



Supporting Early Literacy & Numeracy (Math)

Knowledge Cafe • Junior School
October 7, 2024



Session Goals

- Numeracy and literacy development (How/when children acquire skills)
- Top 10 Tips for supporting literacy development at home
- Top 10 Tips for supporting numeracy development at home
- Creating a supportive learning environment
- Question and Answer



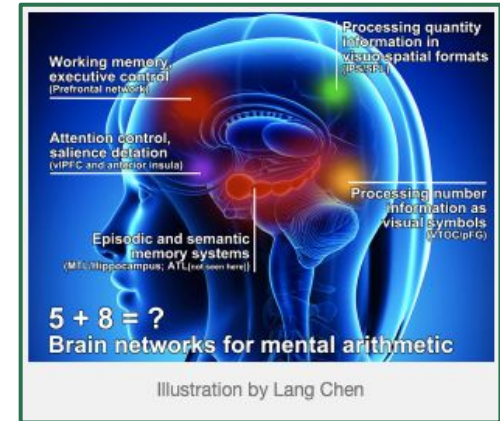


Numeracy Development- 101

Numeracy Development: *A Cognitive Snapshot*



- Attention
- Memory
- Visuospatial processing
- Procedural knowledge, Factual knowledge, conceptual knowledge
- Metacognitive processing



Numeracy Development



Early Numeracy (Ages 0-5)

- **Recognizing Numbers:** Children begin to identify numbers and their quantities, often by pointing or using words like "one" or "two."
- **Counting Skills:** Children learn to count verbally in order, first from 1 to 10, then higher.
- **Understanding Quantities:** By the end of this stage, children start to grasp that numbers represent specific quantities (e.g., knowing that "three" means three objects).
- **Simple Problem Solving:** Children can start solving basic problems, like adding one more toy to a group and recognizing the total.

Numeracy Development



Emerging Mathematicians (Ages 5-7)

- **Addition & Subtraction:** Children begin to understand simple addition and subtraction, often using their fingers or visual aids to help.
- **Recognizing Patterns:** Children can identify and create patterns, an early foundation for algebraic thinking.
- **Basic Geometry:** Understanding shapes, sizes, and spatial relationships becomes more refined.
- **Place Value:** Children start to understand the concept of tens and ones, an essential building block for more advanced math skills.

Numeracy Development



Developing Mathematicians (Ages 7-9)

- **Mastering Basic Operations:** Addition, subtraction, and even early multiplication/division skills are practiced more confidently.
- **Number Sense:** Children develop a stronger sense of numbers, comparing and ordering them, and working with larger numbers (up to 100 or 1,000).
- **Fractions & Decimals:** At this stage, children begin to encounter basic fractions, learning to represent parts of a whole.
- **Problem Solving:** Children are introduced to multi-step problems that require applying math skills in real-world contexts.

Numeracy Development



Mathematical Thinkers (Ages 9-12)

- **Advanced Operations:** Students master multiplication and division, and begin working with multi-digit numbers.
- **Fractions, Decimals & Percentages:** Children deepen their understanding of these concepts and start applying them to solve more complex problems.
- **Measurement & Data:** Students begin to measure lengths, areas, volumes, and interpret data from graphs and charts.
- **Introduction to Algebra:** The concept of variables and simple algebraic expressions are introduced as a foundation for higher-level math.



Literacy Development - 101



FROG

/f/ /r/ /ɒ/ /g/



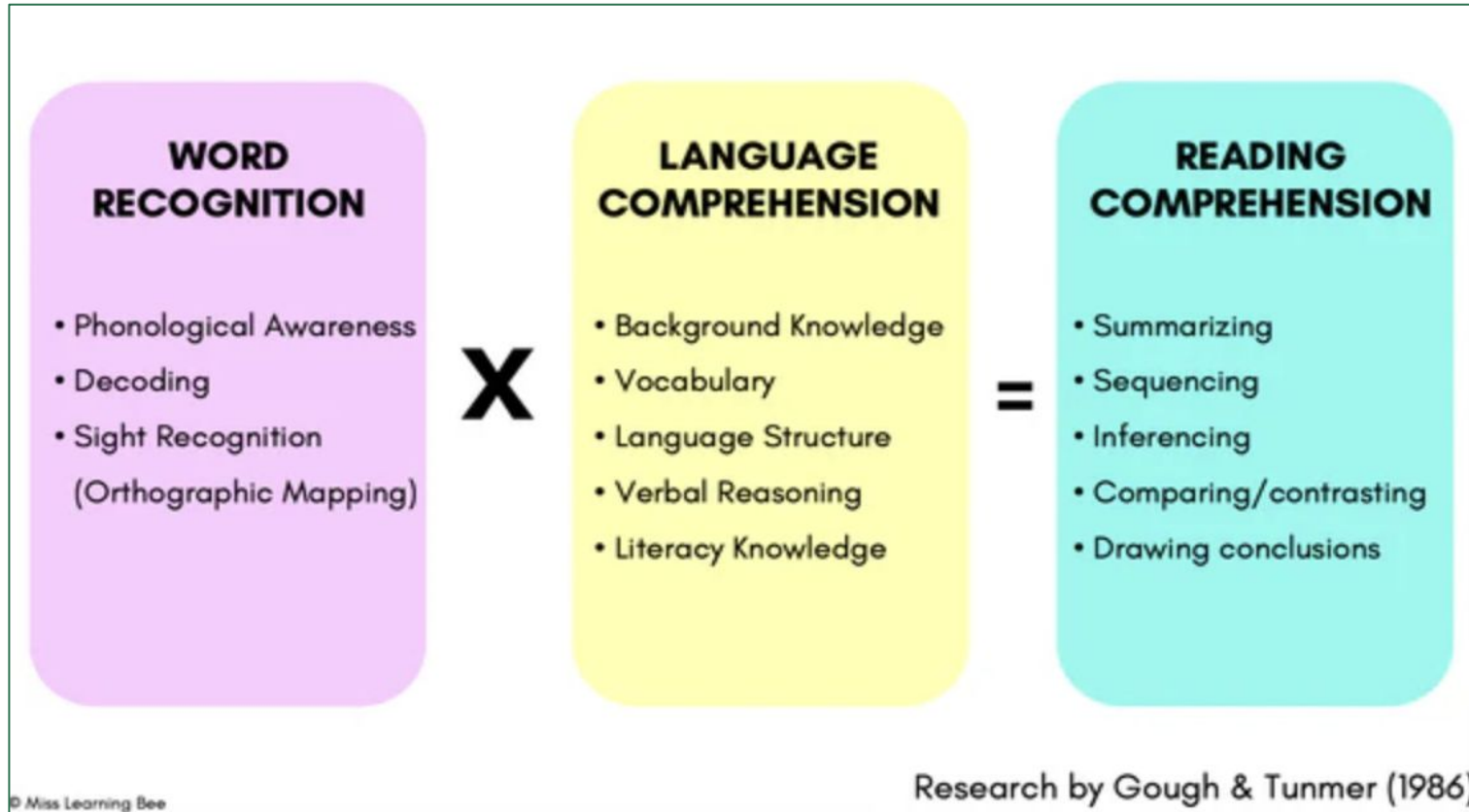


Literacy Developmental Progression

K	1	2	3
Phonological awareness			
Phonemic awareness Blending and segmenting phonemes			
Phonics instruction Grapheme-to-phoneme correspondence (letter-to-sound correspondences)			
Word study Orthographic patterns and morphemes for reading and spelling words			

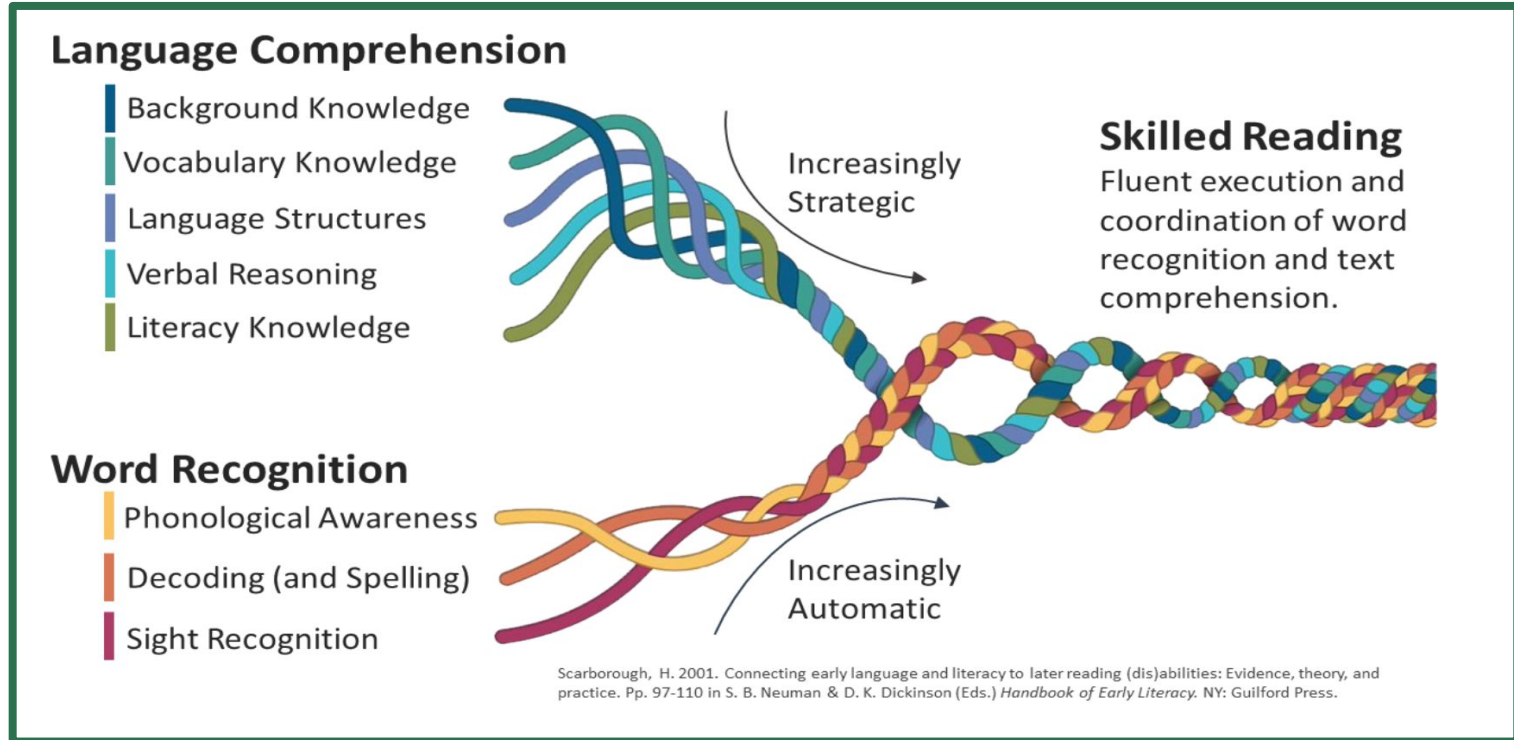


Literacy Development - *A Simple View*





Literacy Development - Skilled Reading





Literacy Development At Home: Top 10 Tips!

Literacy Development at Home: *Top 10 Tips*



1. Read Aloud Daily

- Create a daily routine of reading out loud with your young children. Reading to children exposes them to new vocabulary, models fluent reading, and helps them develop listening and comprehension skills

2. Create a Reading Routine

- Establish a regular reading time, like before bed or after dinner. Consistency builds a love for reading and helps make it part of children's daily lives

Literacy Development at Home: *Top 10 Tips*



3. Visit the Library Regularly

- [Libraries](#) offer a treasure trove of books and other resources. Make library visits a regular family activity to expose your child to a wide variety of books. Let them choose what interests them to foster a sense of autonomy and excitement about reading

4. Talk About the Stories

- Discuss the books/stories you read together with your children. Ask questions like, "What do you think will happen next?" or "Why do you think the character made that choice?" This discourse improves comprehension and critical thinking

Literacy Development at Home: *Top 10 Tips*



5. Model Reading Behavior

- Show your child that reading is important by letting them see you read. Whether it's books, magazines, or even online articles, demonstrating your enjoyment of reading helps foster their interest

6. Encourage Writing

- Encourage your child to write as part of their literacy development. Whether it's journaling, writing letters to family/friends, labeling items around the house, or writing your grocery list; writing reinforces reading skills

Literacy Development at Home: *Top 10 Tips*



7. Use Technology to Support Literacy

- Explore educational reading apps and audiobooks. These digital tools can provide interactive ways to engage your child in reading. You can listen to a book on a long car trip or during your commute to school!

8. Play Word Games

- Games like Scrabble, Boggle, Wordle, or simple rhyming games are great ways to make learning vocabulary and spelling fun. These activities enhance phonemic awareness and vocabulary

Literacy Development at Home: *Top 10 Tips*



9. Create a Print-Rich Environment

- Surround your child with books, magazines, and labeled objects. The more they see written language around them, the more familiar they will become with letters and words

10. Keep it fun, engaging and positive!

- Supporting a lifted and unstoppable approach to literacy learning at home!





Numeracy Development At Home: Top 10 Tips!

Numeracy Development at Home: *Top 10*



Tips

1. Integrate Math into Daily Activities

- **Counting:** Encourage your child to count items like toys, steps, or groceries while doing everyday tasks.
- **Cooking Together:** Use cooking as an opportunity to measure ingredients, double recipes, and talk about fractions.
- **Shopping and Budgeting:** Involve your child in comparing prices, making change, and estimating the total cost while shopping.



Numeracy Development at Home: *Top 10 Tips*



2. Play Math Games

- **Board and Card Games:** Play games like Uno, Monopoly, or Yahtzee that involve counting, strategy, or money management. [Card games](#) that involve counting provide a lot of reinforcement and practice of basic math facts.
- **Puzzles:** Use puzzles, tangram games and/or building blocks to enhance spatial awareness and problem-solving skills.
- **Number-based Apps:** Introduce fun math apps (like Prodigy or Khan Academy Kids) that make learning interactive and engaging

Numeracy Development at Home: *Top 10 Tips*



3. Talk About Math in Daily Conversations

- Use math-related language, such as “more than,” “less than,” “equal to,” “half,” and “double.” This helps familiarize children with mathematical terms and concepts.

4. Create a Math-Friendly Space

- Have manipulatives like counters, measuring tapes, rulers, or number lines easily accessible at home. These tools can help children visualize math concepts.

Numeracy Development at Home: *Top 10 Tips*



5. Encourage Estimation and Problem-Solving

- Ask your child to estimate how long an activity will take, how many items they see, or how much something weighs. This helps children see that math is about thinking and predicting, not just answering.

6. Celebrate Math Curiosity

- Encourage your child to ask questions about how things work, like time, speed, or patterns. Using everyday curiosities is a great springboard for exploring math.



Numeracy Development at Home: *Top 10 Tips*



7. Use Time and Money to Teach Math

- Teach your child to read clocks and understand the concept of time, as well as how to use money for counting, saving, and spending.

8. Promote Pattern Recognition

- Explore patterns in nature, art, or household objects. Ask your child to identify repeating patterns or create their own.





Numeracy Development at Home: *Top 10*

Tips

9. Incorporate Math in Storytelling

- Read books with math themes or that involve numbers, counting, or problem-solving to integrate literacy with math learning.

10. Keep it fun, low-key and interesting!

- Keep the math environment positive, fun, low-key and exciting! The goal is to maintain a love and excitement for learning- leaving your child feeling “Lifted and Unstoppable”





Creating a Supportive Learning Environment

Supportive Learning Environment at home



Consistent Routines:

- Set aside specific times for fun learning activities at home.

Positive Reinforcement:

- Celebrate small wins in literacy and math; helping your child build their confidence and love for learning!

Growth Mindset:

- Support a growth mindset by encouraging perseverance and viewing mistakes as part of the learning process!





Tools and Resources

Additional Learning and Resources



Stanford University: [DREME \(Development and Research in Early Math Education\)](#)

Harvard University: [In Brief: The science of Early Childhood Development](#)

Canadian Child Care Federation: [Ages and Stages of Numeracy Development](#)

[Reading Rockets](#): research, resources and helpful tips for parents

[University of Florida Literacy Institute](#)



Parent Questions



Coming Up: