

Literacy, Numeracy and the Early Years: What Research Tells Us About Building Strong Foundations





Introduction

The early elementary years are critical in shaping students' long-term learning success. Strong foundations in literacy and numeracy help children develop the confidence, knowledge, and skills they need to thrive across all areas of learning.

Across Canada, schools continue to focus on improving student outcomes in literacy and mathematics, recognizing the importance of strong early instruction, evidence-based teaching practices, and early identification of learning needs.

Research consistently shows that literacy and numeracy development are closely connected, with growth in one area often supporting progress in the other.

Early learning experiences in both literacy and numeracy help students develop essential cognitive capabilities including language development, reasoning, sequencing, problem-

solving, and logical thinking. Together, these capabilities create a strong foundation for future learning.

For school and district leaders, 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

Early literacy and numeracy skills develop hand in hand. As students make progress in one area, they often strengthen the other, building memory, reasoning, language development and overall cognitive growth.

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

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 Kindergarten to Grade 2 classrooms, literacy naturally receives a significant share of instructional time. Reading, oral language, and writing are essential 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 strengthen 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 Canada, improving literacy and numeracy outcomes remains a key priority for schools and districts.

Provincial assessment data, classroom evidence, and educator 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 often 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 foundational 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 reinforce each other, and strength in one area often supports growth in the other.

Language Skills Support Mathematics Learning

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

Numeracy Skills Support Literacy Development

Early numeracy learning strengthens logical reasoning, sequencing, and pattern recognition — all important capabilities 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 focus in the early years, 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 dividing instructional time between literacy and mathematics. It involves helping students recognize how these learning areas connect and reinforce one another through purposeful 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 mathematics into literacy learning — and literacy into mathematics instruction — creating engaging opportunities for students to strengthen both areas simultaneously.

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

Mathematics in Literacy: Bringing Numeracy into Storytelling and Reading

Stories provide rich opportunities to build numeracy skills alongside reading comprehension. By weaving mathematical 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 mathematical 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. These discussions also support oral language development while helping students apply mathematical thinking in familiar contexts.

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 quantity as the story progresses.
- **Classroom Practice:** After reading, students can retell the story using drawings, number lines, simple charts, or sequencing cards. This reinforces order, counting, comprehension, and oral language development through hands-on learning experiences.



Building Vocabulary Through Mathematical Concepts

- **Strategy:** Introduce mathematical vocabulary alongside everyday language. For example, when teaching shapes, discuss terms such as sides, corners, edges, curved, equal, and symmetrical. Encourage students to use these words when speaking and writing to help strengthen both mathematical understanding and language development.
- **Classroom Practice:** Use visuals, word cards, or labelled displays to reinforce key vocabulary. Prompt students to explain their ideas using complete sentences.

For example:

- A triangle has three sides.
- This rectangle has four corners.
- The shapes are equal in size.

This supports both oral language development and deeper mathematical understanding.

Writing in Mathematics: Using Math Journals

- **Strategy:** Encourage students to keep math 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 prompts such as:

- How did you solve this problem?
- Which strategy worked best for you?
- What did you find challenging today?
- Explain your answer using words and numbers.

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

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 bear 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, pictograph, or simple chart to represent their findings. This helps strengthen counting, data interpretation, and comprehension skills simultaneously.

Engaging Early Learners: Making Learning Active and Enjoyable

Young learners benefit most from learning experiences that are interactive, engaging, and hands-on. Movement, music, and repetition can strengthen both literacy and numeracy skills while supporting motivation and participation.



Using Movement and Music

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

Examples include:

- 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.

These activities support:

- numeracy development
- phonological awareness
- memory and recall
- oral 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 quantities change throughout the story.

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

For example:

- There were six apples and each child received two.
- Two more animals joined, so now there are five altogether.
- Three blocks were taken away, leaving four.

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

Bringing It All Together: Practical Strategies for Teachers

Integrating literacy and mathematics does not require redesigning an entire instructional 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 connect literacy and mathematics.

For example:

- add counting or sequencing to shared reading lessons
- use mathematical vocabulary during writing tasks
- include data collection in reading reflections
- connect measurement to stories or inquiry topics

Small adjustments can create rich cross-curricular learning opportunities.

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

Use assessment information, classroom 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:** Partner and group tasks allow students to talk through ideas, explain reasoning, and learn from one another.

Examples include:

- solving story-based math tasks together
- creating graphs from classroom reading data
- discussing vocabulary linked to shapes or measurement
- completing integrated inquiry tasks

Collaborative learning supports communication, confidence, and deeper understanding.





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

Simple examples include:

- morning warm-ups with counting or word play
- daily math 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 mathematics as connected parts of everyday learning.

Conclusion

The connection between literacy and numeracy in the early elementary years is powerful. When these foundational learning areas are supported together, students are better positioned 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 mathematical concepts into literacy learning — and language into mathematics instruction — helps students see learning as purposeful, practical, and relevant.

The strategies shared in this guide, from story-based math tasks and vocabulary development to collaborative projects and daily instructional routines, are practical approaches teachers can begin implementing immediately. Small, intentional improvements to everyday instructional practice can create meaningful long-term impact.

A balanced approach supports more than reading and mathematics achievement alone. It also helps students strengthen 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 long-term success.