

The Early Years Advantage: Building Strong Foundations in Literacy and Numeracy Through Evidence-Based Teaching



The early years of education aren't just important — they're foundational.

From Kindergarten through Grade 2, students are developing the cognitive architecture that supports all future learning. During this period, the brain is forming and strengthening the neural pathways responsible for language, comprehension, mathematical reasoning, memory, attention, and problem-solving.

Research across neuroscience, literacy, and mathematics education continues to reinforce the same message: high-quality instruction in the early years has a lasting impact.

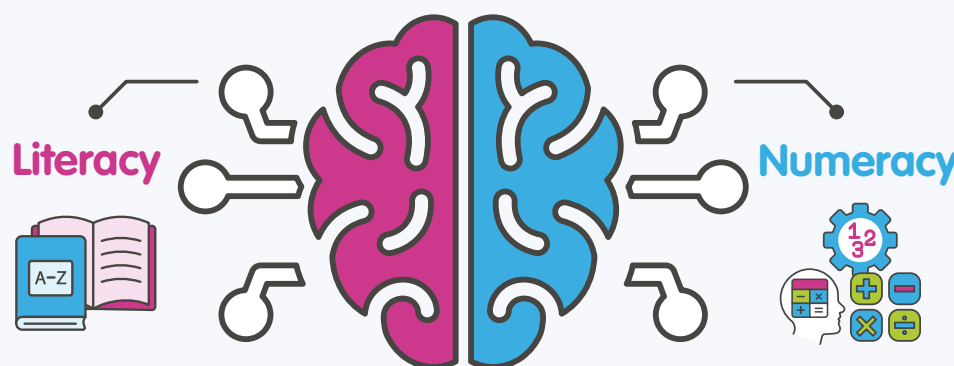
For school and district leaders across Canada, this presents both an opportunity and a responsibility. The instructional experiences students receive in these formative years can shape not only their academic outcomes, but also their confidence, engagement, and long-term relationship with learning.

At the same time, schools continue to face growing challenges:

- widening learning gaps
- increasing intervention needs
- declining literacy and numeracy performance
- teacher workload pressures
- increasing demand for evidence-based practice

Canada's own results tell a sobering story. On the 2023 Trends in International Mathematics and Science Study (TIMSS), Canadian Grade 4 students scored below the international average on nearly every benchmark, and [seven provinces have seen their PISA mathematics scores fall by more than 40 points since 2003](#) — a decline researchers equate to roughly two years of lost learning.

On the literacy side, the Ontario Human Rights Commission's 2022 [Right to Read](#) inquiry found that many students, including a disproportionate share of those with reading disabilities, were not being taught to read effectively — a finding that has driven curriculum reform well beyond Ontario's borders.



The encouraging news is that we now know more than ever about how children learn best — and how schools can create stronger foundations through explicit, evidence-based instruction across literacy and numeracy.

This guide explores:

- why the early years matter so much
- how literacy and numeracy development are interconnected
- why explicit, systematic instruction matters
- how strong whole-class teaching reduces later intervention pressure
- what school and district leaders can do to strengthen outcomes in the early years

Chapter 1

How the Early Years Shape Future Learning

The human brain's capacity for growth in the early years is extraordinary.

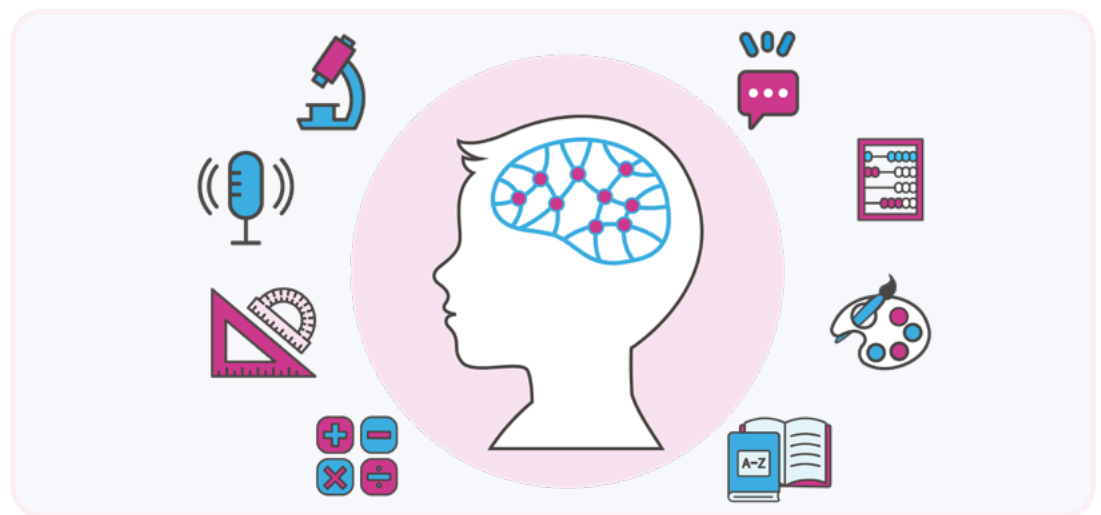
In the first years of life, children's brains form neural connections at a rate that will never again be matched. These connections build the foundation for language, memory, executive functioning, reasoning, and learning.

By the time students reach the middle elementary years, many of these neural pathways have already become more established and less flexible. This means the early years provide a unique window for building strong learning foundations before gaps become increasingly difficult to address.

For educators, this changes how we think about early instruction.

The early years are not simply preparation for “real learning” later on. They are where the foundations for future success are built.

The neural pathways developed during the early years become the foundation upon which future learning is built.



Why evidence-based instruction matters

Research consistently shows that students learn most effectively when instruction is:

- explicit
- carefully sequenced
- scaffolded
- cumulative
- responsive to student understanding

Strong whole-class instruction creates the foundation upon which effective intervention and long-term student success depend.

These approaches align closely with what cognitive science tells us about how learning occurs — evidence that has driven a wave of curriculum reform across Canada. Since 2023, provinces including Ontario, British Columbia, Alberta and Nova Scotia have revised their K–6 language curricula to require explicit, systematic instruction in foundational literacy skills, with several introducing universal early reading screening.

Ontario’s Grade 1–8 Language curriculum, for instance, requires structured literacy instruction beginning in Kindergarten, and British Columbia’s [K–4 Foundational English Language Arts Learning Progressions](#), released in 2025, set out a comparable sequence for early reading skills.

Curriculum design in Canada is a provincial and territorial responsibility rather than a national one, so the pace and detail of reform varies by jurisdiction. Even so, the direction of travel is consistent: introducing content in small, carefully managed steps is one of the most effective ways to help students build foundational knowledge.

When teaching reduces unnecessary cognitive load and introduces concepts systematically, students are better able to:

- retain information
- build connections between ideas
- transfer knowledge
- develop confidence as learners

This is especially important in literacy and numeracy, where foundational concepts build progressively over time.

Strong early instruction does not simply improve short-term outcomes — it strengthens the cognitive systems that support ongoing learning across subjects.

The importance of whole-class teaching

Across Canada, schools are increasingly recognizing the importance of strong Tier 1 instruction — or high-quality whole-class teaching — as the foundation of sustainable improvement.

While intervention remains important for students who need additional support, the strongest long-term outcomes occur when classroom instruction itself is highly effective.

When schools prioritize:

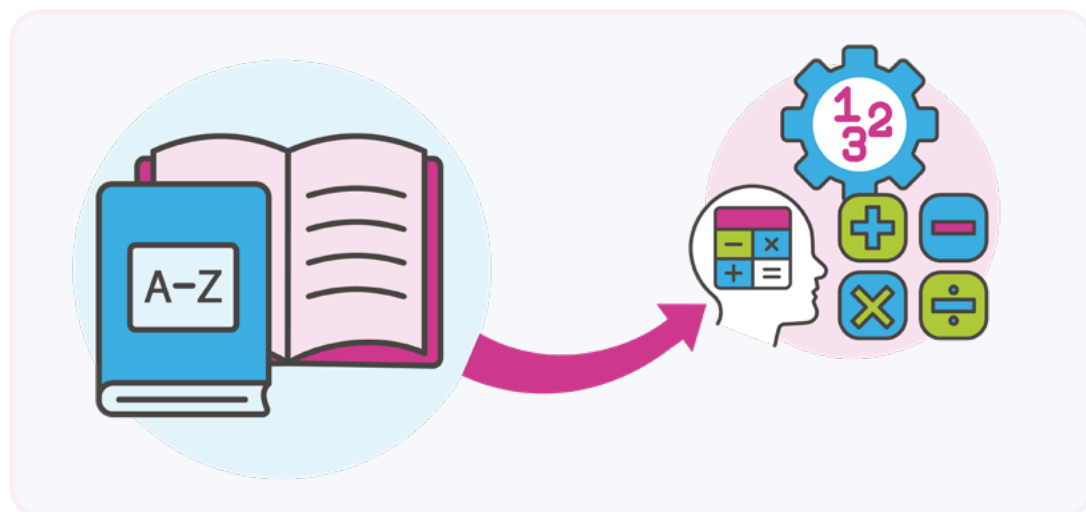
- instructional consistency
- explicit teaching
- evidence-based practice
- strong curriculum sequencing
- regular formative assessment

they are better positioned to:

- reduce learning gaps early
- support all students more effectively
- reduce intervention pressure over time
- improve sustainability for teachers and support staff

Literacy and numeracy are not isolated subjects — they draw on shared cognitive foundations that support each other.

Literacy and numeracy are deeply interconnected



Historically, literacy and numeracy have often been treated as separate domains competing for instructional time.

Research increasingly suggests otherwise.

Literacy and numeracy draw upon many of the same underlying cognitive systems, including:

- language development
- working memory
- executive functioning
- reasoning
- pattern recognition

Strong oral language supports reading comprehension and mathematical reasoning. Vocabulary development supports both literacy and problem-solving. Executive functioning helps students manage decoding, comprehension, and multi-step mathematical thinking.

This means strengthening one area often supports development in the other.

Rather than viewing literacy and numeracy as separate priorities, schools have an opportunity to build more connected approaches to foundational learning.

Chapter 2

Why **Early Literacy** Can't Wait

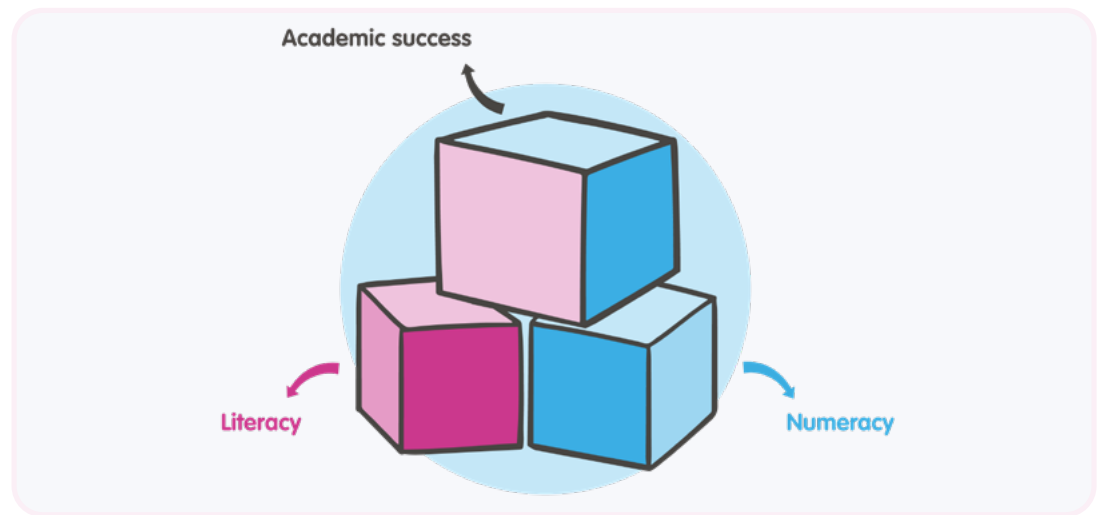
If there is one area where early investment has the potential to transform long-term outcomes, it is literacy.

Learning to read is about far more than decoding words on a page. Literacy shapes how students access knowledge, communicate ideas, build confidence, and engage with the world around them.

When students develop strong literacy foundations early, they are better positioned to succeed across every learning area.

When literacy gaps emerge early and remain unaddressed, those challenges often compound over time.

The early years provide schools with their greatest opportunity to build strong literacy foundations before learning gaps widen.



The critical early literacy window

The years between Kindergarten and Grade 2 represent a particularly important stage for literacy development.

During this period, students are:

- developing phonological awareness
- building decoding skills
- strengthening oral language
- expanding vocabulary
- learning how written language works
- beginning to read for meaning and enjoyment

Research consistently shows that explicit, systematic literacy instruction during these years is one of the strongest predictors of future reading success.

This shift is already reshaping literacy instruction across the country. Prompted in part by the Ontario Human Rights Commission's 2022 [Right to Read](#) inquiry and its 157 recommendations for evidence-based, structured literacy instruction, provinces including Ontario, British Columbia, Alberta, Nova Scotia and New Brunswick have introduced systematic phonics instruction, revised language curricula, and universal early reading screening since 2023.

This includes:

- structured literacy approaches
- explicit phonics instruction
- oral language development
- vocabulary instruction
- fluency practice
- comprehension development

These elements work together to build capable, confident readers.

The role of oral language and vocabulary

Strong literacy development begins long before students independently read complex texts.

**Students need both
the skills to read
and the motivation
to continue reading
independently
over time.**

Oral language development plays a critical role in:

- comprehension
- reasoning
- vocabulary acquisition
- communication
- background knowledge development

Students who are exposed to rich language experiences, meaningful discussion, and strong vocabulary instruction are better equipped to understand increasingly complex texts and ideas over time.

This is particularly important because comprehension relies not only on decoding ability, but also on language knowledge and background understanding.



Reading engagement matters too

Strong literacy instruction is not only about teaching students how to read — it is also about helping students want to read.

Reading engagement plays a significant role in:

- reading stamina
- confidence
- motivation
- comprehension development
- long-term academic success

Students who experience success, enjoyment, and choice in reading are more likely to continue reading independently and develop stronger literacy outcomes over time.

This means schools should aim to balance:

- explicit instruction
- systematic teaching
- rich classroom discussion
- authentic reading experiences
- opportunities for curiosity and enjoyment

What school and district leaders can do

School and district leaders play a critical role in strengthening literacy outcomes through:

- evidence-based instructional approaches
- high-quality curriculum implementation
- professional learning
- instructional coaching
- assessment systems
- whole-school consistency

Strong literacy improvement efforts often include:

- explicit teaching expectations
- structured literacy implementation
- regular assessment and progress monitoring
- intervention aligned to classroom instruction
- access to high-quality decodable and authentic texts
- strong home-school partnerships

The most successful schools create literacy-rich environments where reading is visible, valued, and consistently supported across classrooms and the broader school community.



Chapter 3

From Counting to Critical Thinking: Rethinking Early Numeracy

While literacy often dominates early years conversations, research increasingly shows that early numeracy development may be one of the strongest predictors of future academic success.

The foundations of mathematical thinking begin much earlier than many people realize.

Long before students encounter multiplication, fractions, or algebra, they are developing:

- number sense
- pattern recognition
- spatial reasoning
- problem-solving skills
- mathematical language
- flexible thinking

These early capabilities form the foundation for later mathematical success.

Strong early numeracy development builds the cognitive flexibility and reasoning skills that support future learning across the curriculum.



Why early numeracy matters

Research consistently highlights strong relationships between early numeracy development and later achievement across subjects.

This is because numeracy supports broader cognitive skills including:

- reasoning
- working memory
- executive functioning
- problem-solving
- analytical thinking

Canadian evidence points the same way. [Research from the C.D. Howe Institute](#) has repeatedly called for more explicit, systematic teaching of mathematics from the early years and for strengthening the mathematics content knowledge of K–8 teachers, cautioning that too many students are being held back by under-evidenced instructional approaches.

When students build strong mathematical foundations early, they are better able to engage with increasingly complex learning later on.

Beyond rote learning

Effective early numeracy instruction goes beyond memorization and procedural practice alone.

Students need opportunities to:

- understand numerical relationships
- explain mathematical thinking
- develop conceptual understanding
- apply learning flexibly
- connect mathematics to real-world contexts

This shift from rote counting to conceptual understanding is critical.

Students who develop strong number sense are more likely to:

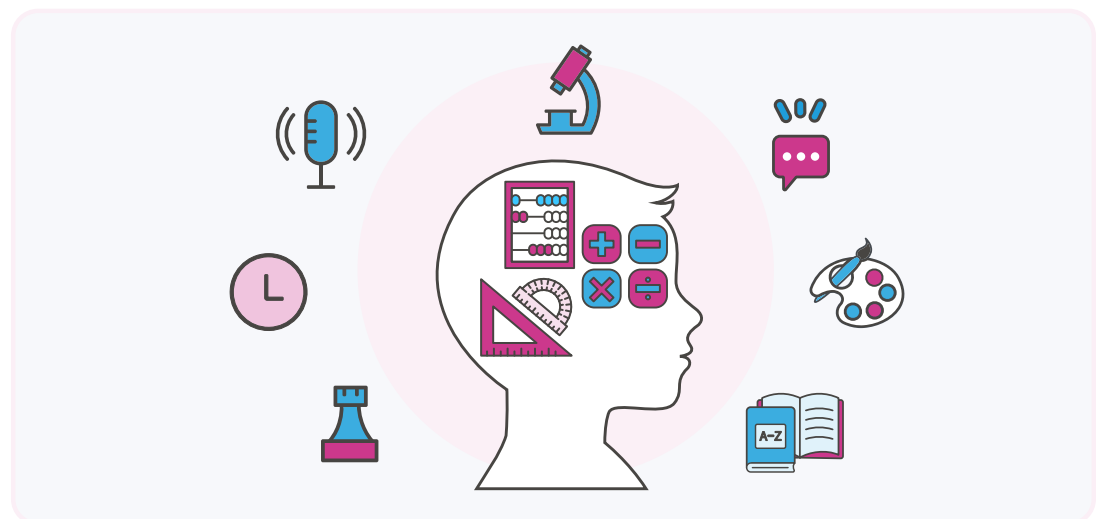
- solve problems flexibly
- adapt strategies
- understand mathematical relationships
- apply learning in unfamiliar contexts

Building rich mathematical environments

Strong numeracy instruction should be visible throughout the learning environment.

Schools can support this by creating classrooms where:

- mathematical thinking is discussed regularly
- problem-solving is encouraged
- mathematical language is modelled
- visual representations support understanding
- students explain their reasoning
- numeracy is embedded across learning experiences



The early years represent one of the highest-impact opportunities schools have to strengthen long-term numeracy outcomes.

When high-quality classroom instruction is already in place, well-designed digital tools can extend learning, provide additional practice, and give teachers timely insight into student progress.

They can also play an important role when used strategically to:

- reinforce foundational skills
- provide targeted practice
- support differentiation
- increase engagement
- provide actionable learning insights

What school and district leaders can do

School and district leaders can strengthen early numeracy outcomes by:

- prioritizing conceptual understanding
- investing in evidence-based teaching approaches
- supporting teacher professional learning
- strengthening curriculum consistency
- implementing early assessment and screening
- embedding numeracy across the broader school culture

As with literacy, the strongest outcomes occur when schools focus first on strengthening whole-class instruction before relying heavily on remediation later.



Building Strong Foundations for Lifelong Learning

The evidence is clear: the early years matter enormously.

What students experience in Kindergarten through Grade 2 helps shape:

- how they learn
- how they think
- how they solve problems
- how they engage with school
- how confident they become as learners

Strong literacy and numeracy foundations do not develop by chance.

They are built through:

- explicit, evidence-based teaching
- carefully sequenced instruction
- strong classroom practice
- meaningful learning experiences
- instructional consistency
- early identification and support

Most importantly, literacy and numeracy should not be viewed as competing priorities. Together, they form the interconnected foundation upon which future learning depends.

For school and district leaders, this presents an important opportunity: to strengthen instructional practice during the years where it can make the greatest long-term difference.

Schools looking to strengthen early literacy and numeracy increasingly seek solutions that align with evidence-based teaching practices while helping teachers deliver consistent, engaging instruction at scale.

At 3P Learning, we support schools with evidence-based literacy and numeracy programs designed to strengthen foundational learning through engaging, developmentally appropriate instruction.

Our award-winning solutions — including [Reading Eggs](#) and [Mathseeds](#) — help schools build strong learning foundations that support long-term student success.

