to us.

Concrete Materials: Building Mathematical Understanding from the Ground Up

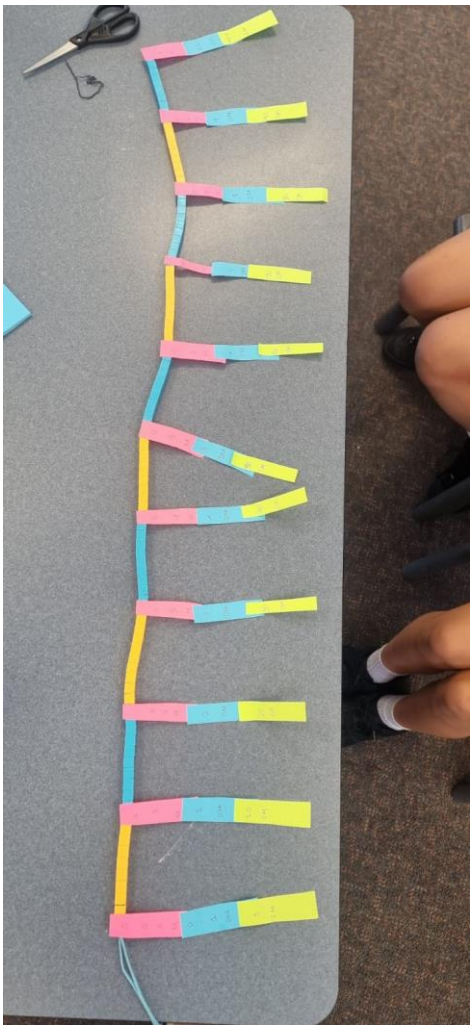
Our workshop centres on two powerful approaches: the Linear Abacus® and Numero® systems. The Linear Abacus is not merely a teaching aid; it represents a transformative methodology for building mathematical understanding.

Research consistently shows that concrete manipulatives produce significant improvements in student learning compared to abstract symbolic instruction alone. They are particularly effective for retention and promoting transfer of mathematical knowledge—exactly what rural students need.

Workshop Spotlight: Linear Abacus® Transforming Place Value & Metric System Understanding

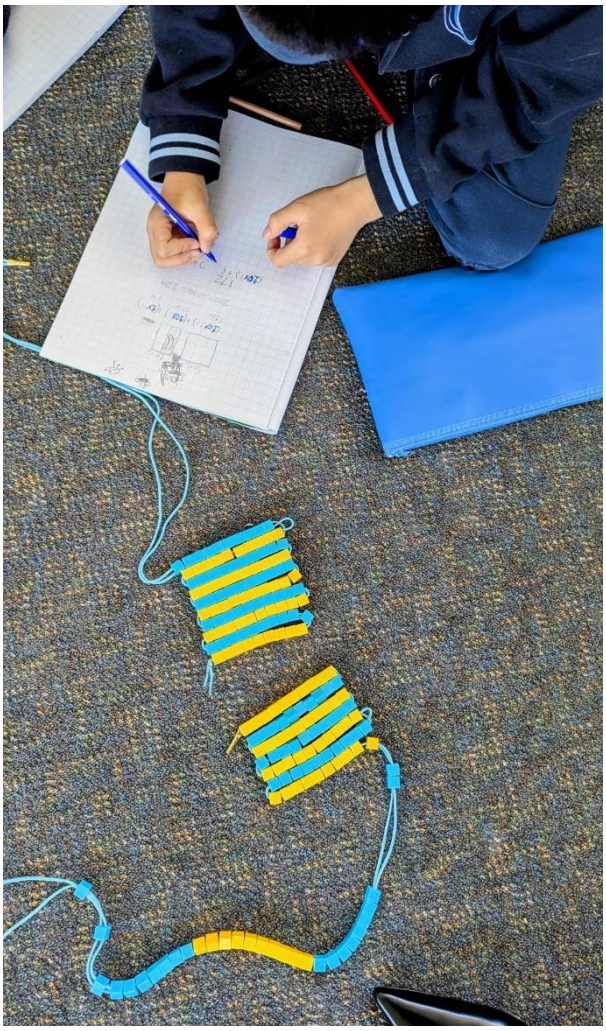
In this transformative session led by Genovieve Grouios, participants will experience firsthand how the Linear Abacus addresses fundamental misconceptions in place value that often go undetected in traditional teaching approaches.

What makes this workshop better than conventional professional development is its focus on mathematical coherence. Rather than offering isolated "activities," the Linear Abacus presents a complete mathematical ecosystem that connects decimal place value directly to the metric system, building deep, connected understanding. This versatility makes it exceptionally cost-effective for schools with limited resources, as one tool addresses multiple year levels and abilities.



Students using decimal knowledge to understand equivalence between metric units.

Participants will leave with ready-to-implement lessons that help students visualise the decimal number system and its application to measurement. This approach is particularly effective for diverse classrooms where students may have gaps in foundational concepts, making it invaluable for differentiation in mixed-ability settings.



Students learning to use arithmetic as they rename numbers.

Game-Based Learning: Making Mathematics Meaningful

The Numero card game system incorporates essential elements for mathematical fluency: accuracy, efficiency and flexibility. Through structured play, students develop multiple solution pathways - a key indicator of mathematical proficiency.

Research shows that mathematical games not only improve computational fluency but also positively impact students' attitudes toward mathematics. Game-based approaches reduce math anxiety while increasing engagement and perseverance - critical factors in long-term success.

Workshop Spotlight: Numero® Reshaping Number Understanding & Problem-Solving Techniques

Julie Richards' Numero workshop provides teachers with a versatile game that addresses a critical need in mathematics education: developing multiple solution strategies, rather than prescriptive algorithms.

Numero develops computational fluency within a problem-solving context. Students who learn multiple strategies simultaneously develop greater conceptual understanding and procedural flexibility than those taught with single-strategy approaches.

The workshop demonstrates how Numero can be differentiated across ability levels within the same classroom, making it particularly valuable for composite classes common in rural schools. Participants will experience how the game naturally scaffolds learning from basic number facts to complex operations involving fractions, decimals and algebraic thinking.

What teachers particularly value about Numero is its ability to generate high engagement, while simultaneously collecting formative assessment data. Teachers will learn specific techniques for using Numero as both an assessment and intervention tool for struggling learners.

Students playing, engaging and achieving through Numero.

Synergistic Learning: Where Concrete Materials Meet Game-Based Approaches

Our workshop's innovative final session demonstrates how combining the comprehensive Linear Abacus system with game-based learning through Numero creates a powerful synergy. The Linear Abacus provides the deep conceptual framework and visual representations that make abstract mathematical ideas concrete, while Numero offers opportunities to apply this understanding in engaging contexts.

By enabling students to physically prove the mental strategies they discover through gameplay using the Linear Abacus, we are developing their capacity for logical thought, reflection, explanation and justification. This approach transforms mathematics from a collection of procedures to be memorised into a coherent, sense-making activity.

Workshop Spotlight: Mathematical Proof and Reasoning Through Integration

The afternoon joint workshop represents the pinnacle of our professional learning experience—combining both methodologies to create learning environments where students can articulate their mathematical thinking and reasoning.

What makes the Linear Abacus particularly powerful in this combined approach is its ability to make visible the mathematical structures that underlie computational strategies. For example, when students discover pattern-based mental strategies through Numero®, they can use the Linear Abacus® to build physical models that demonstrate why these patterns work mathematically - transforming intuitive discoveries into rigorous mathematical understanding.

The multi-sensory approach creates different access points for students with varying learning preferences and abilities. Approaches providing multiple representations significantly increase equity in mathematics classrooms - a crucial consideration for rural schools serving diverse student populations.

Investing in Rural Education

Research on rural education emphasises that targeted professional development for rural teachers has an outsized impact on student outcomes. By bringing specialised mathematics education directly to Katanning and surrounds, we are addressing a critical need - bridging the gap between educational research and classroom practice in rural settings.

Beyond the Workshop: Creating Sustainable Change

What distinguishes our approach from conventional "one-off" professional development is our focus on sustainable implementation. Our workshop model incorporates active participation and coherence with existing curriculum requirements.

Participants will receive comprehensive support materials including lesson ideas, assessment tools, differentiation guides and implementation plans tailored to rural classroom contexts. This provides teachers with specific tools to translate new knowledge into classroom practice.

The practical, classroom-ready nature of both Linear Abacus® and Numero® makes them particularly valuable for early-career teachers or those teaching out-of-field - common scenarios in rural schools where teacher recruitment and retention present ongoing challenges. These resources provide structured support while building teacher confidence and mathematical content knowledge simultaneously.

Join us this August in Katanning for a transformative professional development experience designed specifically for rural mathematics educators. Limited places available—register your interest today by messaging me directly or visiting our website.

https://www.linearabacus.com/mathsthatmoves

https://numero.org/maths-that-moves/