

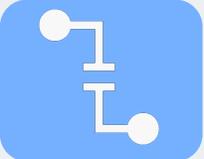


Foundations of Literacy

Understanding the Science of  
Reading

# What Is the Science of Reading?

# The History of Literacy Instruction

1800s	1900s	1980s	2000s	Present
<p>Early literacy instruction focuses on rote memorization and recitation, where children are taught to recognize words by repetition.</p>	<p>The debate between phonics and whole-word instruction begins. There is a divide on what to emphasize in early literacy instruction: decoding words or recognizing entire words by sight.</p>	<p>The whole-language approach gains traction, emphasizing that reading is a natural process and focusing more on comprehension and meaning-making rather than structured phonics.</p>	<p>A significant body of research in cognitive science fuels the science of reading movement, which emphasizes the importance of phonemic awareness and phonics as essential components of reading instruction.</p>	<p>Today, many educators embrace a “balanced literacy” approach, which aims to combine the best of both worlds: explicit phonics instruction and a focus on meaningful reading experiences.</p>
				

# What Is the Science of Reading?

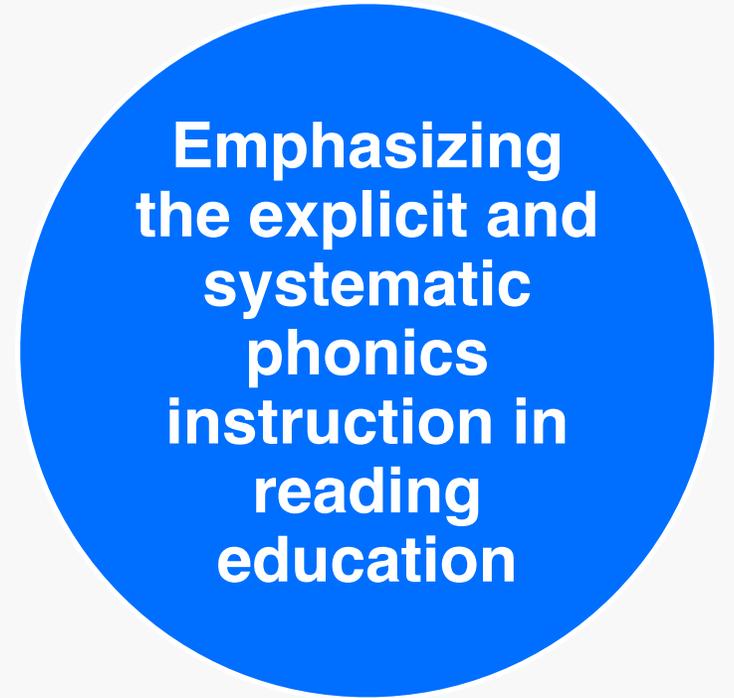
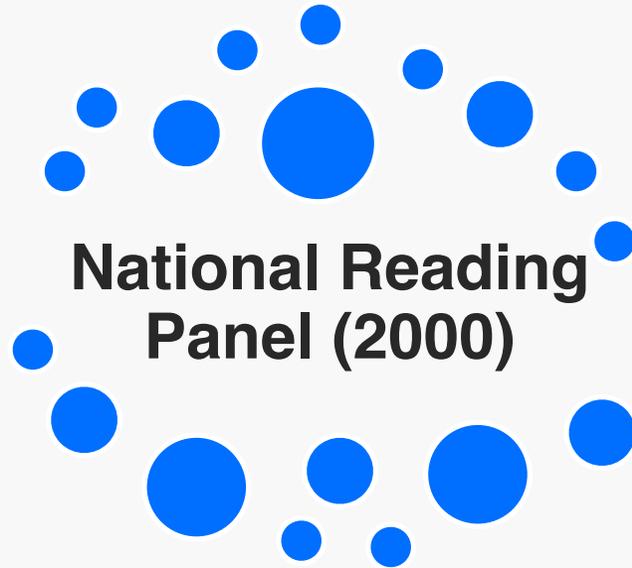
## Science of Reading

It refers to a body of research from cognitive science, neuroscience, and linguistics that explains how children learn to read.

It emphasizes explicit, systematic instruction in phonemic awareness, phonics, fluency, vocabulary, and comprehension.

Reading is not a natural process; the brain must be taught how to decode and comprehend text.

# The National Reading Panel's Evidence (2000 Report)

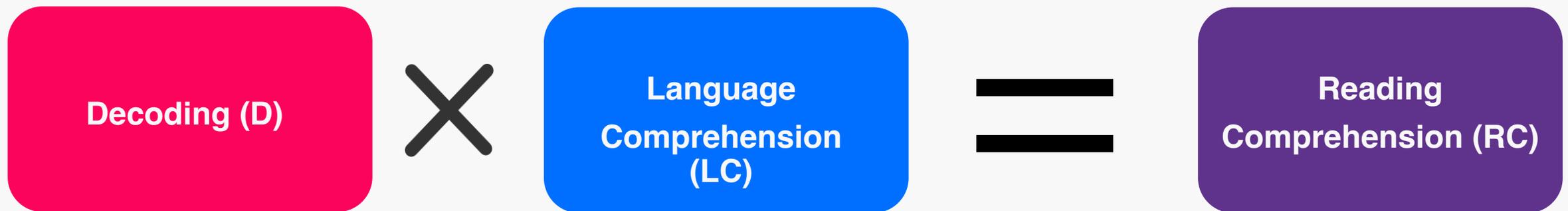


## Crucial components of reading instruction:

- Phonological awareness
- Phonics
- Fluency
- Vocabulary
- Comprehension

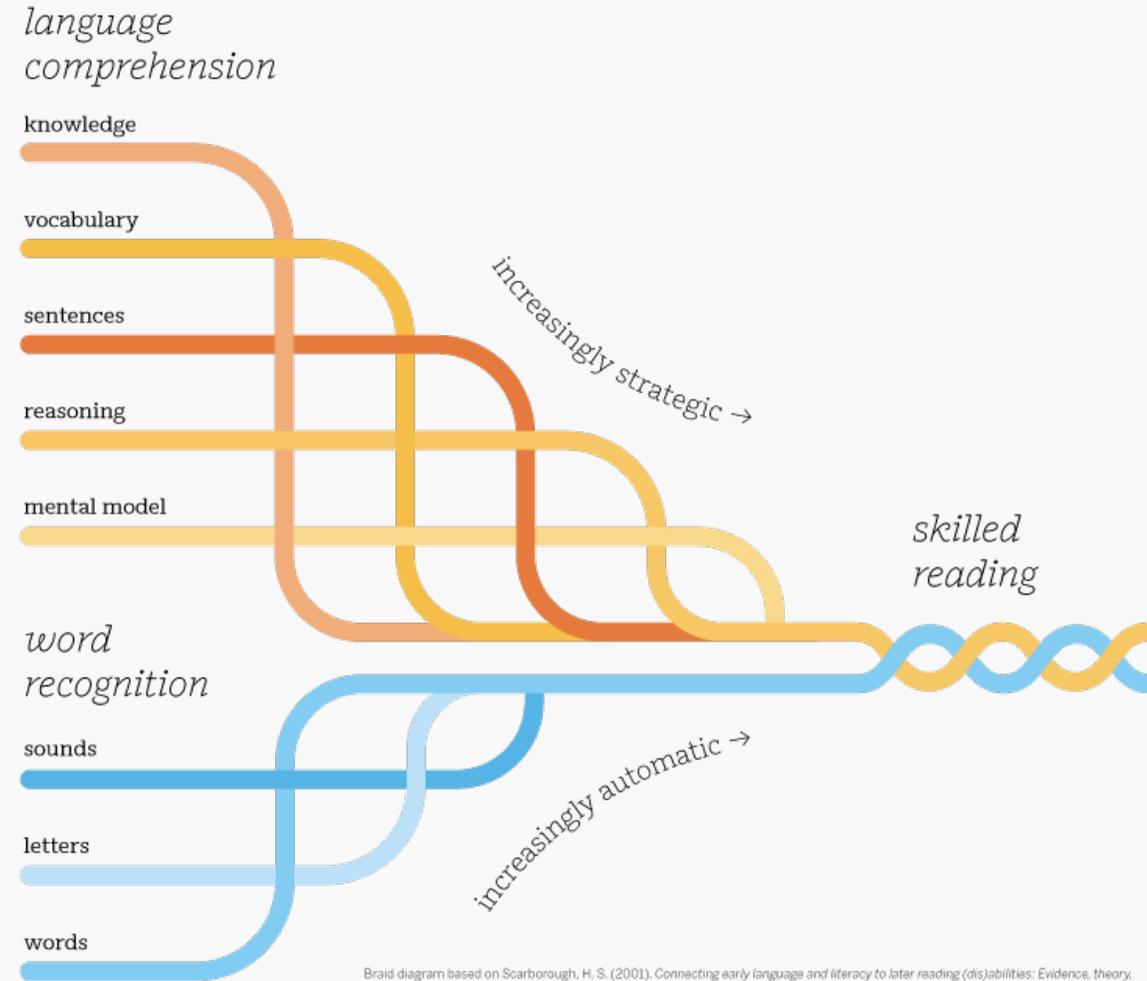
# The Simple View of Reading (Gough & Tunmer, 1986)

- The simple view of reading (Gough & Tunmer, 1986) shows that reading comprehension is the product of decoding (word recognition) and language comprehension.
- Without strong skills in both decoding and comprehension, students will struggle with reading.



# The Reading Rope (Scarborough, 2001)

- Reading comprehension results from the combination of word recognition (decoding) and language comprehension (understanding what you read).
- The strands of the reading rope:
  - Word recognition: phonological awareness, decoding, sight recognition
  - Language comprehension: background knowledge, vocabulary, language structures, verbal reasoning, literacy knowledge



Braid diagram based on Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook for Research in Early Literacy* (pp. 97-110). New York: Guilford Press.

# Myths About the Science of Reading

# Myth 1

## Reading Is a Natural Process, Like Learning to Speak



**Fact:** Unlike spoken language, which children naturally acquire through exposure and interaction, reading is a complex skill that requires explicit instruction. The brain doesn't naturally learn to read; it must be taught to decode written language and associate it with meaning.

## Myth 2

### Phonics Is the Only Important Component of Reading Instruction



**Fact:** While phonics is a crucial part of the science of reading, it's not the only component. Effective reading instruction also includes phonemic awareness, fluency, vocabulary, and comprehension. All these components work together to build strong reading skills.

# Myth 3

## The Science of Reading Ignores the Role of Comprehension



**Fact:** The science of reading emphasizes comprehension as a vital aspect of reading. Science of reading research shows that decoding skills (like phonics) and language comprehension must be developed simultaneously for students to become proficient readers.

# Myth 4

## The Science of Reading Is Only for Struggling Readers



**Fact:** The principles of the science of reading benefit all students, not just those who struggle with reading. The science of reading provides a structured and systematic approach to teaching reading that supports all learners in developing strong literacy skills.

# Myth 5

## The Science of Reading Neglects the Importance of Joy and Motivation in Reading



**Fact:** The science of reading supports the idea that learning to read should be an enjoyable process. The science of reading helps students build strong foundational skills, enabling them to become confident readers, which, in turn, fosters a love of reading. Effective science of reading instruction often includes engaging, meaningful reading experiences that motivate students.

# Myth 6

## Balanced Literacy and the Science of Reading Are Incompatible



**Fact:** While there are significant differences, elements of balanced literacy can be compatible with the science of reading when they include explicit, systematic instruction in phonics and other critical reading skills. The key is ensuring that foundational skills are taught explicitly and systematically within any literacy approach.

# Myth 7

## The Science of Reading Is Just a Fad



**Fact:** The science of reading is based on decades of scientific research from cognitive psychology, neuroscience, and linguistics. It has been validated through numerous studies, and its principles continue to guide effective reading instruction.

# Myth 8

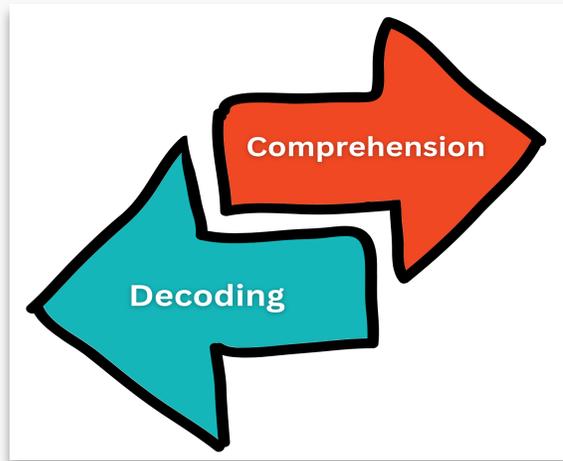
## The Science of Reading Is Too Rigid and Doesn't Allow for Teacher Creativity



**Fact:** The science of reading provides a structured framework, but it doesn't limit teacher creativity. Teachers can still design engaging, interactive lessons and use a variety of materials and activities, as long as they adhere to the principles of explicit and systematic instruction.

## Myth 9

### Students Who Learn to Read Through Phonics Won't Develop Comprehension Skills



**Fact:** Phonics instruction is essential for decoding, which is the first step toward comprehension. Once students can decode words fluently, they can focus more on understanding the text. The science of reading includes strategies for developing both decoding and comprehension skills.

# Myth 10

## The Science of Reading Is Only Relevant for Early Readers



**Fact:** While the science of reading is often associated with early reading instruction, its principles apply to all stages of reading development. Older students, particularly those who struggle with reading, can benefit from science of reading-based interventions that address gaps in their foundational skills.

# The Successful 7: Pillars of Literacy

# The Successful 7

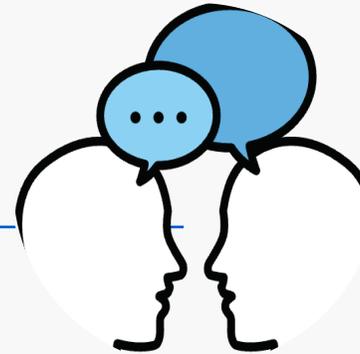


# Why Listening and Oral Language Are Critical

**Listening and oral language  
are the roots of all literacy  
development.**



Strong listening skills lead to a better understanding of spoken and written language.



Oral language development gives children the vocabulary and grammatical structures needed for reading comprehension.

# Listening: What, Why, and How



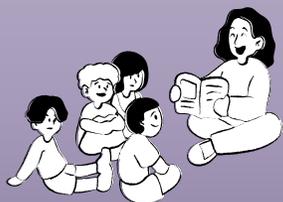
## What is it?

The ability to accurately hear and process sounds and spoken language.



## Why does it matter?

Listening is the first step in language acquisition, and it is critical for understanding instructions, social interactions, and stories.



## How to support it

Model active listening through eye contact, responding to what the child says, and encouraging focused listening during activities.

# Oral Language: What, Why, and How



## What is it?

The system of spoken communication, including vocabulary, grammar, and sentence structures.



## Why does it matter?

- Oral language is the foundation of literacy.
- Children need a strong vocabulary and understanding of sentence structures to read and write effectively.



## How to support it:

- Engage children in rich conversations.
- Use open-ended questions, and encourage children to explain their thinking.
- Expand on what children say to introduce new vocabulary and concepts.

# Vocabulary: What, Why, and How



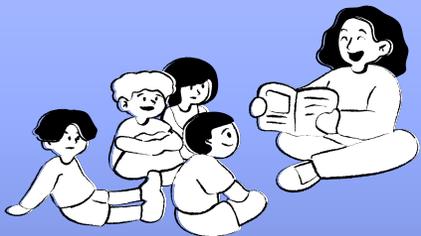
## What is it?

The set of words a person knows and understands.



## Why does it matter?

- A robust vocabulary is essential for reading comprehension.
- Children need to know a wide variety of words to understand what they read.



## How to support it:

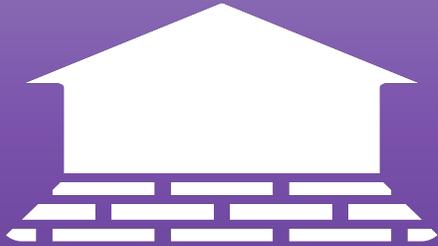
- Read aloud frequently and discuss new words.
- Introduce thematic vocabulary through play and activities.
- Encourage students to describe and label their surroundings.

# Phonological Awareness: What, Why, and How



## What is it?

The ability to recognize and manipulate sounds in spoken language, including rhyming, segmenting, and blending.



## Why does it matter?

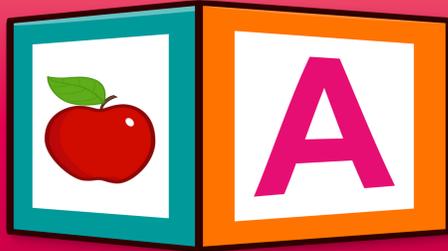
- Phonological awareness is the foundation of decoding and reading fluently.
- It helps children understand that words are made up of sounds that can be manipulated.



## How to support it:

- Play sound games, like rhyming and segmenting.
- Engage in activities like clapping out syllables and blending sounds.

# Phonics: What, Why, and How



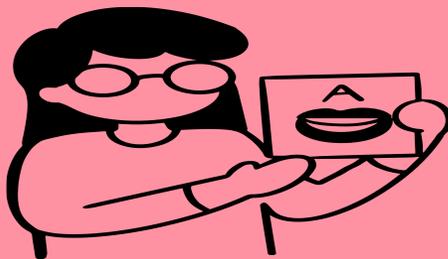
## What is it?

The relationship between letters and sounds, and how to use this knowledge to read and write.

bag  
•••

## Why does it matter?

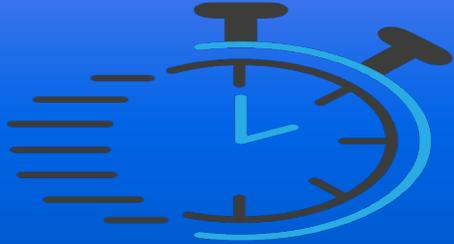
Phonics is crucial for decoding unfamiliar words, and it is a core skill for reading fluently and accurately.



## How to support it:

- Incorporate systematic and explicit phonics instruction.
- Practice decoding words by matching sounds to letters.
- Use phonics games and activities that encourage letter–sound recognition.

# Fluency: What, Why, and How



## What is it?

The ability to read text accurately, quickly, and with expression.



## Why does it matter?

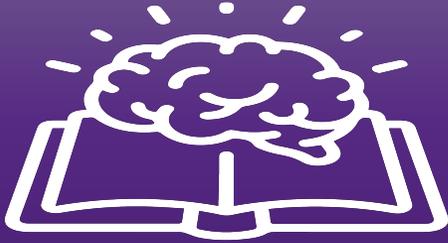
- Fluent readers can focus on understanding the text rather than decoding each word.
- Fluency is necessary for reading comprehension.



## How to support it:

- Practice reading aloud with guided repetition.
- Use partner reading, and model fluent reading.

# Comprehension: What, Why, and How



## What is it?

The ability to understand and make meaning from what is read.



## Why does it matter?

- Comprehension is the ultimate goal of reading.
- Without it, reading is simply decoding words.



## How to support it:

- Ask questions before, during, and after reading.
- Encourage children to make connections to their experiences.
- Teach children strategies like summarizing and predicting.

# Systematic, Structured, and Explicit Approaches to Literacy Instruction

# The Importance of a Structured Approach to Literacy

<b>Clarity and Consistency</b>	Systematic, explicit instruction provides clear and consistent teaching that ensures that all students receive the same foundational skills in a logical sequence.
<b>Building on Prior Knowledge</b>	This approach helps students build on what they already know, gradually increasing the complexity of tasks as they master earlier skills.
<b>Addressing Diverse Learning Needs</b>	By being systematic and explicit, teachers can ensure that no child is left behind, as each step in the instruction is carefully planned and delivered.
<b>Preventing Gaps in Learning</b>	A structured approach minimizes the risk of gaps in students' reading development, which can occur if instruction is haphazard or assumes prior knowledge that hasn't been adequately taught.

# Implementing Systematic and Explicit Literacy Instruction

## 1. Structured Sequence

Start with basic skills (e.g., letter sounds) and progress to more complex ones (e.g., blending sounds). Lessons build on each other in a planned sequence.

## 2. Direct Instruction

Explicitly teach phonics rules and patterns, modeling concepts before students practice them.

## 3. Multiple Practice Opportunities

Provide various contexts for practicing new skills, such as word sorting and reading decodable books, to reinforce learning.

## 4. Immediate Feedback

Offer corrective feedback as students practice, explaining the “why” behind the reasoning and having them try again.

## 5. Cumulative Review

Regularly revisit previously learned skills to reinforce and ensure retention, such as reviewing "ch" and "sh" sounds together.

## 6. Assessment-Driven Instruction

Use ongoing assessments to guide instruction and adjust pacing based on students' mastery, including quick checks, like exit tickets.

# Steps for Effective Systematic and Explicit Instruction

5

Continuously assess progress and adjust instruction based on student needs. Provide reteaching or additional practice as necessary.



Monitor and Adjust

4

Allow students to practice skills independently with tasks such as reading decodable texts or writing sentences.



Independent Practice

3

Use structured activities, like choral reading and guided groups, to practice skills with teacher support.



Guided Practice

2

Introduce skills with clear lessons, direct instruction, and modeling. Guide initial student practice.



Teach Explicitly

1

Identify key skills based on assessment data and curriculum standards. Create a scope and sequence, outlining the order of instruction.



Plan With Purpose

# Why a Structured Approach to Literacy Matters

## Closes the Achievement Gap

A structured approach helps all students, including those at risk, build strong reading foundations.

## Provides Scaffolding

While it may seem rigid, this approach gives students the scaffolding they need to become independent readers.

## Ensures Long-Term Success

This method supports students in developing reading skills that will lead to academic success across all subjects.

# The Science of Reading in Pre-K

# Building the Foundation for Reading in Pre-K

- The early years are critical for developing pre-reading skills.
- Phonological awareness, vocabulary, and oral language are building blocks of reading.
- These skills are precursors to formal reading instruction in kindergarten and beyond.

## Pre-Reading (Birth–Age 6)

- Alphabet knowledge
- Concepts of print
- Vocabulary
- Phonological awareness

## Initial Reading and Decoding (Grades K–1)

- Phonics
- Decoding
- Encoding
- High-frequency words

## Confirmation and Fluency (Grades 2–3)

- Vocabulary
- Fluency
- Comprehension

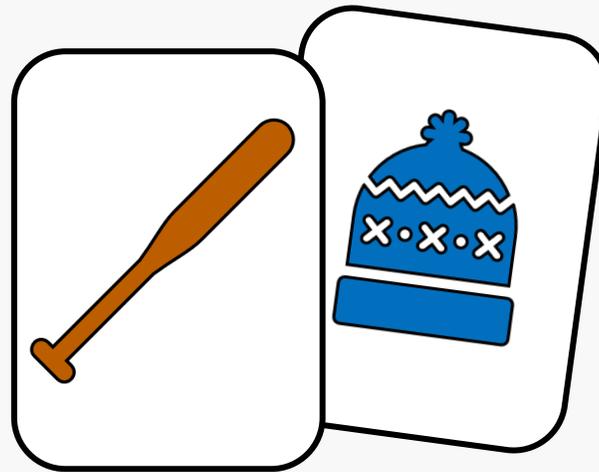
## Reading for Learning the New (Grades 4–8)

- Expanded vocabulary
- Increased comprehension
- Critical reading skills

# Developing Phonological Awareness in Pre-K

- Phonological awareness involves recognizing and manipulating sounds in spoken language.
- Phonological awareness activities, like rhyming games, clapping syllables, and identifying the first sound in words, are perfect for pre-K students.
- Playful and engaging activities align with how young children learn best.

dog  
↙   ↓   ↘  
/d/   /o/   /g/



el/e/phant  


# Enhancing Oral Language in Pre-K

- Oral language supports vocabulary and comprehension in reading development.
- Strategies include interactive read-alouds, storytelling, and conversations.
- Rich, language-filled environments are crucial for building these skills.



# Expanding Vocabulary in Pre-K

## Transportation Words

Bus



Airplane



Sailboat



# B b

Ball



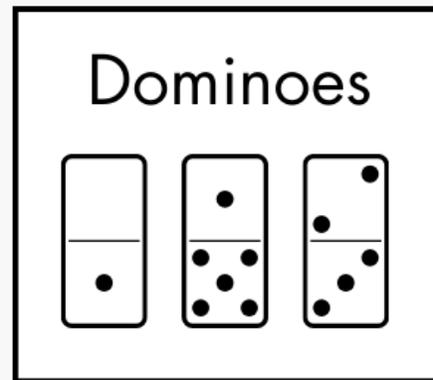
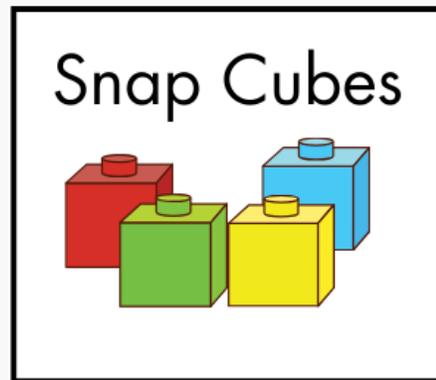
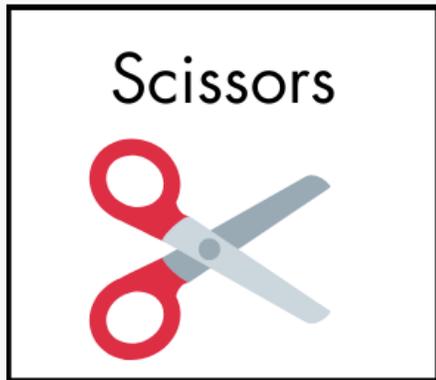
Bear



- Vocabulary development directly impacts reading comprehension.
- Strategies include introducing new words through thematic units, books, and conversations.
- Connect new words to children's experiences and background knowledge.

# Introducing Print Awareness in Pre-K

- Print awareness is understanding that print carries meaning and recognizing letters and words.
- Show how books are handled, point to words as you read, and use environmental print.
- Incorporate print into the classroom through labels, signs, and charts.





## Integrating Play With Literacy Instruction

- Play-based activities can develop early literacy skills in a natural way.
- Literacy centers, dramatic play with writing stations, and using puppets for storytelling are all great ways to integrate playful literacy learning.
- Play is an engaging and powerful way to support language and literacy.

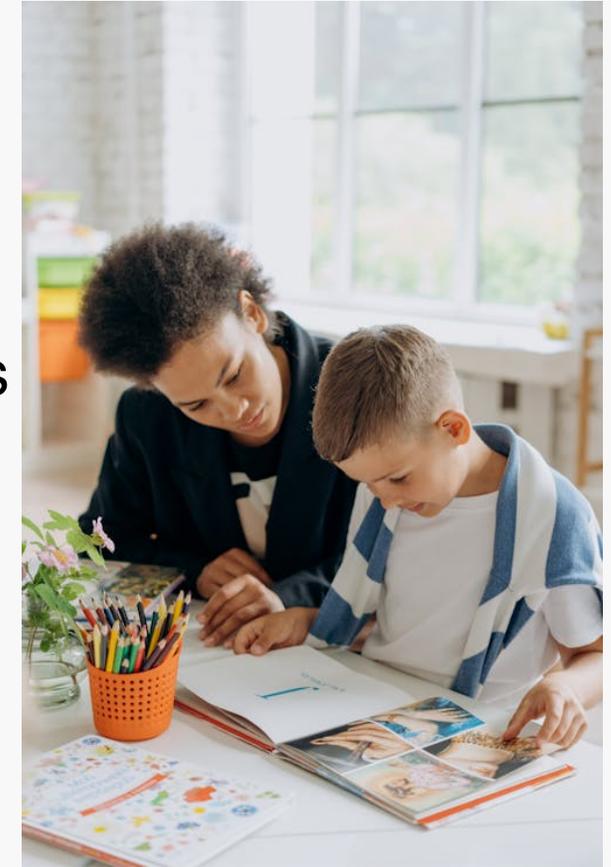
# Partnering With Families in Early Literacy

- Engage parents and caregivers in supporting literacy at home.
- Encourage reading aloud, talking with children, and supporting early writing (e.g., scribbles, drawing).
- Suggest simple activities that families can do at home to reinforce classroom learning.



# Observing and Assessing Early Literacy Development

- Formative assessment in pre-K monitors progress without formal testing.
- Teachers can observe key areas like phonological awareness, vocabulary, and print awareness.
- Use observations to inform instruction and tailor lessons to student needs.



**Literacy Skills Checklist**

**Concepts of Print**

- Identifies appropriate book orientation
- Distinguishes print from pictures
- Demonstrates understanding of print directionality
- Identifies book parts and features (title, author/illustrator, cover)

**Notes:**

# Supporting All Learners in Pre-K

- Differentiate instruction to meet the needs of diverse learners, including English language learners and children with developmental delays.
- Use visual supports, multisensory activities, and scaffolding to help all children access early literacy.
- Create an inclusive classroom where all children feel supported.



# Designing a Literacy-Rich Pre-K Classroom

- Set up a classroom with a well-stocked library, labeled centers, and opportunities for interacting with print.
- Display children's work, including their early writing attempts, to build confidence.
- Provide spaces for independent and group literacy activities.



# The Science of Reading in Early Elementary

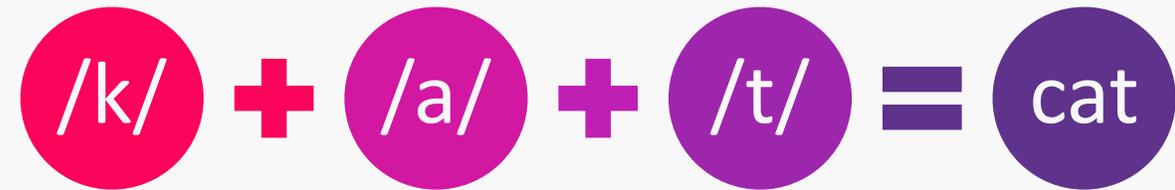


## Implementing Systematic and Explicit Instruction

- Systematic and explicit instruction is essential for phonics and phonemic awareness.
- This type of instruction helps students connect sounds and letters for decoding.
- Classroom examples:
  - Step-by-step phonics lessons
  - Clear modeling of letter–sound relationships
  - Guided practice and review

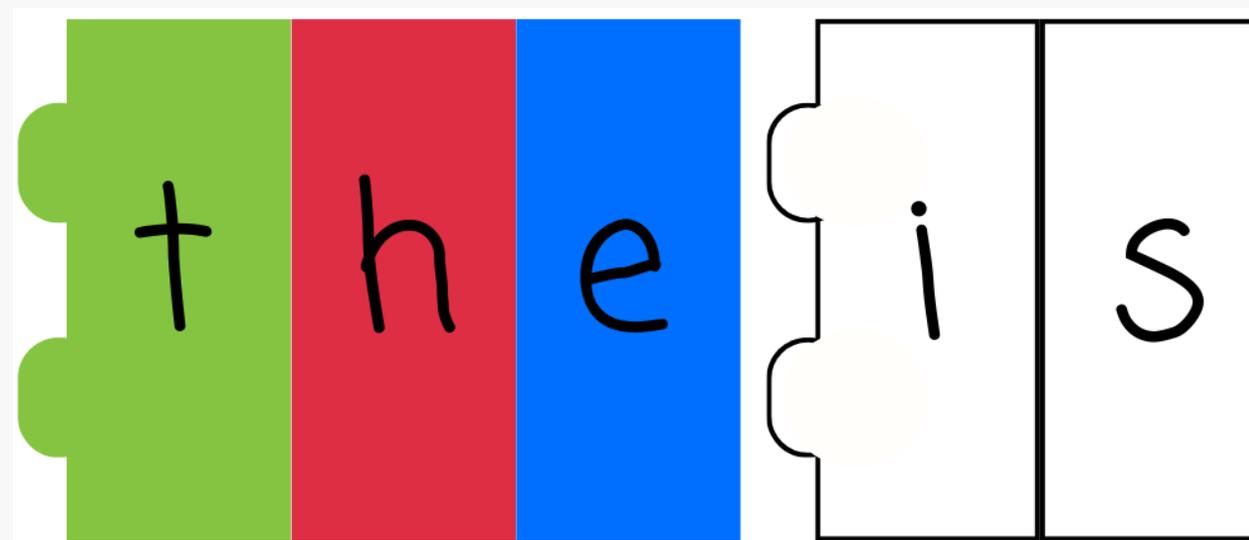
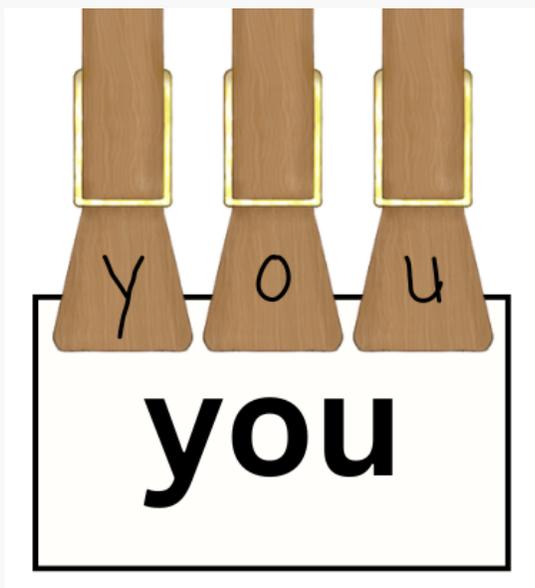
## Deepening Phonemic Awareness in Early Elementary

- Phonemic awareness is a key predictor of reading success.
- Activities:
  - Segmenting and blending sounds
  - Manipulating sounds in words
- Integrate phonemic awareness into daily routines (e.g., morning meetings, transitions, etc.).



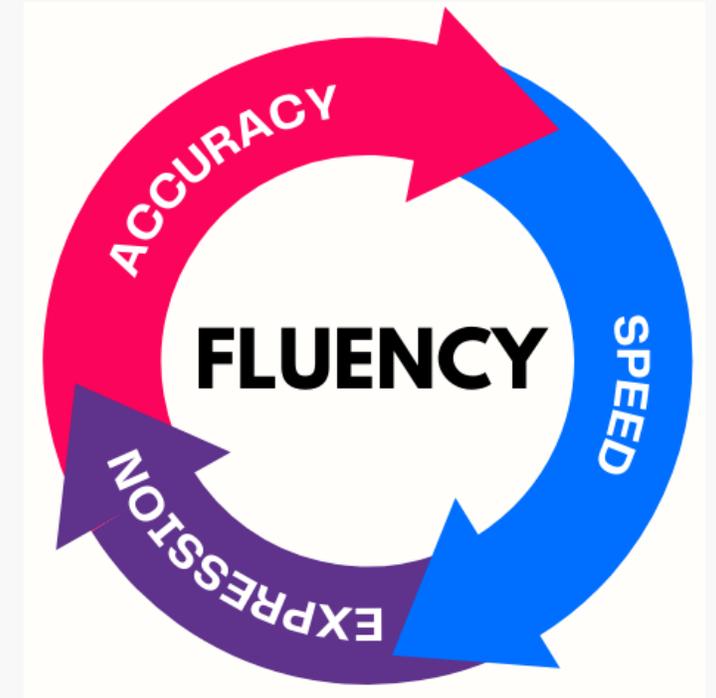
# Effective Phonics Instruction in Early Elementary

- Phonics teaches letter–sound correspondences for decoding words.
- A structured phonics program includes:
  - Sequence of letter–sound matching
  - Blending and decoding practice
- Examples:
  - Sound sorting
  - Word building
  - Decodable readers



# Building Fluency in Early Readers

- Fluency involves accuracy, speed, and expression.
- It frees cognitive resources for comprehension.
- Strategies:
  - Repeated reading
  - Choral reading
  - Using decodable texts



# Expanding Vocabulary in Early Elementary

- Vocabulary is essential for reading comprehension and language development.
- Vocabulary instruction should take place through both direct and indirect instruction.

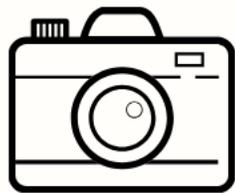
## Direct Vocabulary Strategies

- Explicit teaching of vocabulary words
- Word mapping
- Vocabulary games
- Vocabulary journals

## Indirect Vocabulary Strategies

- Student conversations and discussion
- Independent reading
- Storytelling and narrative play
- Classroom labels and environmental print

**Picture of the word**



**Sentence using the word**

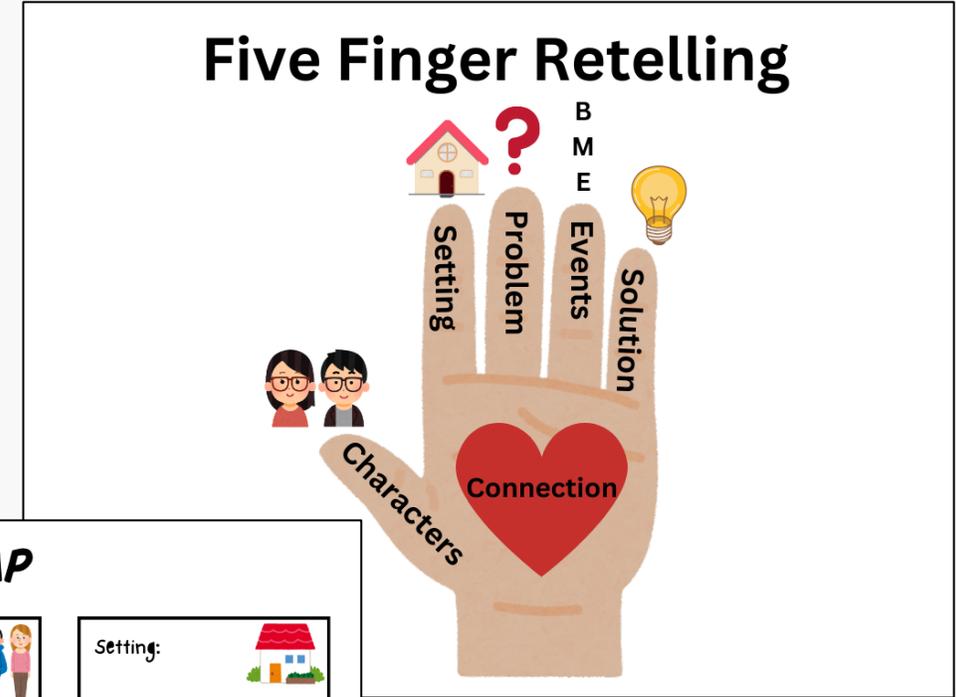
The dog was \_\_\_\_\_

**Opposite of the word**



# Early Comprehension Skills

- Comprehension strategies:
  - Predicting
  - Questioning
  - Retelling
- Integration:
  - Model strategies during read alouds
  - Use visual aids and story maps



**STORY MAP**

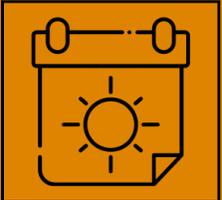
Title: Author:	Characters: 	Setting: 
Beginning: <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	Middle: <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	End: <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

# Integrating Writing to Support Reading

- Including writing connections reinforces phonics and comprehension skills.
- Activities:
  - Writing simple sentences
  - Labeling pictures
  - Creating class books
- Engage in interactive writing by collaborating with students to model writing.



**OPINION WRITING**



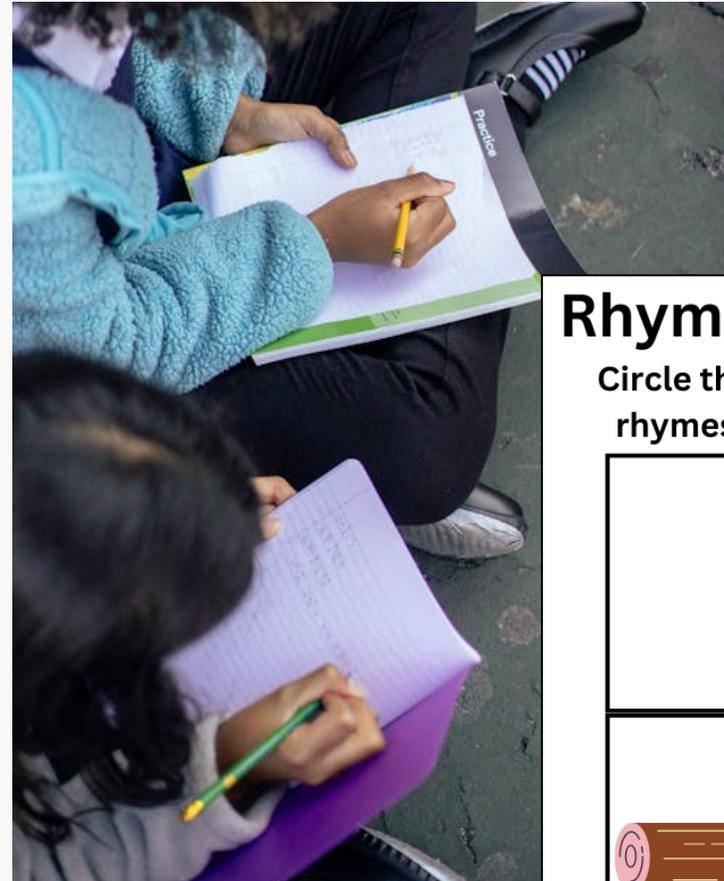
Do you like summer or winter?

I like \_\_\_\_\_

because \_\_\_\_\_

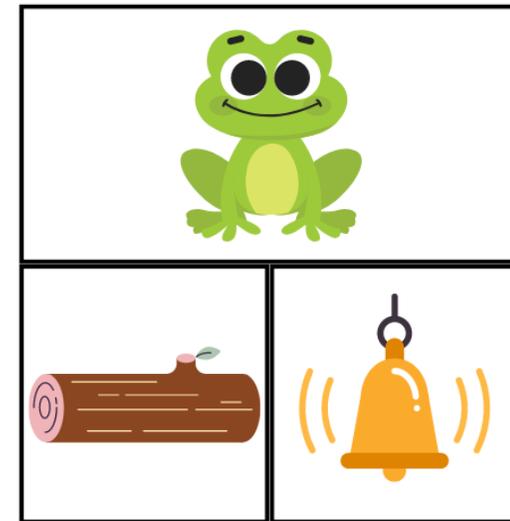
# Monitoring Progress

- Regular checks on phonics, fluency, and comprehension are an important assessment practice.
- Tools and strategies:
  - Phonemic awareness screenings
  - Running records
  - Fluency checks
  - Formative assessments, like exit tickets and observation checklists



## Rhyming Exit Ticket

Circle the bottom picture that rhymes with the top picture



# Supporting All Learners

- Differentiation is key to tailoring instruction for diverse learners.
- Strategies:
  - Small-group instruction
  - Leveled readers
  - Multisensory approaches
- Inclusivity is an important step to ensure that all students access the curriculum.



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