



AIM Institute for Learning & Research

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Virtual Teaching Techniques For Inference

AIM Pathways to Practice Webinar Series



Why Is It Important?

The research...

LANGUAGE COMPREHENSION

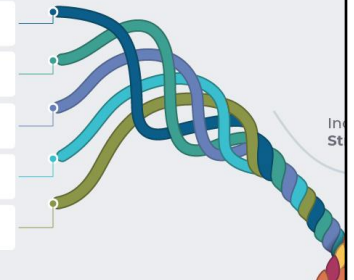
BACKGROUND KNOWLEDGE
(facts, concepts, etc.)

VOCABULARY
(breadth, precision, links, etc.)

LANGUAGE STRUCTURES
(syntax, semantics, etc.)

VERBAL REASONING
(inference, metaphor, etc.)

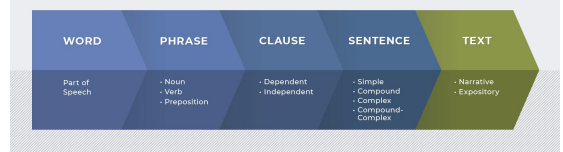
LITERACY KNOWLEDGE
(print concepts, genres, etc.)



“Comprehension is an **INTEGRATIVE** process, in which information from different sentences is combined **and** a **CONSTRUCTIVE** process, in which explicit information in a sentence or sentences is supplemented by knowledge about the world from long-term memory.”

– Kate Cain, 2009

How To Build Meaning



Local coherence inference:

- Primarily **integrative** in nature
- Integration of ideas at the **surface code** of the text
- Bridging inferences using **cohesive devices**
- Often **automatic**

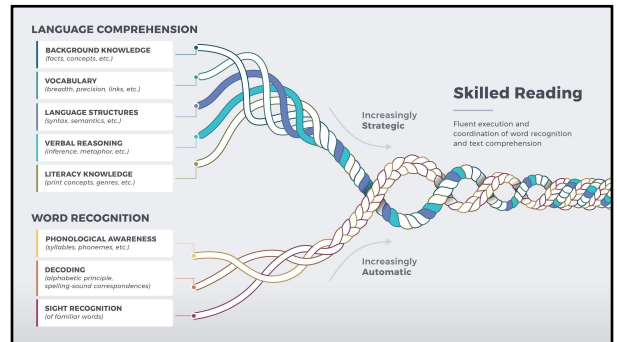
"In order to construct a mental model of the text, the comprehender needs to integrate information from different sentences to establish **local coherence**."

– Cain & Oakhill, 2007



What Should I Teach?

Breaking it down...



LOCAL COHERENCE

Cohesive Devices: the semantic and syntactic links that assist the reader in bridging and integrating information within and between sentences and paragraphs

- Cohesive Ties:** take their meaning from another part of sentence or sentences
- Connectives:** are words or phrases that signal a logical relationship between the parts of a sentence or between separate sentences and paragraphs

LOCAL COHERENCE

- Pronoun Referents
- Synonyms/Substitutions
- Repetitions
- Ellipsis
- Connectives (Conjunctions)

BookWise

The Amazon Rainforest

to read

The Amazon rainforest is the largest tropical rainforest in the world. It is located in the north-central part of South America, mostly in Brazil, but also in parts of Colombia, Venezuela, Ecuador, Peru, Guyana, and French Guiana. The rainforest is home to a vast number of different plants and animals, many of which are found nowhere else in the world. It is also home to many different tribes of people.

The Amazon rainforest is a very important part of the world's environment. It helps to regulate the climate, produce oxygen, and absorb carbon dioxide. It is also a source of many different medicines and foods.

Another important fact about the Amazon rainforest is that it is being destroyed at a very fast rate. This is because of logging, farming, and mining. If the rainforest is destroyed, it will have a very bad effect on the world's environment.

There are many different animals and plants in the Amazon rainforest. Some of the most famous animals are the jaguar, the anaconda, and the toucan. There are also many different plants, including the Brazil nut tree and the rubber tree.

People are trying to protect the Amazon rainforest. They are doing this by creating national parks and reserves. They are also trying to teach people about the importance of the rainforest.

LOCAL COHERENCE

Example of Pronoun Referents

Another important fact about the Amazon rainforest is **its** role in storing carbon dioxide for our earth. Since **it** contains so many trees, which absorb carbon dioxide the way we breathe oxygen, the rainforest is often called the lungs of our planet. And since carbon is a "greenhouse gas" that heats up our atmosphere, the Amazon helps to keep our planet cool by storing carbon in its plants. So, even though the Amazon is far away from many places in the world, **it** still plays an important role. Unfortunately, many of the amazing plants, animals, and humans in the Amazon are under threat. People are using the Amazon to grow plants for humans, like bananas and sugar cane plants. Others are digging holes in the earth to look for oil or gas reserves, and still, others are cutting down the trees for lumber. To do this, developers are building farms, roads, and factories in areas where rare plants and animals thrive. This is a big problem for several reasons.

– The Amazon Rainforest, *ReadWorks*

LOCAL COHERENCE

Example of Synonyms/Substitutions

Another important fact about the Amazon rainforest is its role in storing carbon dioxide for our earth. Since it contains so many trees, which absorb carbon dioxide the way we breathe oxygen, the rainforest is often called **the lungs of our planet**. And since carbon is a "greenhouse gas" that heats up our atmosphere, the Amazon helps to keep our planet cool by storing carbon in its plants. So, even though the Amazon is far away from many places in the world, it still plays an important role. Unfortunately, many of the amazing plants, animals, and humans in the Amazon are under threat. People are using the Amazon to grow plants for humans, like bananas and sugar cane plants. Others are digging holes in the earth to look for oil or gas reserves, and still, others are cutting down the trees for lumber. To do this, developers are building farms, roads, and factories in areas where rare plants and animals thrive. This is a big problem for several reasons.

– The Amazon Rainforest, *ReadWorks*

LOCAL COHERENCE

Example of Repetitions

Another important fact about the **Amazon** rainforest is its role in storing carbon dioxide for our earth. Since it contains so many trees, which absorb carbon dioxide the way we breathe oxygen, the rainforest is often called the lungs of our planet. And since carbon is a "greenhouse gas" that heats up our atmosphere, the **Amazon** helps to keep our planet cool by storing carbon in its plants. So, even though the **Amazon** is far away from many places in the world, it still plays an important role. Unfortunately, many of the amazing plants, animals, and humans in the **Amazon** are under threat. People are using the **Amazon** to grow plants for humans, like bananas and sugar cane plants. Others are digging holes in the earth to look for oil or gas reserves, and still, others are cutting down the trees for lumber. To do this, developers are building farms, roads, and factories in areas where rare plants and animals thrive. This is a big problem for several reasons.

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LOCAL COHERENCE

Example of Ellipses

Another important fact about the Amazon rainforest is its role in storing carbon dioxide for our earth. Since it contains so many trees, which absorb carbon dioxide the way we breathe oxygen, the rainforest is often called the lungs of our planet. And since carbon is a "greenhouse gas" that heats up our atmosphere, the Amazon helps to keep our planet cool by storing carbon in its plants. So, even though the Amazon is far away from many places in the world, it still plays an important role **[in storing carbon dioxide for our Earth]**. Unfortunately, many of the amazing plants, animals, and humans in the Amazon are under threat. People are using the Amazon to grow plants for humans, like bananas and sugar cane plants. Others are digging holes in the earth to look for oil or gas reserves, and still, others are cutting down the trees for lumber. To do this, developers are building farms, roads, and factories in areas where rare plants and animals thrive. This is a big problem for several reasons.

– The Amazon Rainforest, *ReadWorks*

LOCAL COHERENCE

Example of Connectives (Conjunctions)

Another important fact about the Amazon rainforest is its role in storing carbon dioxide for our earth. **Since** it contains so many trees, **which** absorb carbon dioxide the way we breathe oxygen, the rainforest is often called the lungs of our planet. And since carbon is a "greenhouse gas" that heats up our atmosphere, the Amazon helps to keep our planet cool by storing carbon in its plants. So, **even though** the Amazon is far away from many places in the world, it still plays an important role. Unfortunately, many of the amazing plants, animals, and humans in the Amazon are under threat. People are using the Amazon to grow plants for humans, like bananas and sugar cane plants. Others are digging holes in the earth to look for oil or gas reserves, **and** still, others are cutting down the trees for lumber. To do this, developers are building farms, roads, and factories in areas where rare plants and animals thrive. This is a big problem for several reasons.

– The Amazon Rainforest, *ReadWorks*



How Do I Teach It?

Evidence-based lessons...

INSTRUCTIONAL APPROACHES

Intentional on-purpose instruction (direct instruction)

- Grammar activities
- Sentence-level activities
- Sentence-level questioning
- Cohesive device activities

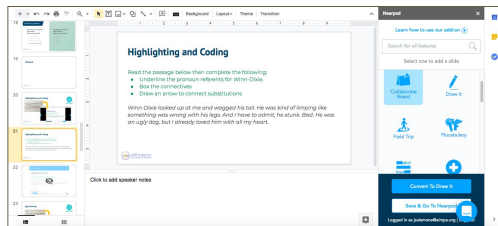
Incidental on-purpose opportunities (indirect instruction)

- Read-aloud
- Think-aloud
- Connect
- Talk

Cohesive Device:

- Cued Selection
- Highlighting and Coding
- Questioning
- Cloze Tasks
- Combining Sentences
- Sentence Expansion

Nearpod and Google Slides



Highlighting and Coding

Directions: Read the passage below then complete the following:

- Underline the pronoun refers for the "Amazon rainforest."
- Box the connectives.
- Draw an arrow to connect substitutions/synonyms.

Another important fact about the Amazon rainforest is that it helps in storing carbon dioxide for our earth. which absorbs rainforest and greenhouse keep our planet cool by storing carbon in its plants.

Highlighting and Coding

Read the passage below and complete the following:

- Underline the pronoun refers for the "Amazon rainforest."
- Box the connectives.
- Draw an arrow to connect substitutions/synonyms.

Another important fact about the Amazon rainforest is that it helps in storing carbon dioxide for our earth. which absorbs rainforest and greenhouse keep our planet cool by storing carbon in its plants.

Questioning

Directions: Read the sentence below then answer the following questions.

Since it contains so many trees, which absorb carbon dioxide the way we breathe oxygen, the rainforest acts like the lungs of our planet.

What is "it"? the rainforest

Which word signals a cause and effect relationship of the Amazon and their job absorbing carbon dioxide in our planet? Since

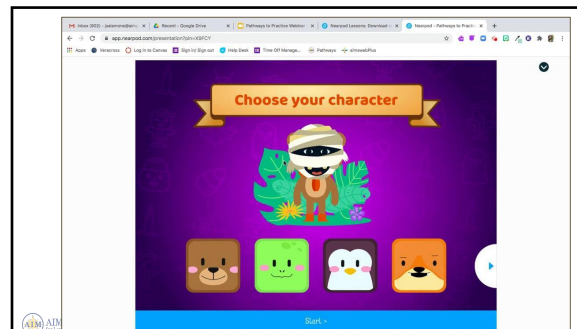
Which word signals a cause and effect relationship between the trees of the Amazon and their job absorbing carbon dioxide for our planet?

Question #2

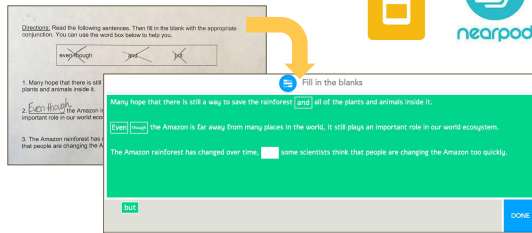
Since it contains so many trees, which absorb carbon dioxide the way we breathe oxygen, the rainforest acts like the lungs of our planet.

Which word signals a cause and effect relationship between the trees of the Amazon and their job absorbing carbon dioxide for our planet?

so acts since it



Cloze Tasks



Directions: Read the following sentences. Then fill in the blank with the appropriate conjunction. You can use the word box below to help you.

- Many hope that there is still a way to save the rainforest and all of the plants and animals inside it.
- Even though the Amazon is far away from many places in the world, it still plays an important role in our world ecosystem.
- The Amazon rainforest has changed over time, but some scientists think that people are changing the Amazon too quickly.

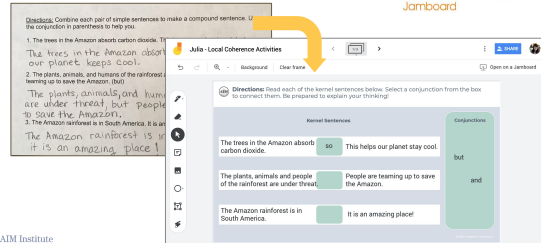
Fill in the blanks

but **DONE**



Connections to Writing

Combining Sentences

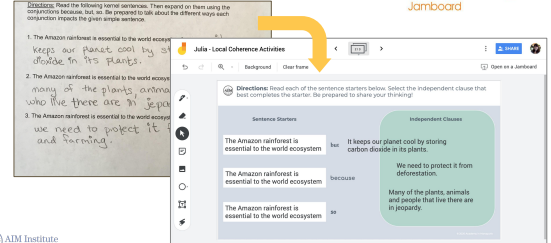


Directions: Combine each pair of simple sentences to make a compound sentence. Use the conjunctions provided to help you.

- The trees in the Amazon absorb carbon dioxide. The trees in the Amazon absorb carbon dioxide.
- The plants, animals, and humans of the rainforest are under threat, but people are learning up to save the Amazon.
- The Amazon rainforest is in South America. It is an amazing place.

Conjunctions: so, but, and, because, even though

Expanding Sentences: Part 1



Directions: Read the following kernel sentences. Then expand on them using the conjunctions below. Be prepared to explain your thinking!

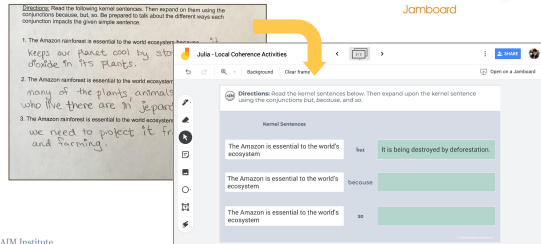
- The Amazon rainforest is essential to the world ecosystem. The Amazon rainforest is essential to the world ecosystem. The Amazon rainforest is essential to the world ecosystem.
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Sentence Starters: The Amazon rainforest is essential to the world ecosystem. The Amazon rainforest is essential to the world ecosystem. The Amazon rainforest is essential to the world ecosystem.

Independent Clauses: It keeps our planet cool by absorbing carbon dioxide in its plants. We need to protect it from deforestation. Many of the plants, animals, and people that live there are in jeopardy.

Conjunctions: so, but, and, because, even though

Expanding Sentences: Part 2



Directions: Read the following kernel sentences. Then expand on them using the conjunctions below. Be prepared to explain your thinking!

- The Amazon rainforest is essential to the world ecosystem. The Amazon rainforest is essential to the world ecosystem. The Amazon rainforest is essential to the world ecosystem.
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Kernel Sentences: The Amazon rainforest is essential to the world ecosystem. The Amazon rainforest is essential to the world ecosystem. The Amazon rainforest is essential to the world ecosystem.

Independent Clauses: It is being destroyed by deforestation. because. It is being destroyed by deforestation. because. It is being destroyed by deforestation. because.

Conjunctions: so, but, and, because, even though

Inclusive Instructional Practices

- Although automatic for the skilled reader, we cannot assume all students understand the role of cohesive devices
- Local coherence inference-making is highly dependent upon vocabulary and memory
- Can impact students with language-based learning differences and English Learners
- Interventions include:
 - Building vocabulary knowledge
 - Using pictorial supports to teach connectives
 - Highlighting to draw reader's attention to various cohesive devices

Pathways to Structured Literacy

The Specialist's Lens:

Course Details:

- Learn how to create diagnostic and prescriptive literacy instruction that makes effective use of assessment data in foundational reading and spelling skills
- Orton-Gillingham based
- Participants have completed the *Pathways to Proficient Reading* course or foundational SOR course



Pathways to Structured Literacy

The Specialist's Lens:

Practicum Details:

- Student tutoring
 - Minimum of 50 student intervention sessions
 - Minimum of 14 Weeks of student contact
 - Minimum of 45 Minutes per intervention session
 - Pre- and post-assessment sessions
- 5 Formal Observations
- Submission of lesson plans and student work
- 8 - 10 additional 30-minute coaching conferences with the practicum supervisor to ensure fidelity of implementation
- Maintain a digital Practicum Portfolio



"Learning to read literally **rewrites** the organization of the brain. Since we are not born to read, in contrast to speaking, instruction of some sort is necessary to engage these regions of the brain."

– Liberman, 1997



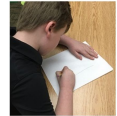
Tactile-Kinesthetic Reinforcement

Once the visual discovery is completed, the instruction shifts to tactile-kinesthetic reinforcement of the sound-symbol correspondence. There are various ways to accomplish this reinforcement and structured literacy curriculums use different techniques.

For example, using a flat palm or two fingers, students may write the letter(s) on a rough surface such as a wall or textured mat while saying the letter name(s) and the speech sound. Another option would be for the teacher to name the letter(s) in the grapheme and the associated sound and then write a large model of it on the board. Then, students say the letter(s) of the grapheme as well as the associated sound and use their entire arm to air trace the grapheme that has been written on the board.

Teachers can also provide the students with a paper that contains the new grapheme and the students can say the letter(s) of the grapheme and the associated sound and they can then use the pointer finger of their writing hand to trace the grapheme at least three times. After that, they can then use a pencil to trace it another three times.

During this type of kinesthetic reinforcement of the sound-symbol correspondence, it is important that the students say the letter(s) of the



Say kept.
What's the first sound in the word kept?
Students answer: /k/

Manipulate
Reverse
Substitute
Add
Delete

Segment

Blend

Categorize

Identify

Isolate

GRADES 2-4

GRADES K-1

PRE-K



Instructional Scripts: Teaching about Phoneme-Grapheme Correspondence

INTRODUCTION OF A PHONEME-GRAPHEME CORRESPONDENCE

Teacher: Today we are introducing a new phoneme-grapheme correspondence to learn. We are going to learn about the sound /k/ and the letter k.

Students: Teacher said, /k/. Teacher said, k. Teacher said, /k/. Teacher said, k.

Teacher: Now we are going to learn a new grapheme. Can you look at my mouth and listen carefully. I am going to say the first sound in the word kept. What is the first sound in the word kept? /k/. Now we are going to learn the letter k. Can you look at my mouth and listen carefully. I am going to say the letter k. What is the letter k? k. Now we are going to learn the sound-symbol correspondence. Can you look at my mouth and listen carefully. I am going to say the sound /k/ and the letter k. What is the sound /k/ and the letter k? /k/ and k. Now we are going to learn the sound-symbol correspondence. Can you look at my mouth and listen carefully. I am going to say the sound /k/ and the letter k. What is the sound /k/ and the letter k? /k/ and k.

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c ch
ck d

Thank you for helping bridge the research to evidence-based practice!

- Look for an email for:
 - recording and templates of today's virtual teaching techniques
 - Access to the Experts Series
- Please complete the Google form to:
 - Ask questions and/or learn more about **AIM Pathways**
 - Receive a Certificate of Attendance
 - Act 48 participation code "**AIM 10-28-2020**"
- Next session - November 12, 2020 (7:00 - 8:00 PM ET)
- If you enjoyed today's presentation, please tweet and tag @AIMtoLearn and use the hashtag #virtualteachingtechniques