Reading eggs Mathseeds

Literacy, Numeracy and the Early Years: What the Research Tells Us

3P Learning

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Introduction

The early primary years of schooling are critical in setting students on the path to long-term learning success. Strong foundations in literacy and numeracy help children build the confidence, knowledge and skills they need to thrive across all learning areas.

Across New Zealand, schools continue to focus on improving student outcomes in reading and mathematics, recognising the importance of early intervention and effective classroom practice. Research shows that literacy and numeracy development are closely connected, with growth in one area often supporting progress in the other.

Early exposure to both literacy and numeracy gives students essential cognitive tools such as language development, problem-solving, sequencing and logical thinking. Together, these capabilities create a strong base for future learning.

For school leaders and educators, supporting both areas in the early years can strengthen student outcomes, build confidence and help address learning gaps before they widen.

This guide explores why a balanced focus on literacy and numeracy matters and shares practical strategies educators can use to engage young learners and build strong foundations for future success.

The Critical Connection Between Literacy and Numeracy Skills

Research consistently shows that early literacy and numeracy development are closely connected. Growth in one area often supports progress in the other, helping strengthen memory, reasoning, language development and overall cognitive growth.

For example, strong language skills help students understand maths vocabulary, follow instructions and explain their thinking. In the same way, early numeracy experiences build pattern recognition, sequencing and logical reasoning — skills that also support reading development.

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While schools often place a strong focus on literacy in the early years, a balanced approach that gives equal attention to numeracy can help students build stronger foundations for future success.

Balancing Instructional Time in the Early Years

In many early primary years settings, literacy naturally receives a significant share of classroom attention. Reading, oral language and writing are critical priorities, but numeracy development is equally important during these formative years.

Providing regular opportunities for students to explore number, patterns, measurement, sequencing and problem-solving helps develop the analytical thinking skills that support learning across the curriculum.

Rather than viewing literacy and numeracy as separate priorities, schools can achieve stronger outcomes by embedding both throughout everyday learning experiences.

Student Outcomes in Literacy and Numeracy

Across New Zealand, improving literacy and numeracy outcomes remains a key priority for schools and education systems.

National assessment data and classroom experience continue to highlight the importance of strong early foundations in reading, writing and mathematics. When students experience difficulties in the early years, those gaps can become harder to close over time.

This is why high-quality early instruction matters. Supporting both literacy and numeracy from the beginning helps students build confidence, strengthen core skills and engage more successfully across all areas of learning.

A balanced focus on both areas in the early years gives students the best opportunity for long-term success.

Interconnected Skill Development

Literacy and numeracy development are closely linked, with progress in one area often supporting growth in the other.

Language Skills Support Maths Learning

Strong oral language and reading comprehension help students understand maths vocabulary, interpret questions and explain their thinking when solving problems.

Numeracy Skills Support Literacy Development

Early numeracy learning strengthens logical reasoning, sequencing and pattern recognition — all important skills that also contribute to reading success.

When schools give balanced attention to both literacy and numeracy, students are more likely to build confidence, strengthen core capabilities and achieve stronger learning outcomes overall.

While literacy is often a major early years priority, integrating regular numeracy learning is equally important for developing well-rounded learners.

A Balanced Approach to Early Learning

A balanced approach to early learning is about more than simply allocating time to literacy and maths. It means helping students understand how these learning areas connect and support one another through purposeful everyday classroom experiences.

When literacy and numeracy are taught in meaningful, integrated ways, students are better able to transfer their skills across different contexts and develop deeper understanding.

There are many practical ways teachers can embed maths into literacy learning — and literacy into maths lessons — creating engaging opportunities for students to strengthen both areas at the same time.

The strategies that follow provide simple, classroom-ready ideas to help build strong foundations in literacy and numeracy across the early years.

Maths in Literacy: Bringing Numeracy into Storytelling and Reading

Stories provide rich opportunities to build numeracy skills alongside reading comprehension. By weaving maths concepts into literacy experiences, teachers can help students make meaningful connections across both learning areas.

Story Problems Through Reading

- **Strategy**: Choose books and stories that naturally include maths concepts such as counting, sharing, comparing or grouping. For example, while reading a story featuring animals or objects, ask questions such as:
  - How many ducks are there altogether?
  - If two more ducks arrive, how many are there now?
  - How many are left if one swims away?
- **Classroom Practice**: After reading, invite students to create their own story problems based on events or characters in the text. This supports reading comprehension while helping students apply maths thinking in a familiar context.

Counting and Sequencing in Stories

- **Strategy**: Use counting books or stories with clear sequences, repetition or patterns. During reading, ask students to predict what might happen next and track changes in number as the story progresses.
- **Classroom Practice**: After reading, students can retell the story using drawings, number lines, simple charts or sequencing cards. This helps reinforce order, counting and comprehension through hands-on learning.

Building Vocabulary Through Maths Concepts

- **Strategy**: Introduce maths-specific vocabulary alongside everyday language. For example, when teaching shapes, discuss words such as sides, corners, edges, curved, equal and symmetrical.

  Encourage students to use these words when speaking and writing, helping them build confidence with both maths and language.
- **Classroom Practice**: Use visuals, word cards or labelled displays to reinforce key vocabulary. Prompt students to explain their ideas using full sentences. For example:
  - A triangle has three sides.
  - This rectangle has four corners.
  - The shapes are equal in size.

  This helps strengthen oral language while deepening mathematical understanding.

Writing in Maths: Using Maths Journals

- **Strategy**: Encourage students to keep maths journals where they record how they solved a problem, what strategy they used or what they noticed during learning.

  For example:

  First, I counted the apples in groups of two. Then I added the groups together to make six.
- **Classroom Practice**: Use short prompts such as:
  - How did you solve this problem?
  - Which strategy worked best for you?
  - What did you find tricky today?
  - Explain your answer using words and numbers.

  Writing about mathematical thinking helps students clarify ideas, reflect on strategies and communicate their reasoning.

Graphs and Charts to Explore Story Elements

- **Strategy**: Choose a story with repeated characters, events or objects, then ask students to track them using tally marks.

  For example:

  - How many times did the koala appear?
  - How many animals were in the story altogether?
  - Which character appeared most often?

- **Classroom Practice**: After collecting data, guide students to create a bar graph, pictogram or simple chart to represent their findings. This builds counting, data interpretation and comprehension skills at the same time.

Engaging Early Learners: Making Learning Active and Enjoyable

Young learners thrive when learning is interactive, playful and hands-on. Movement, music, and repetition can strengthen both literacy and numeracy skills while keeping students motivated.

Using Movement and Music

- **Strategy**: Use songs, rhymes or chants that include counting, sequencing or rhyming patterns.

  For example:

  - counting songs
  - skip-counting chants
  - rhyming action songs
  - pattern claps and rhythms

- **Classroom Practice**: Pair songs with actions such as clapping, jumping, marching or tapping to reinforce rhythm, counting and sequencing.

  This supports:

  - numeracy development
  - phonological awareness
  - memory and recall
  - language development
  - active participation

Using Hands-On Materials and Visual Supports in Story Retelling

- **Strategy**: Use hands-on materials such as blocks, counters, cubes or tokens during story retelling to help students model mathematical ideas within a narrative.

  For example, after reading a story about sharing, grouping or adding, students can use counters to show how many items each character receives or how quantities change throughout the story.

- **Classroom Practice**: Invite students to retell the story using the materials, explaining what is happening and the maths involved.

  For example:

  - There were 6 apples and each child received 2.
  - Two more animals joined, so now there are 5 altogether.
  - Three blocks were taken away, leaving 4.

  Using physical materials helps students connect language, story structure and mathematical thinking in a concrete and meaningful way.

Bringing It All Together: Practical Strategies for Teachers

Integrating literacy and maths does not need to mean redesigning your whole program. Often, small intentional changes can create meaningful opportunities for students to strengthen both areas through everyday classroom learning.

Here are some practical ways to bring these ideas to life.

- **Plan with Connections in Mind:** When planning lessons, look for natural opportunities to link literacy and maths.

  For example:

  - add counting or sequencing to a shared reading lesson
  - use maths vocabulary during writing tasks
  - include data collection in reading reflections
  - connect measurement to stories or enquiry topics

  Small adjustments can create rich cross-curricular learning.

- **Use Data to Inform Teaching:** Regularly monitor both literacy and numeracy progress to identify strengths, needs and next steps.

  Use assessment information, observations and student work samples to plan targeted activities that support balanced skill development. This helps ensure students receive the right support at the right time.

- **Encourage Collaborative Learning:** Pair and group tasks allow students to talk through ideas, explain thinking and learn from one another.

  Examples include:

  - solving story-based maths tasks together
  - creating graphs from class reading data
  - discussing vocabulary linked to shapes or measurement
  - completing integrated enquiry tasks

  Collaborative learning supports communication, confidence and deeper understanding.

- **Build Routines Through Daily Practice:** Consistent routines help students strengthen both literacy and maths over time.

  Simple examples include:

  - morning warm-ups with counting or word play
  - daily maths journals
  - shared reading with number talk
  - class tally charts for attendance, books read or surveys
  - quick sequencing activities

  Regular practice helps students see literacy and maths as connected parts of everyday learning.

Conclusion

The connection between literacy and maths in the early primary years is powerful. When these foundational learning areas are supported together, students are better placed to build the confidence, knowledge and skills they need to succeed across the curriculum.

Rather than viewing literacy and numeracy as separate priorities, schools can create richer learning experiences by helping students make meaningful connections between them. Bringing maths concepts into literacy learning — and language into maths instruction — helps students see learning as purposeful, practical and relevant.

The strategies shared in this guide, from story-based maths tasks and vocabulary development to collaborative projects and daily routines, are simple approaches teachers can begin using straight away. Small changes to everyday practice can make a meaningful difference over time.

A balanced approach supports more than reading and maths achievement alone. It also helps students develop problem-solving, reasoning, communication and comprehension skills that underpin future learning success.

By strengthening literacy and numeracy together in the early years, schools can lay strong foundations for confident learners, positive outcomes and a lifelong love of learning.