

Beyond the Words: Making Inferences



Carol Westby, PhD
 Bilingual and Multicultural Services
 Albuquerque, NM
mocha@unm.edu
carol_westby@att.net

Disclosures



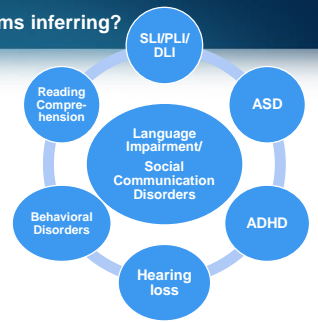
- Carol Westby is receiving an honorarium for this presentation.
- She has a chapter on theory of mind and literacy in children with hearing loss in a book, *Promoting Language and Literacy in Children who are Deaf or Hard of Hearing*, edited by Mary Pat Moeller

Outline



- What is an inference
- Types of inferences
- Difficulties inferring exhibited by students with language impairments
- Strategies to promote inferring
 - Activate and build prior knowledge
 - Develop Vocabulary, Morphology & Syntactic Structures
 - Theory of Mind & Syntactic Structures
 - Teaching question types
 - Bringing it together with think-aloud

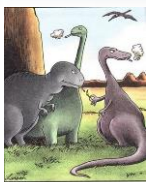
Who has problems inferring?



What is an Inference?



Text/picture + prior knowledge = inference



Knowledge
 • Dinosaurs are dead
 • Smoking can kill

= dinosaurs died because they smoked cigarettes

An inference is the information gained from the picture and or text combined with our prior knowledge

NAEP Grade 4 Questions for Hungry Spider and Turtle



- When turtle remains quiet about his mistreatment by Spider, the author wants you to:
 - believe turtle is afraid
 - have sympathy for turtle
 - feel dislike for turtle
 - think turtle deserved no dinner
- Spider's behavior during the first part of the story is most like that of:
 - mothers protecting their children
 - thieves robbing banks
 - runners losing races
 - people not sharing their wealth



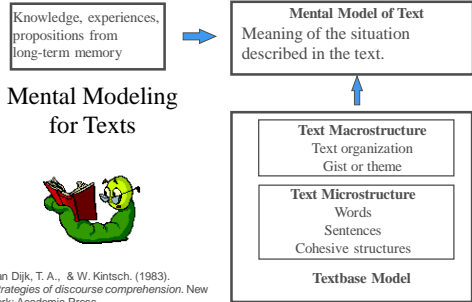
Inferring is facilitated when...

Readers build a mental model or representation of the situation or world (real or imaginary) described in the text.

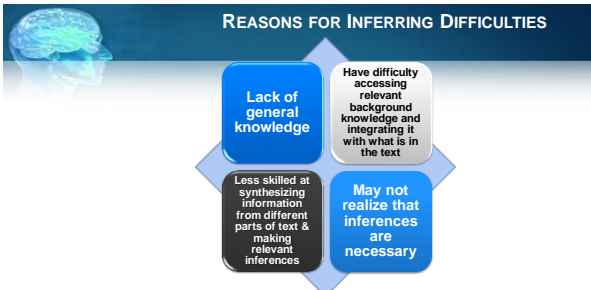


Dystopian Stories

Perfetti, C., (1997). Sentences, individual differences, and multiple texts: Three issues in text comprehension. *Discourse Processes*, 23, 337-355.



Van Dijk, T. A., & W. Kintsch. (1983). *Strategies of discourse comprehension*. New York: Academic Press.



Oakhill, J. & Yuill, N. (1996). Higher order factors in comprehension disability: Processes and remediation. In C. Cornoldi & J. Oakhill (Eds.), *Reading comprehension difficulties: Processes and intervention*. (pp. 69-92). Mahwah, NJ: Erlbaum.

Types of Inferences

- Coherence
- Logical
- Classes



Classification of Inferences: How they make text coherent

Name	Example	Explanation
Local inference		Connections in sentences and paragraphs
1. Coherence inferences	An old man and an old woman lived in an old cottage. They lived there with their many animals. "It's time for us to sow the vegetables ," said the old woman. They planted peas, carrots, beans, and turnips .	Recognize that "peas, carrots, beans, turnips" refer to "vegetables"
2. Antecedent causal inferences	The old man pulled and heaved and tugged and yanked, but the turnip would not move.	Infer that the turnip must be really big, or really far down in the ground.
Global inference	Inferences about the theme, main point, or moral of a text. Work goes better when many help.	To create a representation of the whole text, the reader infers over-arching ideas by drawing on local pieces of information.

Logical Inferences

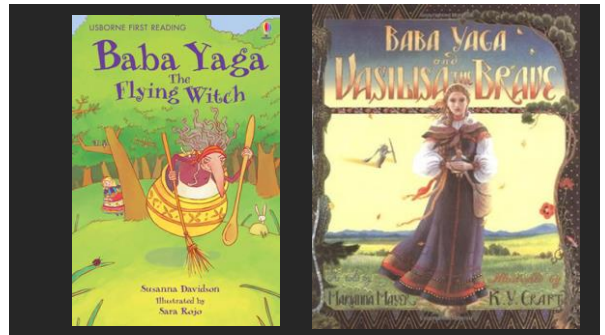
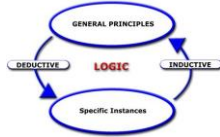
Deductive

All mammals are warm-blooded and have fur. A tapir is a mammal. Is a tapir warm-blooded? Does it have fur?



Inductive

This animal is warm-blooded. It has fur. It feeds its young milk. What kind of animal is it?



Logical Inferences

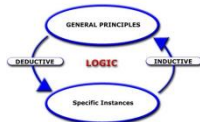
Deductive

Most witches are evil. Baba Yaga is a witch. She is likely to do bad things and hurt people.



Inductive

Vasilisa does what Baba Yaga tells her to do. She cleans the house. She prepares good food. Baba Yaga will like her and not hurt her.



Classes of Inferences

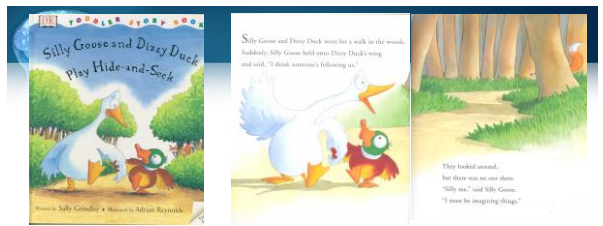
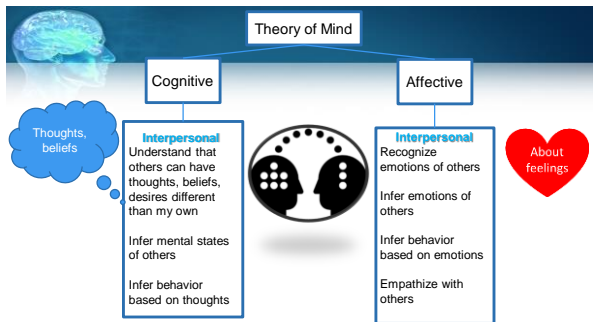
<ul style="list-style-type: none"> Anaphoric references: pronoun/noun-phrase that refers to previous text entity 	<ul style="list-style-type: none"> Vasilisa kept it near her.
<ul style="list-style-type: none"> Bridging/relational: semantically or conceptually relating sentence to previous content 	<ul style="list-style-type: none"> First page says humans are Baba Yaga's favorite food. Infer that the bones around Baba Yaga's house are probably human bones
<ul style="list-style-type: none"> Explanation-based/causal: explain what is read by a causal chain of previous events and states 	<ul style="list-style-type: none"> Baba Yaga's cat and dog help Tasha because Tasha fed them and Baba Yaga did not.

Classes of Inferences

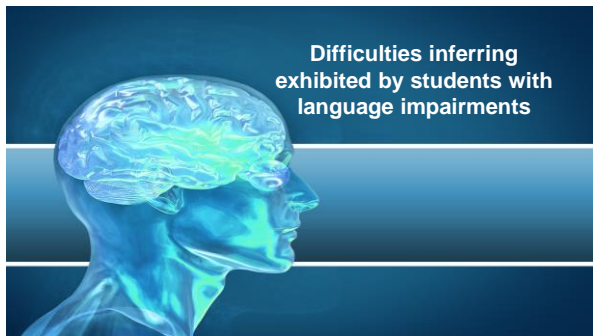
<ul style="list-style-type: none"> Predictive: forecast what events will unfold 	<ul style="list-style-type: none"> The doll Vasilisa's mother gave her will keep her safe
<ul style="list-style-type: none"> Goal: infer intentions of agent 	<ul style="list-style-type: none"> The stepmother wants to get rid of Vasilisa by sending her to Baba Yaga
<ul style="list-style-type: none"> Elaborative: properties and associations that cannot be explained by causal relationships 	<ul style="list-style-type: none"> Characteristics of Baba Yaga; witch behaviors; uses magic; infer what she might do because she is a witch

Types of inferential processing

<p>Emotional states</p> <p>How does the girl feel? Why?</p>	<p>Intentionality/Mental states</p> <p>What is this person thinking?</p>	<p>Physical causality</p> <p>Why is the snowman melting?</p>
---	--	--



Cognitive ToM: The goose doesn't know the fox is there but we do. We know fox's intention is to eat a goose and duck.
Affective ToM: We realize that goose is nervous/worried.



Early Studies of LI and Inferring

Compared to typically developing children, on both verbal and visually presented stories, children with language impairments:

- Make fewer total inferences
- Make more inference errors

Bishop, D.V.M., & Adams, C. (1992). Comprehension problems in children with specific language impairment: Literal and inferential meaning. *Journal of Speech and Hearing Research, 35*, 119-129.

Crais, E., & Chapman, R. (1987). Story recall and inferring skills in language/learning-disabled and nondisabled children. *Journal of Speech and Hearing Disorders, 52*, 50-55.

Ellis Weismer, S. (1985). Constructive comprehension abilities exhibited by language-disordered children. *Journal of Speech and Hearing Research, 28*, 175-184.

Children with LI inferring emotions in situations

1. Action 2. Action 3. Response

Twinky was bouncing a ball. A bully took the ball. Twinky was...

Ford, J.A., & Milosky, L.M. (2003). Inferring emotional reactions in social situations: Differences in children with language impairment. *Journal of Speech, Language, and Hearing Research, 46*, 21-30.

Children with LI inferring emotions in situations

- 5-year-old children with language impairment (LI) and typically developing children (TD) were 100% correct in pointing to pictures of happy, sad, mad, surprised
- TD and LI children were 100% correct in labeling happy, sad, mad; 4 of the 12 children with LI did not label surprised correctly
- Children with LI made significantly more errors inferring emotional reactions
 - **Children with LI made more errors of a different valence, e.g., mad for happy**

Ford, J.A., & Milosky, L.M. (2003). Inferring emotional reactions in social situations: Differences in children with language impairment. *Journal of Speech, Language, and Hearing Research, 46*, 21-30.

Inference in LI Children 6-10 years old

- Children with LI had more difficulty with emotional inferences than TD children
- Children with LI made more errors of valence than TD children, e.g.,
 - TD same valence errors, e.g., sad for angry
 - LI different valence errors, e.g., happy for sad or angry



Vendeville, N., Blanc, N., & Brechet, C. (2015). A drawing task to assess emotion inference in language-impaired children. *Journal of Speech, Language, & Hearing Research*, 58, 1563-1569.

Can a verbal inference task differentiate between:

Children with language impairment (CwLI) and matched peers with typical language development (TLD) (6-11 years)

Children with specific language impairment (CwSLI) and children with pragmatic language impairment (CwPLI)

Adams, C., Clarke, E., & Haynes, R. (2009). Inference and sentence comprehension in children with specific or pragmatic language impairments. *International Journal of Language and Communication Disorders*, 44, 301-318.

Sentence Comprehension (SC) Task

- Child pointed to a picture (from a set of four choices) or written word on the test booklet (again from a set of four words read by the evaluator).
 - direct and indirect objects ("She gave the baby the book.")
 - passive comprehension ("The dog was splashed by the girl.")
 - embedded clauses (The crocodile that bit the lion was small.)
 - complex continuous past ("Which one have I already eaten?")

Adams, C., Clarke, E., & Haynes, R. (2009). Inference and sentence comprehension in children with specific or pragmatic language impairments. *International Journal of Communication Disorders*, 44, 301-318.

Inferential Comprehension (IC) task

- Picture of kitchen in aftermath of a burglary.
 - Householder and policewoman picture with clues
 - Torn piece of cloth
 - Footprint
 - Broken window
- Examiner read short text about picture
- Students asked 11 questions designed to tap inferring



Adams, C., Clarke, E., & Haynes, R. (2009). Inference and sentence comprehension in children with specific or pragmatic language impairments. *International Journal of Communication Disorders*, 44, 301-318.

Some Inferential Comprehension (IC) Questions

- Easiest
- ↓
- Hardest
- Why was the dog barking?
 - Why is the policewoman there?
 - What happened when the burglar got into the house?
 - What clues will the police find about who broke in?
 - Why did the burglar break into the back of the house?
 - How does the family feel now?
 - How do we know it was the burglar who broke the window?
 - What will the family do now because of the burglary?

Adams, C., Clarke, E., & Haynes, R. (2009). Inference and sentence comprehension in children with specific or pragmatic language impairments. *International Journal of Communication Disorders*, 44, 301-318.

Comprehension in children with LI

All CwLI

- Made significantly more literal comprehension errors (didn't understand the question).
- CwLI had lower raw scores on the IC task than CA-matched CwTLD, but similar scores to SC-matched CwTLD

CwSLI Vs CwPLI

- The CwSLI had significantly higher IC scores than CwPLI
- No significant differences between the types of inferences that CwSLI and CwPLI made

Adams, C., Clarke, E., & Haynes, R. (2009). Inference and sentence comprehension in children with specific or pragmatic language impairments. *International Journal of Communication Disorders*, 44, 301-318.

Comprehension in children with PLI

CwPLI

- CwPLI performed more poorly on developmentally more complex inference items
- Had significantly lower inferential scores than their CA and SC matched groups.

Adams, C., Clarke, E., & Haynes, R. (2009). Inference and sentence comprehension in children with specific or pragmatic language impairments. *International Journal of Communication Disorders*, 44, 301-318.

Inferential processing in ASD

Physical Causality

Intentionality/Mental states

Emotional States

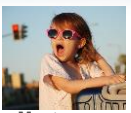


Best performance

Errors may be related to difficult integrating world knowledge with context/situation



More errors



Most errors

Andy was only 2 years old. He was sitting on his mother's lap when a big dog ran up and licked him on the cheek. Andy's eyes got really big, and he started to cry. Why did Andy do that?

Bodner, K.E., Engelhardt, C.R., Minshew, N.J., & Williams, D.L. (2015). Making inferences: Comprehension of physical causality, intentionality, and emotions in discourse by high-functioning older children, adolescents, and adults with autism. *Journal of Autism and Developmental Disorders*, 45(9), 2721-2733.

Skills needed to make inferences



Karasinski, C., & Weismer, S.E. (2010). Comprehension of inferences in discourse processing by adolescents with and without language impairment. *Journal of Speech, Language, and Hearing Research*, 53, 1268-1279.

Inferring in 4 Groups of 8th Grade Students

Normal language group (NL)

- Normal vocab/syntax, world knowledge, working memory

Specific language impairment group (SLI)

- Normal world knowledge
- Deficits in vocab/syntax and working memory

Nonspecific language impairment group (NLI)

- Deficits in vocab/syntax, world knowledge, and working memory

Low cognition group

- Normal vocab/syntax
- Deficits in world knowledge and working memory

Karasinski, C., & Weismer, S.E. (2010). Comprehension of inferences in discourse processing by adolescents with and without language impairment. *Journal of Speech, Language, and Hearing Research*, 53, 1268-1279.

The King's Ducks

Once upon a time, there was a king who lived in a gorgeous castle on the edge of a beautiful lake. This king had two special ducks that he was very fond of. He told his young son that if he could determine which duck was the male duck, he would give the son all his riches. The son thought that surely the bigger duck was the male duck, but he figured he had better do some more investigating before making a decision. The son traveled out to the countryside and requested help from a man he saw walking on a country road. The farmer was amazed to see the king's son outside of the castle grounds. "Would you be so kind as to help me, sir?" said the boy. "I need to know how to tell male ducks from female ducks. I would appreciate any information you can give me, since my future depends on it." The farmer told the son to take the ducks out of the water and set them on the shore. Then, he told him to watch carefully to see which duck would enter the water first. The farmer said that the first to enter the water was always the male duck. The boy returned to the castle to try out the farmer's advice. He was glad he had listened to the farmer, because he was surprised to discover which duck was the male. The following day, he informed the king that he knew which duck was the male duck. The king was very pleased and kept his promise to his son.



Literal and Inferential Questions

- **Adjacent Premise Questions**
 - Which duck did the farmer say would enter the water first?
 - Where did the young son find someone to help him?
- **Distant Premise Questions**
 - What would the king give his son if he could figure out which duck was the male duck?
 - Before he talked to the farmer, which duck did the son think was the male?
- **Adjacent Inference Questions**
 - Who was the man that was walking on the country road?
 - How did the young son determine which of the King's ducks was male?
- **Distant Inference Questions**
 - How do you know the son got the king's riches?
 - Why was the son surprised when he figured out which duck was the male duck?



Inferring in 4 groups of 8th grade students

- **Working memory** : All measures correlated highly with inference scores
- **Adjacent inference questions**
 - No difference between NL and LC groups
 - NL group better than SLI and NLI groups
- **Distance inference questions**
 - NL → LC → SLI → NLI**
 - All groups of students had more difficulty with distant inference questions than adjacent inference questions

Karaszinski, C., & Weismer, S.E. (2010). Comprehension of inferences in discourse processing by adolescents with and without language impairment. *Journal of Speech, Language, and Hearing Research*, 53, 1268-1279.

Inferences by 4-7 year olds (TD & ASD) in narrative comprehension

- It's Susie's birthday party tomorrow. Susie and her Mum go to the supermarket to buy food for the party. Susie really hopes Mum buy her a chocolate cake. They get a cake, some candy, and some chips. Then they pay the cashier. Susie leaves the store smiling and feeling happy. And they take the food home.

Question type	Inference type	Question	Answer
Factual		Where do they first go in the story?	To the supermarket
Propositional	Deductive	Why was Susie happy when they left the store?	Her Mum bought a chocolate cake.
Script	Inductive	Why did they give money to the cashier?	To buy the food

Nuske, H.J., & Bavin, E.L. (2011). Narrative comprehension in 4-7-year old children with autism: testing the weak central coherence account. *International Journal of Language and Communication Disorders*, 46, 108-119.

Central Coherence

- Ability to derive overall meaning from a mass of details
 - A person with strong central coherence, looking at an endless expanse of trees, would see "the forest."
 - A person with weak central coherence would see only a whole lot of individual trees.



Frith, U., 1989. *Autism: Explaining the Enigma*. Blackwell, Oxford.

Central Coherence: Important for inductive inferences

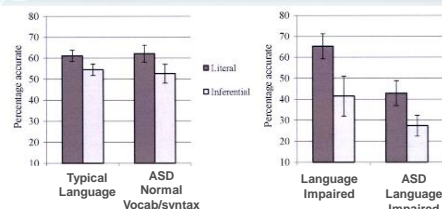


Inferences by 4-7 year olds in narrative comprehension

- Children with ASD and typical children **performed similarly** on factual and propositional/deductive questions
 - **Propositional/deductive inferences require integrating information within the text**
- Children with ASD performed **less well** on script/inductive inferences than typically developing children
 - **Supports weak central coherence theory, i.e., problems integrating information to make script inferences**

Nuske, H.J., & Bavin, E.L. (2011). Narrative comprehension in 4-7-year old children with autism: testing the weak central coherence account. *International Journal of Language and Communication Disorder*, 46, 108-119.

TD & ASD Answering Literal & Inferential Questions: 7-12 year olds



Lucas, R., & Norbury, C.F. (2015). Making inferences from text: It's vocabulary that matters. *Journal of Speech, Language, & Hearing Research*, 58, 1224-1232.

Specific Difficulty in Inferencing

- 12.5% of TD children
- 33% of children with ALN
- 58% of children with LI
- 50+% of ALI children



Lucas, R., & Norbury, C.F. (2015). Making inferences from text: It's vocabulary that matters. *Journal of Speech, Language, & Hearing Research*, 58, 1224-1232.

Working Memory, ASD, and Inferences (Adolescents 11-18 years)

- Fatima is going to work as a waitress this weekend. Her sister is sick and she is going to replace her. When Fatima was a child she sat all her dolls and pretended to be a waitress bringing glasses of water. Also, when asked what she wanted to be when she grew up, she always replied, "a waitress." On top of it, she is going to earn some money in a proper job.

Fatima was feeling excited
Fatima was feeling disappointed

Tirado, M.J., & Saldana, D. (2016). Readers with autism can produce inferences, but they cannot answer inferential questions. *J. Autism Dev Disorder*, 46, 1025-1037.

Working Memory, ASD, and Inferences (Adolescents 11-18 years)

- Isabel's boss has told her that she has to go to England for 4 months. She can't sleep since she received the news. She doesn't know how she will live there. She won't have her family nearby and, most important, she won't be able to talk to anyone because she doesn't speak English.

Neutral sentences before inference

- Twenty years ago, people rarely studied English at school and students could choose to study other languages, such as French or German. But nowadays, to get a job, you must speak English.

Isabel was feeling unhappy

Isabel was feeling happy

Tirado, M.J., & Saldana, D. (2016). Readers with autism can produce inferences, but they cannot answer inferential questions. *J. Autism Dev Disorder*, 46, 1025-1037.

Homogeneous

These snakes have gray eyes.

Diverse

These snakes have blue eyes.

Test

Look at this snake: Do you think it has blue eyes like these snakes (point) or gray eyes like these snakes (point)?

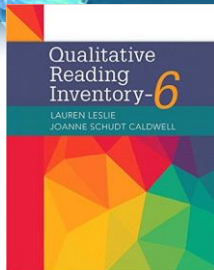
Category Induction in ASD

% of Group

	TD	Optimal	HFA
Perfect 6/6	17.3	16.7	15.4
Almost perfect 5/6	52.2	27.8	23.1
Consistent 4/6	26.1	38.9	38.4
Moderate 3/6	4.3	16.7	15.4
Nonextender	0	0	7.7

Naigles, L.R., Kelley, E., Troy, E., & Fein, F. (2013). Residual difficulties with categorical induction in children with a history of autism. *J Autism Dev Disord*. 43, 2048-2061.

Concept Questions




- Who was Martin Luther King?
- What is racism?
- What is Washington, DC?
- What does "equal rights" mean to you?



Martin Luther King, Jr. – 5th Grade

- Explicit questions
 - In some cities, what did blacks have to do on a city bus? (**give up their seat**)
 - Why was Rosa Parks arrested? (**she didn't want to give up her seat**)
 - What did many people do to protest Rosa Park's arrest? (**don't know**)
 - Name one way in which Martin Luther King was honored for his work. (**a medal**)

Leslie, L., & Caldwell, J.S. (2011). *Qualitative Reading Inventory-5*. Boston: Pearson.




Martin Luther King – 5th grade

- Implicit Questions
 - What was Martin Luther King’s main goal? (change the law) (relational inference - integrate across text)
 - Why had people made laws separating blacks and whites? (don’t know) (causal inference – prior knowledge)
 - What happened when people refused to ride the buses? (lost money ?? They had to change the law) (causal inference – across the text)
 - Why was Washington, D.C. an important place to protest unjust laws? (the president lives there) (causal inference – prior knowledge)




Strategies to Promote Inferring



What to do to Develop Inferring


- Activate prior knowledge/build knowledge
- Develop vocabulary/syntactic structures
- Develop theory of mind
- Teach types of questions
- Use Think-Alouds, questioning the author



Kispaal, A. (2008). Effective teaching of inference skills for reading: A literature review. (DCSF Research Report 031). London.



Activate and Build Prior Knowledge




Making Connections

The 1st Grade
All Stars
Sing the
Making Connections Song


Make connections, make connections,
when you read, when you read
Think of text to text, think of text to self,
text to world text to world
What does it make me think of, what
does it remind me of.
Things I know in my head.
Text to world, text to world

Text-to-Self: connections made between the text and the reader’s personal experience.
Text-to-Text: connections made between a text being read to a text that was previously read.
Text-to-World: connections made between a text being read and something that occurs in the world.

<https://www.youtube.com/watch?v=TbtX3kb-jRk>



Types of Connections



- **Text-to-self:**
 - What does this remind me of in my life?
 - What is this similar to in my life?
 - How is this different from my life?
 - Has something like this ever happened to me?
 - How does this relate to my life?
 - What were my feelings when I read this?
- **Text-to-text:**
 - What does this remind me of in another book I’ve read?
 - How is this text similar to other things I’ve read?
 - How is this different from other books I’ve read?
 - Have I read about something like this before?

<https://www.youtube.com/watch?v=czwc5tBp5c0>
- **Text-to-world:**
 - What does this remind me of in the real world?
 - How is this text similar to things that happen in the real world?
 - How is this different from things that happen in the real world?
 - How did that part relate to the world around me?

Activate Prior Knowledge

Activate Prior Knowledge

Activate Prior Knowledge

Urrea's book, a Pulitzer Prize finalist, chronicles the attempt of 26 men to cross the Mexican border into the United States in the spring of 2001, which resulted in the deaths of 14.

The book received critical acclaim with *The Atlantic* describing it as "the single most compelling, lucid and lyrical contemporary account of the absurdity of U.S. border policy."

20th Anniversary Edition of Holes with Bonus Material

HOLES

LOUIS SACHAR

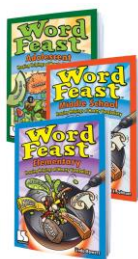
Winner of the Newbery Medal and the National Book Award

Teaching Vocabulary

Word	Dictionary Definition	Friendly Definition
Protrude He was able to lift Zero high enough for him to grab the protruding slab of rock.	extend out or project in space	If something protrudes from somewhere, it sticks out.
Writhe His body writhed in agony.	move in a twisting or contorted motion	If you writhe, your body twists and turns violently backwards and forwards, usually because you are in great pain or discomfort.
Predatory The yellow-spotted lizards like to live in holes, which offer shade from the sun and protection from predatory birds.	living by preying on other animals	Predatory animals live by killing other animals for food.
Grimace He grimaced as he sliced off a chunk of dirt, then raised it up and flung it onto a pile	contort the face to indicate a certain mental state	If you grimace, you twist your face in an ugly way because you are annoyed, disgusted, or in pain.

Teach Vocabulary in Thematic groups

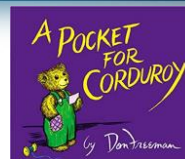
- The black widow spider
 - **widow, prey, poisonous, scamper, fluid**
- The American colonies
 - **colony, independence, migrate, settlers, trade**
- Whales
 - **adapt, agile, depths, docile, frolic, glide, tragic, treacherous, vicious**



Bowers, L. (2011). *Word feast - elementary*. Pro-Ed: Austin, TX.
 Johnson, P. (2011). *Word feast - middle school*. Pro-Ed: Austin, TX.
 Johnson, P. (2014). *Word feast - adolescent*. Pro-Ed: Austin, TX

Vocabulary Instruction

- Contextualize word for its role in the story
- Have children repeat word so they create a phonological representation
- Explain the meaning of the word
- Give examples in contexts other than the story.
- Children provide their own examples
- Children say word again to reinforce its phonological representation



Lisa was **reluctant** to leave without Corduroy.

Beck, I.L., McKeown, M.G., & Kucan, L. (2013). *Bringing words to life*. New York: Guilford.

Teach Vocabulary in Thematic groups

SERP Word Generation Program

- Program to teach academic vocabulary language, discussion, argumentation, and thinking skills to students in 4th-8th grades
- Words are taught in multiple contexts over 5-10 lessons
- Available free: <http://wordgen.serpmedia.org>

Should Schools Protect Kids from Cyberbullying?

- The internet offers new ways for people to engage in bullying and **harassment**. People who are usually kind may discover an **underlying capacity** for meanness when they are online, where they feel **anonymous**. Some people suggest rules to help others to remember to be kind. For example, "Don't say something online that you wouldn't say in person." Is this rule **adequate**? What are some other good rules for online interactions?

Use the focus words

- anonymous** (adjective) not named or identified
 - **Sample Sentence:** Since many of the harmful comments come from **anonymous** sources, teachers and principals are unable to determine who the cyberbullies are.
 - **Turn and Talk:** Describe a situation when you would want to write an **anonymous** note.
- underlying** (adjective) fundamental but not revealed or expressed
 - **Sample Sentence:** When a child is having problems in school, cyberbullying can be an **underlying** cause.
 - **Turn and Talk:** What could be some **underlying** reasons that a student refuses to participate in P.E.?

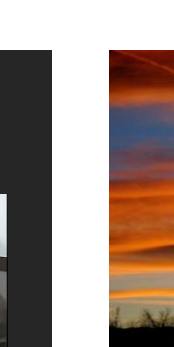


you eat lots of onions
if
the lizards won't eat you

When Stanley stole the truck
Stanley felt excited
but because
he was finally getting away



Nonsocial Emotion Words




Nonsocial emotions require only the awareness of one's own physical state

Universal nonsocial emotions

- Happy
- Sad
- Mad/angry
- Surprised
- Disgusted
- Afraid


Emotional Thermometers



Ecstatic/euphoric	Enraged
Blissful	Incensed
Elated	Livid/furious
Joyful	Angry
Happy	Aggravated
Glad	Provoked
Pleased	Irritated
Contented	Annoyed
Comfortable	Bothered

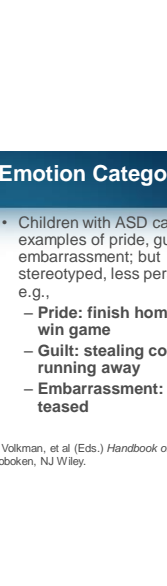
Teach Tier 2 words for emotions/moods

<https://www.vocabulary.com/articles/wl/get-into-the-mood-with-100-feeling-words/>

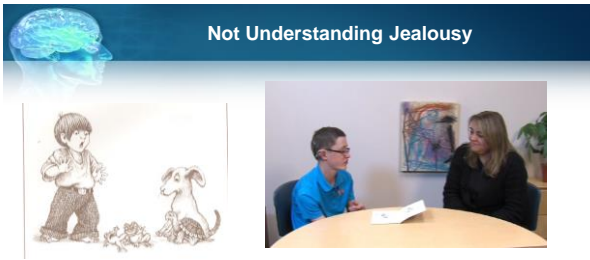


Other Emotion Categories

- Social emotions - depend upon the thoughts, feelings or actions of other people
 - Embarrassment
 - Guilt
 - Shame
 - Jealousy
 - Envy
 - Pride
- Children with ASD can cite examples of pride, guilt, embarrassment; but stereotyped, less personal, e.g.,
 - Pride: finish homework, win game
 - Guilt: stealing cookies, running away
 - Embarrassment: being teased



Hobson, R.P. (2014). Autism and emotion. In F.R. Volkman, et al (Eds.) *Handbook of autism and pervasive developmental disorders*, Vol. 1. Hoboken, NJ Wiley.



What Sugihara is thinking or feeling

What the Jews are thinking or feeling

Concerned about self; compassionate, worried about Jews' safety

Sugihara decides to go against government and write visas

Thrilled, relieved

Evidence
My father cabled his superiors a third time, and I knew the answer by the look in his eye.That night he said to my mother, "I have to do something. I may have to disobey my government."

What happens next?
Wrote visas til forced to leave Lithuania.

Evidence
The crowd stood frozen for a second. Then the refugees burst into cheers. Grown-ups embraced each other, and some reached to the sky.

Perspectives

Stanley	Mr. Sir
Thirsty, thinks Mr. Sir is offering him a drink	Attempts to taunt Stanley by drinking in front of him
Worried cause boys threw seeds in his hole. Lies to protect friends	Doesn't believe Stanley. Decides to have warden deal with him.
Frightened – what might the warden do to him	Surprised, angry; didn't expect this
Disappointed they're not going after Zero, then worried	Indifferent to Zero; just don't want anyone to know he went missing
Wants to save Zero; frustrated & scared, but determined when truck falls in hole	Initially furious; then worried if someone discovers he's missing
Relieved that they haven't been bitten and that they may be rescued	Apprehensive about what lawyer will ask and what she knows about him

She'll be pleased with how I'm handling the boys and reward me.

I don't care what the boys do as long as they find the treasure.

Mr. Sir isn't doing his job. He's got to learn what I want.

There's been a little trouble on the lake. Cavenham will tell you about it.

That's why you brought him here?

Mr. Sir

The Warden

Thinking about MOODS is an effective way to access a text.

Facial Expressions

Body Language

ALONE

Zoom in

Zoom out

Symbols in Words or Silences

Metaphors

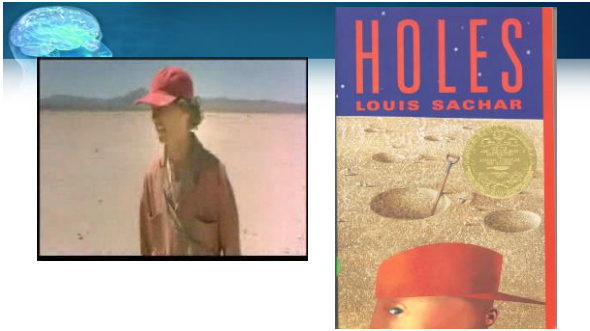
Exploring Visual Texts to Foster Comprehension, Conversation, and Confidence

By TREVOR ANDREW BRYAN

Foreword by Dr. Howard

1. Connects thought, mood, tone and symbols.

Bryan, T.A. (2019). *The art of comprehension: Exploring visual texts to foster comprehension, conversation, and confidence*. Portsmouth, NH: Stenhouse.



Access Lenses: *Mood despondent, then joyful*

Colors Everything brown Hazy Very bright	Bodies/Action Walking slowly Lying still, not moving	Facial expressions Stanley's face blank Eyes squinting Increasing smile
Close together/far apart Stanley & Zero hugging	Words/no words No words for long time First words - Zero, Zero (first soft, then louder)	Big things: Desert Mountain
Alone Stanley all alone Zero all alone	Sounds/no sounds Repetitive "music"; no other sounds	Little things: Piece of clothing
Zoom in Close up of piece of clothing, feet Zoom out: Distance view of desert, mountain	Symbol/mood Desert - Obstacles, hardships Mountain - obstacles/overcoming obstacles, aspirations, goals	Connections Hiking at Monument Valley <i>The Desert is Theirs</i> Like the Sahara Desert

Bryan, T.A. (2019). *The art of comprehension: Exploring visual texts to foster comprehension, conversation, and confidence.* Portsmouth, NH: Stenhouse.



Text	Relevant Access Lens	Inference/Mood/Meaning
The next day was rainy and dark.	Color	It's a gloomy sort of day.
Templeton was nowhere to be seen.	Far apart	Wilbur is feeling lonely.
"Are you there, Templeton?" called Wilbur. There was no answer.	Silence	This heightens the sense of loneliness.
... Fern won't come in such bad weather.	Far apart	Wilbur wants a visitor.
And Wilbur was crying again...	Action	Wilbur feels sad that nobody was around.
Wilbur did not budge.	Inaction	Depressed
Darkness settled over everything.	Color, symbol, big	There was no hope anywhere.

Bryan, T.A. (2019). *The art of comprehension: Exploring visual texts to foster comprehension, conversation, and confidence.* Portsmouth, NH: Stenhouse.

Character	When	Emotion	Why (because)
Loki	he hears Thor say he can't trust Loki	ashamed	he broke the relationship between him and Thor

Characters	When	Feeling	Why
Stanley	Zero was looking over his shoulder when Stanley was writing to his mother	annoyed	he didn't want Zero to see what he was writing
Stanley	X-ray takes the lipstick tube and turns it in	frustrated	Stanley found the tube so he should get a day off
Zero	He finds his mother	relieved, thrilled, happy	He thought she might have died or that she didn't want him
The Warden	Stanley's lawyer finds the boys in the hole	worried	Because the authorities will learn how she has been using the boys and she could go to jail



Promoting Questioning

- Model how to formulate different types of questions
- Model higher level questions that require using textual cues and prior knowledge
- Ask students to reflect: How does this question help us understand the text
- Provide question starters, e.g., “Why do you think...?”

Oczkus, L.D. (2010). *Reciprocal Teaching at work*. Newark, DE: International Reading Association.

On the surface questions

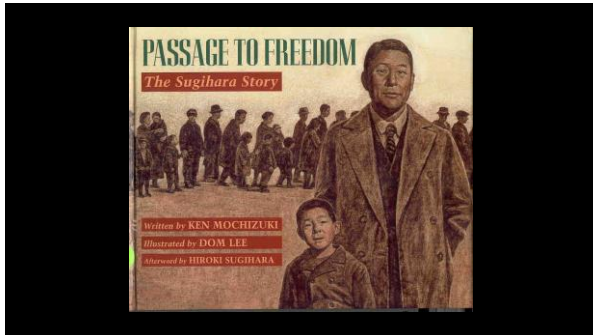
Idea from:
Zwiers, J. (2010). *Building reading comprehension habits in grades 6-12: A toolkit of classroom activities*. Newark, DE: International Reading Association.

Under the surface questions

Question-Answer-Relationships

- Where is the answer?
 - **Right there!**
 - **Words are right there in the text**
- Where is the answer?
 - **Think and search!**
 - **Words are in the text, but not spelled out for you. Think about what the author is saying.**
- Where is the answer?
 - **You and the author!**
 - **Think about what you have learned and what is in the text.**
- Where is the answer?
 - **On your own!**
 - **Answer is in you head.**

Raphael, T.E. (1986). Teaching question/answer relationships, revisited. *The Reading Teacher*, 39, 516-522.



QAR (Question-Answer-Relationship)

Passage to Freedom: The Sugihara Story

- **Right there**
 - Why were the Sugihara family living in Lithuania?
- **Think and search**
 - In what ways did Hiroki's life change after the Polish Jews came to his house?
- **Author and you**
 - What is a visa?
 - Why didn't Mrs. Sugihara help write the visas?
- **On you own**
 - Can you think of someone else who has risked his or her own life to save other persons?



Bringing it all together with think-alouds

Promoting Inferring

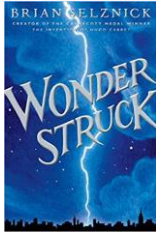


- Model inferring/predicting using think-alouds and text cues
- Ask students to preview illustrations and headings and think about what they will learn from text
- Use what you know about text structure to infer/predict
- Periodically summarize what has happened so far and add, "Now I think... because..."

Oczkus, L.D. (2010). *Reciprocal Teaching at work*. Newark, DE: International Reading Association.

Strategies to Build Inferential Comprehension

Think Aloud



Students read silently as teacher reads aloud.

Teacher *thinks* through tricky spots and

Make predictions:

"From the title I think this will be about..."


Think Aloud

Teacher *thinks* through more difficult parts of the text and


Describes the pictures you form in your head about the information.

Outside the storm grew worse. Still shaking, Ben picked up the receiver and held it to his good ear. He hesitated then dialed the number. He slid the bookmark between the pages of the book.

"I have a picture of this scene in my head and this is what it looks like..."



Think Aloud



ed



useum Lake, ok that ated was

Think Aloud

Demonstrate fix-up strategies: Show how to make sense of the passage. "I'd better reread." or "I'll read ahead and see if I can get some more information."



Model Think-aloud

Questioning the Author

Goal:
Initiating queries

- What is the author trying to say here?
- What do you think the author wants us to know?
- What is the author talking about?



Beck, I.L., McKeown, M.G. (2006). *Improving comprehension with questioning the author*. New York: Scholastic.

Questioning the author: Follow-up queries



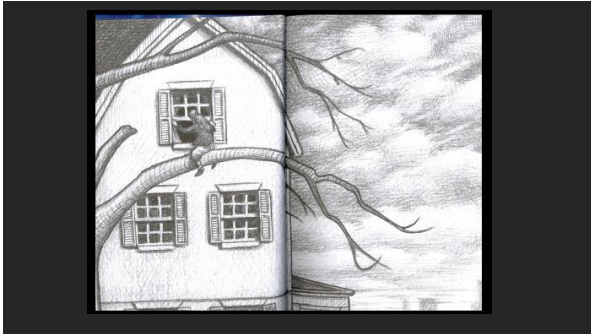
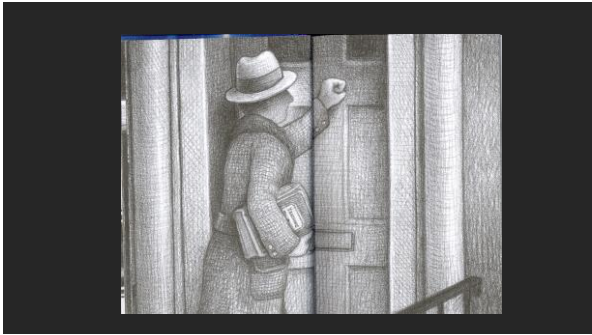
- So what does the author mean right here? That's what the author said, but what did the author mean?
- Does this make sense with what the author told us before?
- How does this connect to what the author told us earlier?
- Why do you think the author tells us about this now?

Questioning the author

Questioning the author



Inferring Thoughts and Feelings

**Making Connections:
Inductive Inferences**

**Making Connections:
Inductive Inferences**



If children are to
make inferences,
they must be
taught
HOW TO THINK,
not what to think.