Strategies for Improving Literacy for Students with ASD

The following information may be helpful in building literacy skills for young and elementary aged students with ASD. This includes resources on the START Literacy web page, texts by authors who specialize in literacy and ASD, and online resources that support the outlined strategies. Noted in the following are characteristics that impact literacy for students with ASD, areas for possible intervention, one or more strategies for implementing the intervention, and resources where noted strategies can be found. An overview of literacy practices, skills, and reading profiles also are covered.

Inclusive Literacy Practices (START Literacy & ASD Presentation)
There are universally accepted strategies and practices that are embedded throughout the following options for teaching literacy to students with ASD. Consider these points as the strategies are designed and implemented for students and classrooms.
- Keep expectations high and continually move the bar as the student progresses.
- Elicit student perspectives by using their personal interests, fascinations, passions to promote interest and engagement in reading.
- Use flexible grouping strategies, diversity, and differentiated instruction based on the need of the student.
- Use elastic instructional approaches as a basis for all literacy instruction.
    - Visual Supports.
    - Priming for background knowledge.
    - Peer models of literate behavior and partners in paired reading situations.
    - Use student interests, fascinations, and passions to promote interest and engagement in developing literacy skills.
    - Engage readers before, during, and after reading.
    - Use interactive approaches such as literacy software, applications, websites, books, and PowerPoint presentations.
- Focus on emergent literacy skills progressing to more complex skills.
- Practice-practice-practice as vocabulary requires multiple exposures to be fully learn, be maintained, and generalize (Carnahan & Williamson, 2011, p. 332).
- When using reward systems, assure the reward is reinforcing to the i*ndividual*. This will vary from student to student, class to class, and even day to day. If the student has gotten too much of a reward, they may be tired of it so change rewards, fade rewards slowly, keep rewards more frequent and desirable for new and difficult skills being learned.
    - If using the suggested texts and resources for strategies, note whether the resource was designed specifically for students with ASD. Some modification of the comprehension strategy may need to take place to differentiate for needs of the specific student and to maximize effectiveness.

Emerging Literacy and Students with ASD (Carnahan & Williamson, 2010; Island & Smith-Myles, 2011)

The following outlines emergent literacy skills to subsequently teach expanded literacy skills and reading comprehension. Also, literacy considerations for students with ASD from 4th grade forward.

Emergent Literacy
(Carnahan & Williamson, 2010, p. 222)

A. **Decoding**: awareness and recognition of structure of print including meaning and function of print. Individual unit of written language=a letter (grapheme); one or more sounds associated with one or more letters (phoneme).
   a. Phonological awareness: recognize and build sound properties of words.
   b. Alphabet knowledge: can receptively identify letters, expressively name letters, match letters to sounds
   c. Print concepts: understanding the forms, functions, and features of print; direction, organization, and meaning of print (e.g. understand genres of print are different such as coupons are for shopping and storybooks are for entertainment); understand letters make up words.
   d. Emergent writing: attempts to convey information through written symbols; writing progresses from drawing and scribbling to letter like formations to complete letters.

Emergent Literacy
(Carnahan & Williamson, 2010, p. 222)

B. **Comprehension**: global understanding of printed words and sentences. Language comprehension of semantic and syntactic relationships of and between words.
   a. Vocabulary: understands meaning of words.
   b. Grammatical understanding: understanding of basic syntax of words and sentences; understands various sentence types and clause structures and when reading uses this information for comprehension.
   c. Narratives: oral or written description of an event and may be personal account or fictional retellings of a story. Topic is presented by the speaker or writer and sequence of events are linked together.

Expanding Literacy
(Island & Smith-Myles, 2011. p. 48)

A. **Use of context**: ability to determine correct meaning of words and understanding homographs through self-monitoring and self-correction; may continue reading even if text does not make sense; figuring out meaning from unknown words; ability to integrate information from background knowledge.
B. Pronouns: understanding pronouns in print and stopping to clarify meaning (called anaphoric cuing).
C. Questioning: asking questions before, during, and after reading and central to comprehension. Prerequisite for more complex strategies and thought processes.
D. Auditory comprehension of spoken (oral) language: ability to understand academic instruction. Translates to ability to understand written language.
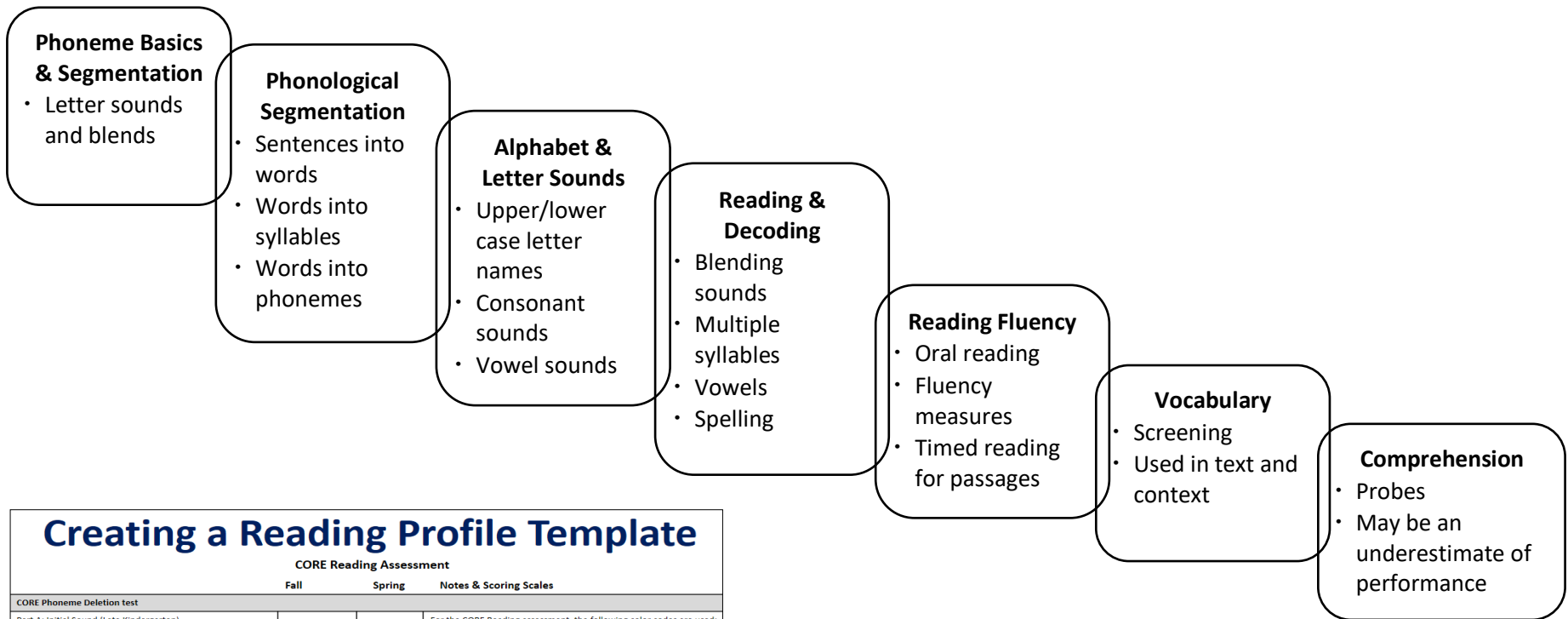
Literacy Skills Needs: 4th Grade Forward (Island & Smith-Myles, p. 75)
Many literacy issues not recognized earlier present in 4th grade with comprehension challenges as more advanced thinking and learning is required from 4th grade on. Readers must apply what they are reading to discussions, writing assignments, and other work.
   A. Missing prerequisite skills and uneven development of literacy skills.
   B. May have traditional strong decoding skills.
   C. Comprehension issues impact more than one area.
   D. Behavioral issues may develop and could be side effects of underlying comprehension issues. This includes changes in frustration level, anxiety, answer, self-esteem, depression, self-stimulatory behavior, emotional states, etc. *Students may not be aware of what is bothering them or be able to describe it.*

Create a Reading Profile (START Literacy & ASD Presentation)

Create a reading profile for each student to determine reading current ability and vocabulary, and help the student expand literacy skills. The reading profile controls for interest area, vocabulary, and background knowledge:

Phoneme Basics & Segmentation
- Letter sounds and blends

Phonological Segmentation
- Sentences into words
- Words into syllables
- Words into phonemes

Alphabet & Letter Sounds
- Upper/lower case letter names
- Consonant sounds
- Vowel sounds

Reading & Decoding
- Blending sounds
- Multiple syllables
- Vowels
- Spelling

Reading Fluency
- Oral reading
- Fluency measures
- Timed reading for passages

Vocabulary
- Screening
- Used in text and context

Comprehension
- Probes
- May be an underestimate of performance

Creating a Reading Profile Template

CORE Reading Assessment

	Fall	Spring	Notes & Scoring Scales
CORE Phoneme Deletion test			
Part A: Initial Sound (Late Kindergarten)			For the CORE Reading assessment, the following color codes are used:
Part B: Final Sound (Grade 1)			
Part C: First sound of a consonant Blend (Grade 2)			Green = Independent Level = At Benchmark
Part D: Embedded Sound of a Consonant Blend (Grade 3)			Yellow = Instructional Level = Strategic Intervention (grade-level)
CORE Phoneme Segmentation Test			Red = Frustration Level = Intensive Intervention needed
CORE Phonological Segmentation Test			
Part A: Sentences into Words			
Part B: Words into Syllables			
Part C: Words into Phonemes			
Alphabet Skills and Letter Sounds			
O. Letter Names – Upper Case			
P. Letter names – Lower Case			
Q. Consonant Sounds			
R. Long Vowel Sounds			
S. Short Vowel Sounds			
Core Phonics Survey: Reading & Decoding (Mastery Test)			
T. Short Vowels in CVC words			
U. Consonant Blends with Short Vowels			
V. Short vowels. Digraphs and Trigraphs			

Data Collection for Literacy Goals

It is important to collect both pre-intervention (or baseline) and post-intervention data when considering gains in literacy for the student. Performance based measures are important to assure progress in literacy goals. START has a number of data collection forms that can be

adapted to individual reading goals. Examples are given throughout the provided strategies. For START samples, data collection forms, a webinar, and more go to Individual Student Data Collection Forms.

Data Collection Literacy Skills Examples

The follow are sample goal areas for measuring progress for literacy skills through data collection. When defining a number of responses toward a goal, it is important to note the expected number of correct responses given the number of total opportunities, or a percent of correct responding. While the working toward the goal, there should be incremental improvement. If improvement is not demonstrated, reconsider whether the goal is too high or the student may have the skill and is not able to demonstrate it in a given setting.

- Increasing recognition or definition of number of adjectives, adverbs, pronouns
- Identifying main idea and defined number of details in a passage
- Spelling defined number of words using spelling strips, phonetically, or from memory
- Matching defined number of upper and lower-case letters
- Building (defined number) of 3-letter words from corresponding picture (e.g. dog, cat, pig, cow)
- Combining (defined number) of compound words based on corresponding picture (e.g. cowboy=picture of cow and boy)
- Sequencing through words or pictures a defined number of story events
- Sounding out defined number of words phonetically or from memory

Strategies for Improving Literacy for Students with ASD

The Top 10:

Characteristics of ASD that Impact LITERACY

- Theory of Mind / Emotional Reciprocity
- Literal Thinking
- Repetitive Patterns of Behavior
- Language & Communication
- Prior Knowledge
- Pragmatics
- Restricted Interests & Motivation
- Joint Attention & Social Engagement
- Executive Function
- Central Coherence
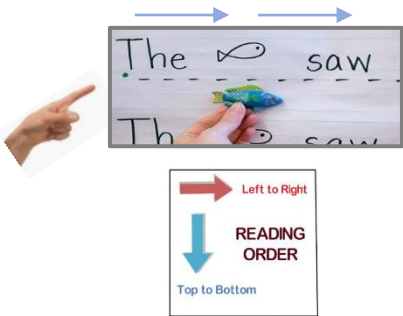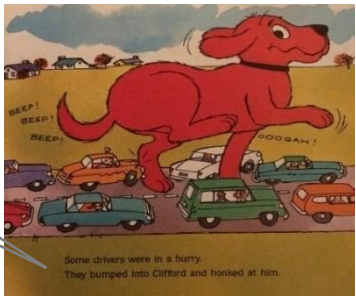
1. **Joint Attention & Social Engagement:** The ability to respond to and engage in shared, enjoyable experiences including looking to others to understand how they feel about their experiences and imitating others to learn new skills.

Comprehension Skill	Strategies & Supports	Resources to consider when implementing Literacy instruction
Lack of shared interest in the reading experience resulting in missed learning opportunities.	**Text Selection** • Select an attractive book with limited print on a topic that may be a preferred interest and incorporates flaps, moveable parts or textures. **High Interest Area: Dogs** *Cool Dog, School Dog* Flaps with key words relating to vocabulary and details	Examples young children: • Interest-Dogs: *Harry the Dirty Dog* (Author: Gene Zion); *Where's Spot?* Series (Author: Eric Hill) • Interest-Trains: *Chugga Chugga Choo-Choo, Thomas the Train* Examples for elementary aged children (at Amazon): • Interest-Dogs: *Cool Dog, School Dog* (Author: Deborah Heiligman); *Shiloh (The Shiloh Quartet)* (Author: Phyllis Reynolds Naylor); *Biscuit Series* (Author: Alyssa Satin Capucilli) • Interest-Trains: *National Geographic* (Author: Amy Shields); *Locomotive* (Author: Brian Floca)

Lack of shared interest in the reading experience resulting in missed learning opportunities. (continued)	**Reading the Text** During shared reading session, the adult should: · Use student interests as themes or increase involvement in theme-based lessons; read the book and animation with enthusiasm; and build strong relationships with students while being supportive and creating caring settings. · When the target time or page has been reached, verbal praise should be provided to the child (e.g. "You did a great job listening to the story!") and then the session should be ended. Use positively reinforcing statements: "Nice reading, you did a great job finding the main idea in the paragraph!"	Carnahan & Williamson (2010), p. 198, Table 7.5: What Do Exemplary Teachers Do? *Item 1: Motivate learners and create excitement about learning.* Carnahan & Williamson (2010), p. 62. Positive Reinforcement: implementing positive reinforcement during instruction.
Lack of imitation skills to practice the behaviors of reading and to develop new interests.	**Differentiates print from pictures** · Point to an illustration and state, "This picture shows what is happening." · Point to print and explain, "These words tell the story." · After several sessions, determine whether the child can differentiate print from pictures by saying, "Show me the words that tell the story." · Praise a correct response ("you did a great job showing me the words!) and provide assistance if the child is unsure or responds incorrectly. · Student must know what vocabulary words mean prior to using this strategy. The The Cat sat up Dog ran down The _____ _____ _____. **Use prompts if needed, e.g. highlighting the correct word or fill in first letter on blank lines.**	Ezell & Justice (2005). Chapter 6: Using Shared Reading to Develop Children's Emergent Literacy Skills; Section: Differentiates Print from Pictures, pp. 90-91.

Lack of imitation skills to practice the behaviors of reading and to develop new interests. (continued)	**Identifies directionality of left page to right page**	Ezell & Justice (2005). Chapter 6: Using Shared Reading to Develop Children's Emergent Literacy Skills; Section: Understands Print Directionality, pp. 91-95.
	• During shared reading, state, "I read this page first (pointing to the left page), and I read this one next (pointing to the right page)".	
	• After one to three reading sessions, say "Show me where I should read first—this page (model by pointing to the left page) or that page (model by pointing to the right page)."	
	• Praise the child's correct response and provide assistance if the child seems unsure or responds incorrectly.	
	• Point to where to start reading; follow with finger (left to right) • Use prompts such as faint arrows, and increasingly fade color of arrow(s) as skill grows • Use objects to emphasize details	
	Knows that print tells the story	Ezell & Justice (2005). Chapter: Using Shared Reading to Develop Children's Emergent Literacy Skills; Section: Knows that Print Tells a Story, pp. 95-96.
	• On one or two occasions during shared reading, point to the print and explain to the child, "These are the words that tell this story."	
	• After providing repeated explanations and modeling, check for understanding by saying, "Show me which part tells the story," or asking, "What do these words do?"	
	• Praise the child's correct response. Provide assistance or further modeling if the child seems unsure or responds incorrectly.	
	What do these words do? Taken from *Clifford The Big Red Dog* by Norman Bridwell	

Lack of imitation skills to practice the behaviors of reading and to develop new interests. (continued)	**Knows some letters of the alphabet** • Select a letter that is used at least three times in a chosen storybook. • Before shared reading begins, explain to the child that he or she will be looking closely at some words and finding a selected letter. Tell the child what letter is and show a written example. • During shared reading, interrupt the story on two or three occasions when the target words appear and say, "Put your finger on the letter "t" in this word?" • Praise all attempts and correct responses. Provide prompting if the child responds incorrectly. Fade prompts as child increases correct responses. • Continue practicing until the child is able to identify the target letter with consistency. **Fade verbal or textural prompts**: "Put your finger on the **t**": A ca**t** ran! ⟶ A cat ran! [Highlight letter(s) initially then reduce highlighting.]	Ezell & Justice (2005). Chapter: Using Shared Reading to Develop Children's Emergent Literacy Skills; Section: Knows Some Letters of the Alphabet, p. 98.
Lack of imitation skills to practice the behaviors of reading and to develop new interests. (continued)	**Knows basic components of sentence (basic to every sentence/story)** • Child understands two basic and important parts of sentence structure: 1) the concept of the person or "who" the story is about and 2) the action or "did what". • Understanding these concepts aids in understanding basic sequencing. • Teacher or peers model responding to questions first. • Use suggested resources, or design one for class/student.	Freeman and Dake (1997) *Teach Me Language* (pp. 265-271) and *Teach Me Language: Companion Exercise Forms* (pp. 105-106) with worksheets provided. • "Who" List: p. 266 in textbook and pp. 105-106 in Companion Exercise Forms book. • "Did What" List: p. 267 in textbook and pp. 106-106 in Companion Exercise Forms book.

Lack of imitation skills to practice the behaviors of reading and to develop new interests. (continued)	**WHO LIST** WHO? = the boy the girl the man the woman mom dad the baby the kids Sue Michael Mary Steven **DID WHAT LIST** DID WHAT? = ate jumped cried walked played slept ran swam talked read stopped clapped Recreated from *Teach Me Language*, pp. 266-267	
Lack of social engagement that enhances vocabulary development and increases experiences for background knowledge.	**Turn Taking** • Determine the child's current turn-taking frequency by conducting a shared-reading session and offering 5 conversational turn-taking opportunities. Note the type of turns, if any, that the child takes (i.e. nonverbal, vocalizations, or verbal). • Establish a turn-taking goal by specifying the turn type to be targeted (e.g. five vocal turns during one reading session). • During shared reading, offer the child at least 5 opportunities to take a conversational turn by providing a comment or asking a question and then waiting expectantly at least 10 seconds for the child to respond. • If the child does not respond after 10 seconds, provide assistance (prompt). Assistance for a nonverbal prompt would be gentle physical guidance to complete the response (e.g. guiding the child's finger to point to a picture). For a vocal or verbal prompt, provide the correct answer (e.g. "a train") and ask the child to try saying it too.	Ezell & Justice (2005). Shared Storybook Reading: Building Young Children's Language and Emergent Literacy Skills. Section: Turn-Taking Strategy, pp. 140-145.

| Lack of social engagement that enhances vocabulary development and increases experiences for background knowledge. (continued) | A turn-taking card can be used to prompt the student on turn taking **Myah's Turn** **Teacher's Turn** · Praise the child when he or she responds in any way for a completed conversational turn. · Keep a record of the child's number and types of turns taken during each reading session and note whether assistance was required. A long-term goal would be consistent and independent responding to each turn-taking opportunity using the form of turn most appropriate for the child (e.g. nonverbal, vocal, or verbal). Example data collection tool for literacy turn taking | |

Student Literacy Data

Student Name: C. H Observer 1: B. Thomas Observer 2: C. Smith Class/Teacher: Reading IOA: 92%

Definition of Reading Turns: When a comment or question pertaining to a book or story is provided by a teacher or peer, the student responds with any word or words during an individual or group reading session.
- Example for Group activity – Student responds with a reading turn in group activity with peers as assigned by teacher
- Example for Individual activity – Student responds with a reading turn in a one-on-one setting with a reading turn
- Student specific definition: - Student responds in a group setting with a reading turn.

Student target behavior definition: C.H will complete 5 turn-taking responses during reading instruction for a defined text, book, or passage.

Target Behavior: number of reading turns completed

Prompt Levels: I=Independent; V=Verbal; G=Gestural; P=Physical (Least to most)

2. **Theory of Mind & Social / Emotional Reciprocity**: The ability to recognize and interpret the thoughts, perspectives, intentions, and emotions of others to predict their behavior; understanding emotions through descriptions of body language and facial expressions.

Skill	Strategies	Resources to consider when implementing Literacy Instruction
Difficulty understanding the perspectives and emotional states of characters and/or author.	**Visualizing and Inferring** Inferring Feelings with Kindergartners ・ Help kids to better understand their own and others' feelings; introducing inferential thinking. ・ Use a feelings chart and a card with the word "sad" written on it. The card is pinned on the back of one student who does not know what it says. ・ Child with the card on their back goes to middle of group circle and peers give clues as to how they feel when they are sad to help the child guess the feeling word on the card. ・ Every few days introduce a new emotion (with a targeted range of emotions including mad, sad, happy, frustrated, worried, surprised, etc.) ・ The student volunteer turns slowly in the circle so all students can see the card. ・ Each student begins their sentence by saying "I felt that way when (my dog died, my game quit working, I couldn't go swimming)". After 5-6 students have responded, the teacher says "Ok (volunteer student), can you tell us (infer) what the feeling is?" ・ This can be done in smaller groups of peers with the student with ASD to target learning.	Harvey & Goudvis (2007); Chapter 9: Visualizing & Inferring; Strategy Lesson: Inferring Feelings with Kindergartners, pp. 138-139.

Difficulty understanding the perspectives and emotional states of characters and/or author. (continued)	• **Use a range of emotions when working on feelings.** • **With younger children a corresponding face can be used with the word on the card and the visual faded as appropriate.**	
Difficulty understanding the perspectives and emotional states of characters and/or author. (continued)	**Visualizing and Inferring** Visualizing with Wordless Picture Books · Visualizing to fill in missing information helping build meaning and clarify notion of visualizing (and what that means). · Find one to two pictures in the book and ask students to visualize (or picture in their mind/head) what is happening in the picture, or compare two pictures and write, draw, or talk about their response. · Misconceptions can be seen by observing the student's work and whether it was within context of the story. · Helps building meaning as the story is read. · Can serve as an anchor to help students remember how visualizing helps them remember what they read more.	Harvey & Goudvis (2007); Chapter 9: Visualizing and Inferring; Strategy Lesson: Visualizing, pp. 133-134.

Difficulty understanding the perspectives and emotional states of characters and/or author. (continued)	**Use wordless books for inferencing** - **What is happening in this picture?** - **Where does this take place?** - **Why is Carl standing next to the crib?** - **What do you think will happen next?** *Taken from Good Dog Carl by Alexandra Day*	Examples of wordless books for visualizing stories: - *Good Dog Carl Book Series*, by Alexandra Day (at Amazon) - *Snowman's Story*, Will Hillenbrand (at Amazon)
Difficulty understanding the emotional states of characters based on body language and facial expression descriptions in the text.	**Inferring with Text Clues** ・ Teaching inferring equation: Background Knowledge + Text Clues = Inference ・ Response: Three column chart title Background Knowledge (BK) / Text Clues (TC) /Inference (I). ・ Example: (BK) Babysitters should be watching kids + (TC) She is watching TV and the dad arrives home, stopping as he walks in the door, shaking his head, his eyes narrowed, and hands on his hips (How do you know that dad might be mad? What are clues from the text?) = The dad is mad because she is not doing her job (I) (Why is dad mad)? Based on the text, what are *text clues* that dad is mad based on his body language?	Harvey & Goudvis (2007); Chapter 9: Visualizing and Inferring; Strategy Lesson: Inferring with Text Clues, pp. 141-142.

Difficulty understanding the emotional states of characters based on body language and facial expression descriptions in the text. (continued)	*Tight Times* Anchor Chart (example):	Referenced text at Amazon: Tight Times, Barbara Shook Hazen (author) and Trina Schart Hyman (illustrator)
	Inferring with Text Clues	
	Book: *Tight Times* (by Barbara Shook Hazen)	

Background Knowledge (BK) (What I already know)	**+**	Text Clues (TC) (What I see and read)	**=**	Inference (I) (What I think or guess will happen because of the clues and what I already know)
Mom is busy getting ready for work in the morning		Mom says no when the boy asks for a dog.		The boy has asked for a dog before and mom is irritated because he is asking again.
Babysitters are supposed to watch kids they are babysitting.		Babysitter is watching television and dad gets mad.		The dad is mad because the babysitter is not doing her job.
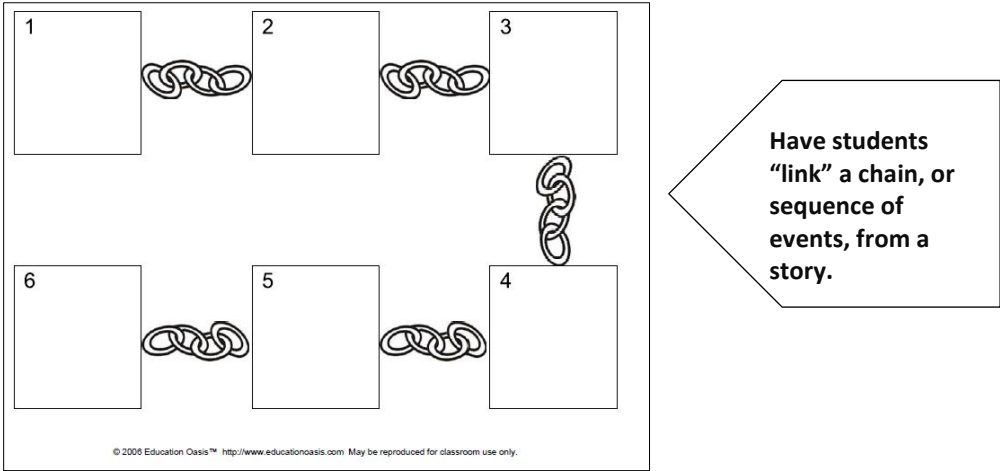
- Students should be clear on the definition of inferring.
- Use this inferring equation throughout the text to support understanding of inferring.
- Pair familiar terms with BK, TC, I equation
- Create an anchor chart in class with input from students.

3. **Central Coherence:** Understanding the central tenets of a passage and creating meaning from text details; the ability to integrate details in order to understand the "big picture" of a passage.

Skill	Strategies	Resources to consider when implementing Literacy Instruction
Over-focus on minor, irrelevant or concrete details in the passage thus missing the main idea(s) or overall purpose of the text.	**Determining Importance of Text** Sifting the Topic from the Details • Discriminating from the key topics and supporting details. • Use a non-fiction text, magazine, passage that is concrete with defined headings and short paragraphs under each heading. Target reading material to age and capability of student. • Students have paper with 3 columns (or pages) titled: Topic (which are the headings); details (included in the paragraphs), and Response (which is for the student to add their own thoughts, feelings, questions. • Teacher carefully explains what each section is for, how topics relate to main idea, how details are in paragraphs below topics. • Teacher may design specific questions for students for student responses related to topics and details being discussed. Related "wh" questions prompt more thoughtful responses. Students may need additional prompting or assistance to understand the concept of the activity, and their personal responses. • Pairing the student with a peer may be helpful where the peer can ask the questions and give their own examples to model responses and the student can then give personal examples. Referenced example (below): Lucky Lizard, A Chameleon's Day (*Scholastic News* Sample, April 2017) • Target reading that is age and level appropriate • Individualize content based on interest.	Harvey & Goudvis (2007); Chapter 10: Determining Importance of Text; Strategy Lesson: Sifting the Topic from the Details, p. 167. Resource examples: • Scholastic News: *We are Good Citizens!* (Grade 2). • "Howling Again" from *Wild Outdoor World* (4th grade on). Scholastic magazines for all elementary grades.

Over-focus on minor, irrelevant or concrete details in the passage thus missing the main idea(s) or overall purpose of the text. (continued)	**Sifting Topic from Details** **Magazine: Scholastic News, April 2017** (Title: Lucky Lizard; Article: A Chameleon's Day) 	Topic (What it is mostly about)	Detail (Who, what, when, where, why of the story)	Personal Response (What I think or feel)
How chameleon's use their body parts to survive.	Use their feet hold on to branches by wrapping around them.	*It would be cool to ha able to climb trees with my feet.*
	Use their bulging eyes to see far away to find food.	*Most animals don't have eyes that big.*
	Uses its long tongue to catch bugs that are far away.	*I wonder how many bugs they eat in a day.*
	It changes color to communicate with other chameleons, and different colors mean different emotions or feelings.	*They use their colors instead of words.*		
Comprehending all the rote facts in the passage but not blending them to understand the "big picture."	**Text Organization** Teach concept of text structures to help the student understand details and blending of ideas with reading narratives including identifying character characteristics, sequencing events, create a story web that integrates all story elements, retelling a story, and comparing two stories. ・ Use high interest and familiar materials to engage the student. ・ Use graphic organizers to help the student integrate story elements to better understand the overall story.	Iland, E. (2011); Chapter 6: Using Visual Tools to Improve Comprehension, pp. 175-176. Resources: • Florida Center for Reading Research, Comprehension Curriculum (34-page file provides lesson plans and ready to use graphic organizers). • Education Oasis for 58 free text to self and text to word connections. • Ed Helper free, reproducible graphic organizers on sequencing. Material also for primer paragraphs or passages for multiple, thematic exposure. Also

Comprehending all the rote facts in the passage but not blending them to understand the "big picture." (continued)	**Chain of Events** 1 2 3 6 5 4 © 2006 Education Oasis™ http://www.educationoasis.com May be reproduced for classroom use only. **Have students "link" a chain, or sequence of events, from a story.**	lists key vocabulary for passages and reading level of the material. • *Teach Me Language* Sequencing Story Events, pp. 272-273, *Teach Me Language Companion Exercise Forms*, pp. 107-108
Difficulty connecting information at the paragraph or chapter level.	**Think Aloud** Aids in monitoring overall comprehension and reflect on how text is being understood. ・ Teacher first models by selecting a short piece of text that allows modeling of the think aloud strategy. Thinking is shared out loud through questions or statements such as "…the dog ran away from home as he chased after his owner…". Teacher uses body language when thinking out loud to cue students that thinking aloud is happening. ・ Differentiate strategy in smaller group or pair student with a peer where they take turns doing think alouds with each other and stop as needed to ask questions of each other. ・ Students can be instructed to stop at the end of every paragraph (initially) with predefined questions. This strategy can be expanded to stopping after two paragraphs, then three paragraphs, etc. and adding additional questions. A visual reminder can be added to remind the student of stopping points (e.g. after each paragraph). ・ Questions for them to ask themselves can be provided on a notecard or checklist (see Resource Example).	Kluth & Chandler Olcott (2008); Chapter 6: Focus on Reading, Lesson Topic: Instructional Approaches, pp. 125-127. Resource example: Reading Rockets free (downloadable) Think Aloud Checklist can be used or adapted for individual students depending on targeted skill. ・ Start with one strategy Think Aloud and one cue word. Add strategies and cue words as the skill level is learned. Examples of books to use with Think Alouds (at Amazon):

Difficulty connecting information at the paragraph or chapter level. (continued)	• Adaptations can be made such as prompting such as "I think ____ will happen next because _____." Further adaptations can be made through using pictures for think alouds for non-verbal students, for example. **Think Aloud Checklist referenced provided example below:**	• *Clementine's Letter* by Sara Pennypacker, illustrated by Marla Frazee (Hyperion, 2008) • *Charley's Cat Family* by Jeff Magnuson, illustrated by Bettina Brasko (2017)
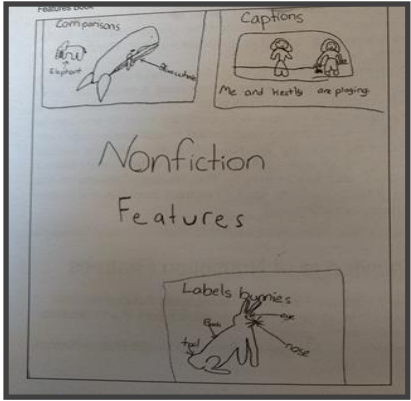
Think Aloud Checklist

Make a tally mark every time you hear one of the following:

Strategy Think Aloud	Tally Mark For Each Time Strategy Used	Cue Words
Predicting		I predict… In the next part I think… I think this is…
Questioning		Why did… What did… How did… Where was… Should there…
Visualizing		I see… I picture…
Personal Response		I feel… My favorite part… I liked/disliked…
Clarifying		I got confused when… I'm not sure of… I didn't expect…
Summarizing		I think this is mainly about… The most important idea is…
Reflecting		I think I'll… next time. Maybe I'll need to… next time. I realized that… I wonder if…
Making Connections • personal connections • text-to-text connections		This is like… This reminds me of… This is similar to… If it were me…

4. Executive Function: The ability to organize information and thoughts for coherency, self-monitor for comprehension, and execute plans of action.

Skill	Strategies	Resources to consider when implementing Literacy Instruction
Difficulty suppressing irrelevant background knowledge and shifting meaning to different contexts.	**Building Background Knowledge of (Nonfiction) Features** · Build background knowledge of nonfiction texts using captions by creating books that illustrate them. Adapt by using fictional features depending on the needs of the student. · Put a different nonfiction feature on each page and two columns with the headings Feature and Purpose which can be a record for all students. Headings can be titled differently, depending on how the class is instructed. · Use (two, four, or six) 8x11 sheets of paper folded in half and stapled for each student to create their own book. Number of pages should align with needs of the student and add pages as the student masters the assignment. · Provide pictures from class or have students bring pictures from home. · Have the students write captions under the pictures. The teacher should create his or her own examples, demonstrating captions. Example "This picture shows me with my cat Jake". Differentiate to level of student ability and learning. · Students can share captions in small groups and with peer to peer settings. Example from Harvey &Goudvis (*Hungry, Hungry Sharks*) below: • Students can draw pictures or use pictures from home. • Write captions under the pictures with the features noted. • Use text prompts if needed to individualize for students.	Harvey & Goudvis (2007); Chapter 10: Strategy Lesson: Determining Text Importance, pp. 159-161. Resource Examples: · *Hungry, Hungry Sharks* (Step-Into-Reading, Step 3) by Joanna Cole · *My Parents Think I am Sleeping* (I Can Read Level 3) by Jack Prelutsky, illustrated by Yossi Abolafia.

Making irrelevant connections between contexts, concepts, or relationships.	**Monitoring Comprehension** Read, Write & Talk · Teaching readers to stop, think, and react to informational text. · Jotting thinking in the margins. · Connect and engage student in lesson by asking about traditional comprehension questions that target literal comprehension (e.g. who, what, where). · Explain that readers need to stop, think and react as they read. · Review a presented article. · Model reading, stopping and recording of inner conversation—your questions, connections and confusions—using chart paper and markers · Guide students in capturing their thinking in the margin of the presented article. · Encourage collaboration with a partner as groups reflect on the content, the process and any lingering questions. 　· Allow students to practice independently applying the strategy of Read, Write and Talk on their own. **Provide visual supports as needed for stopping points in the margin, prompting thinking, and what to record in the margin.** (Scholastic, Lazy Lizard, April 2017) 	Harvey & Goudvis (2007); Chapter 6: Monitoring Comprehension; Strategy Lesson: Read, Write, and Talk, pp. 82-83. Resource Examples: · _Time for Kids_ article "Could you Survive a Week Without TV?"

Difficulty organizing and planning the reading experience (e.g. timelines for reading long texts) and self-monitoring for understanding (meta-cognition).	**Self-Monitoring** Think-Aloud · Thinking about what is being read can be an effective way to self-monitor reading comprehension. · Helps slow down process so students are more engaged with the content. · Teacher encourages student to stop at the end of every sentence (or paragraph, or page, or other defined point). They need to think about what was just read and write one (or more) details about the passage. · Alternatively, they may draw a picture, fill in a graphic organizer, etc. Sample taken from Education Oasis. **Storyboard** Directions: Draw a picture of the major events in the story. - Mark stopping points in text. - Summarize passage in box by writing or drawing a picture.	Carnahan & Williamson (2010); Chapter 11 Vocabulary, Lesson: Teaching Students to Use Context Clues, p. 338.

5. Restricted Interests and Motivation: Intense preoccupation with specific interest areas or activities which impact motivation to read non-preferred text or results in getting stuck on words or phrases.

Skill	Strategies	Resources to consider when implementing Literacy Instruction
Intense focus on specific preferred interest areas so does not engage in reading in non-preferred areas interests.	**Fascination-Focused Books** Use the area of interest to promote reading and comprehension by adapting materials. This enables the student to stay with the class due to motivation to read related to areas of interest while learning new material. • Create instructional material around the student's area of interest, and target area of interest. • Integrate key vocabulary and concepts into a short story about the interests so student can read and reread the material to gain greater understanding. • Materials such as pictures, cutouts, text related to the area of interest made by the teacher serve as reinforcement for the student engage in the material. • As reading ability is gained, connect material from areas of interest to classroom reading assignments. Start with associating brief excerpts of reading, and slowly increase as the student gains greater comprehension ability. **The Jedi Code** Using a Student's Encompassing as a Tool for Academic Success • **START example of using a specialized interest to promote engagement in academics.** • **Set reading goals around area of interest.**	Kluth & Chandler Olcott (2008*)*; Chapter 6: Focus on Reading, Lesson Topic: Instructional Approaches, pp. 132-133. Resource Example: • Texts, worksheets, articles that are of high interest to the student. • Using fascinations to promote learning at START Looking at ASD Differently
Gets stuck reading only certain words, phrases, or sections in text.	**Peer Support in Pairs (Partner Reading)** • Pairs two readers around same text. Can be at the same or different reading levels. • Seated side by side for quiet talking between them. • Choose or assigned a common text that both can read at about the same pace. Can also be used with non-text material such as examining visuals. • They choose to read text silently or aloud, depending on their own comfort level and teacher preference. One can also read aloud while the other reads silently.	Kluth & Chandler Olcott (2008*)*; Chapter 3: Promoting Literacy Development in Inclusive Classrooms, Lesson Topic: Partner Reading, pp. 57-59.

| Gets stuck reading only certain words, phrases, or sections in text. (continued) | • Teacher designates several stopping points in the text, or students agree on those points themselves (e.g. after every paragraph, end of subsections, every page, etc.)
• Pair alternates reading if reading aloud or at the same time if reading quietly.
• At each stopping point, students discuss what they are thinking about the text (have to say something before moving on). Can share what they have gained from their own reading.
• One or both can make a list of questions or observations to use during class discussion.

• **Peers are seated next to each other for paired reading.**
• **At stopping points discuss what they think about the text.**
• **Provide cards with questions to guide responses.** | |
| | **Learning Stations**
• Stations or areas are set up with curriculum based activities for students to explore independently.
• Students move from station to station in small groups of 4-6 and teacher moves around the room to monitor progress and assist.
• Promotes smaller working groups and student's choice of activity.
• Easier to accommodate individual student's interests and strengths.
• Support inclusive classrooms as allow teachers to work with individual students or small groups without pull out time.
• Make expectations clear to the entire class and through the use of a visual or written schedule if needed to support individuals.
• Consider the number of stations a learner will be able to complete and accommodate as needed to promote success. | Kluth & Chandler Olcott (2008*);* Chapter 3: Promoting Literacy Development in Inclusive Classrooms, Lesson Topic: Partner Reading, pp. 60. |

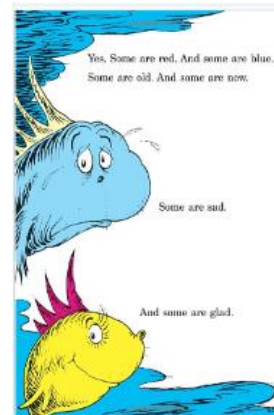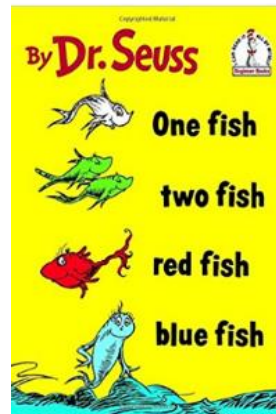| Gets stuck reading only certain words, phrases, or sections in text. (continued)	Daily 5 checklist with smiley faces for Read to self, Read to someone, Listen to reading, Work on words (cat), Work on writing. • **Example of a written schedule for daily learning stations.** • **Create in checklist form with adding a smiley sticker for completing daily activities.**	
	Direct Instruction • Many emergent literacy skills not learned through reading storybooks, but through explicit (direct) instruction in emergent literacy skills promotes increased learning. • While reading storybook to children make direct comments and ask questions related to the text. • Example: I hear two words that rhyme on this page (red and bed). Who can tell me another word that rhymes with red and bed? • Identify words ahead of time related to vocabulary in text. • **Dr. Seuss' *One Fish Two Fish Red Fish Blue Fish*** • **Inside page taken as an example of rhyming.** • **Ask questions while reading to students.** 	Carnahan & Williamson (2010); Chapter 8: Emergent Literacy Skills, Lesson: Being Explicit and Systematic, p. 231. Resource examples: • Amazon: Dr. Seuss books that incorporate rhyming.

Fails to monitor for comprehension (meta-cognition) due to focus on preferred interests and topics.).	**Program for Independence during Literacy Instruction**
	   Promote independent performance (self-management strategies)
	   ・ As student learns the material, reduce number of prompts and embed reinforcement into materials.
	   ・ Student should learn to independently manipulate schedules and work systems during literacy instruction.
	   ・ Student can then monitor behavior on target skill and then reinforce themselves then an agreed-upon target is met.
	
	   Example to help student self-monitor:
	   ・ Student can complete most literacy activities, relies on teacher to prompt and goes off task if not prompted.
	   ・ Teacher develops a checklist for student that covers questions related to the reading, and can include fill-in blanks:
	      ・ How does this chapter (page, paragraph, etc.) relate to the *main idea* of the book (or title of the chapter)?
	      ・ What was the main idea of the chapter just read?
	      ・ Where did the characters travel in this part of the reading?
	      ・ What were the characters happy about in this reading?
	      ・ What do you think finding the lucky horseshoe means?
		Carnahan & Williamson (2010); Chapter 3: Effective Instructional Strategies for Students with Autism Spectrum Disorders: Keys to Enhancing Literacy Instruction, p. 74.
		
		Resource Examples:
		   ・ For additional information on self-management, examples, templates, and articles, go to START Self-Management
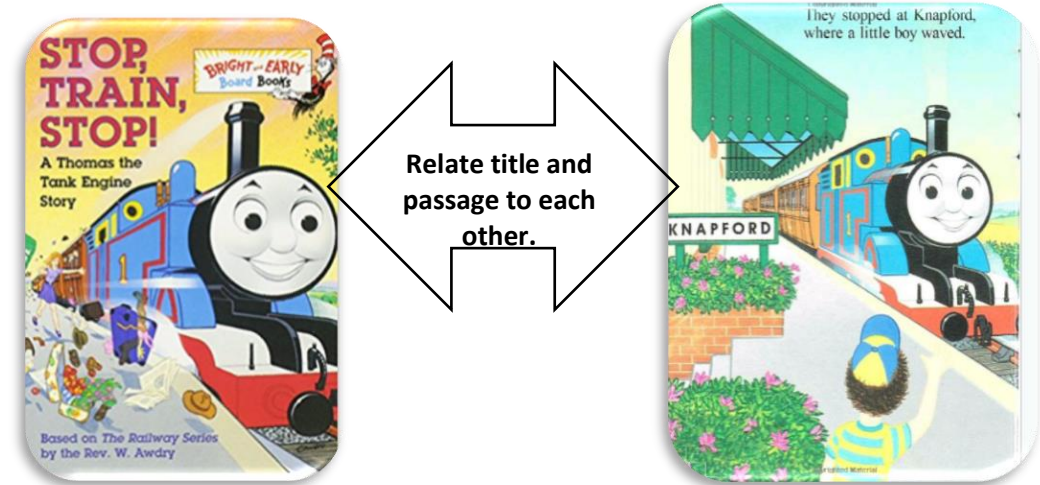
| Fails to monitor for comprehension (meta-cognition) due to focus on preferred interests and topics.). (continued) | Example of a different literacy self-management (self-evaluation) checklist to promote greater independence in reading activities:
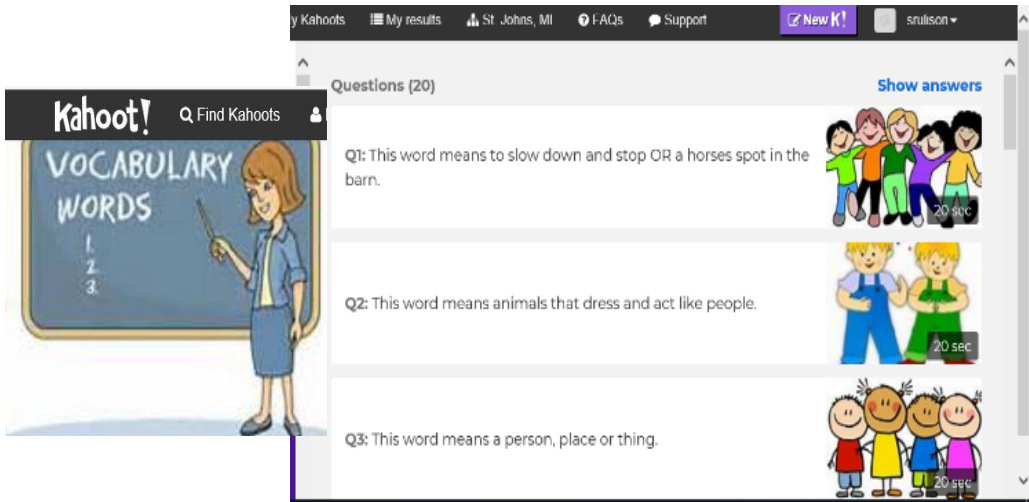
STUDENT SELF-EVALUATION READING

Circle thumbs up if you *agree*, sideways thumb if you *sort of agree*, and thumbs down if you *do not agree at all*.

Name: _____ Date: _____

I read the chapter I was assigned today.	👍 👌 👎
I stopped to do a self-check where my teacher had marked in my reading to answer the 3 questions on my worksheet.	👍 👌 👎
If I could not answer the questions when I did my self-check, I read that part again and tried again to answer the questions.	👍 👌 👎
I was quiet during reading so other students could read.	👍 👌 👎
I put the main idea of the reading assignment today on my organizer sheet.	👍 👌 👎
I found 5 details from the reading assignment today and put them on my organizer sheet.	👍 👌 👎
I asked questions of my teacher if I did not understand something or needed a break.	👍 👌 👎
I took part in all of the reading stations today.	👍 👌 👎
I did my 20 minutes of independent reading today.	👍 👌 👎		• **Create an age and level appropriate self-management checklist.**
• **Have students rate themselves daily on their reading goals and activities.**
• **Provide assistance in areas that appear challenging.**

6. Prior Knowledge: The ability to apply relevant background knowledge to make global and abstract connections in text.
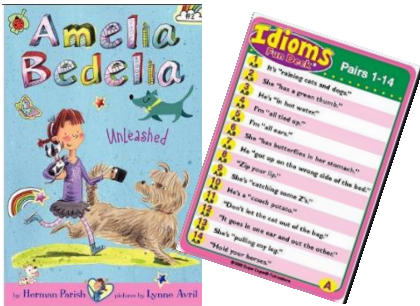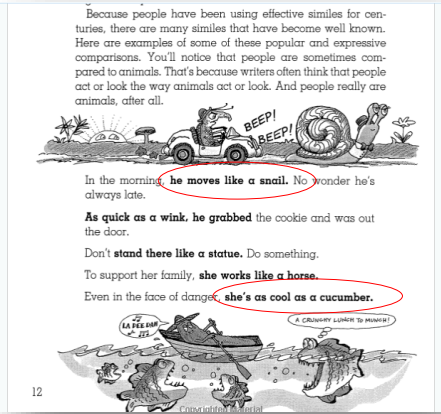
Skill	Strategies	Resources to consider when implementing Literacy Instruction
Difficulty accessing and applying relevant background knowledge in order to understand the context or situation in text.	**Pre-Reading: Noticing and Relating the Title to the Text** • Provide a clear title for a passage that does not have a title. Example: create a title for a passage about a baseball team that is in the playoffs for the World Series such as "The Road to the Championship". • Prepare a primer passage that contains all for the main ideas of the passages to be read. After reading it, ask the readers to look at the title again, and make a connection between the title of the passage to be read and the title. This helps readers focus on information important to the passage to be read. • After reading the passage, discuss with the reader how the primer passage and the title relate to each other. **Relate title and passage to each other.** *Taken from Thomas the Tank Engine by Rev. W. Awdry*	Iland, E. (2011); Chapter 4: Evidence-Based Practices for Improving Reading Comprehension in Learners with ASD, pp. 104-105.

Difficulty with word meanings (semantics) in context of the text.	**Assistive Technology (p. 126)** Small, handheld computer or device (phone apps can be used) which reference materials have been integrated and can provide instant clarification when a reader is unsure of the meaning of a word. Examples: • Text-to-speech(TTS) (take notes and writing comments while reading) • Audio books • Optical character recognition • Graphic organizers • Annotation tools (take notes and write comments while reading) **Example of a Text to Speech device.** An application that is a free download, and converts text to words: **Seeing AI**: "talking camera". An application that converts text to words by taking a picture of the text. This is an iPhone application at this time with an Android version being developed.	Iland, E. (2011); Chapter 5: Building Vocabulary-Promising Practices to Improve Comprehension, pp. 117-140.

| Difficulty with word meanings (semantics) in context of the text. (continued) | **Use Objects to Preteach Vocabulary (p. 131)**
Priming content ahead of time by collecting thematic objects related to the story that can be explored through touch to create personal knowledge before teaching.
   • Use flashcards with students or have them work with peer partners.
   • Use electronic forms of flashcards and games to expose to vocabulary.

2nd Grade Vocabulary Words: Taken from Kahoot!

 | Resource Examples:
   • FlipQuiz: free online vocabulary generator.
   • Kahoot!: Free online vocabulary, quiz, and game generator K-12.
   • PBS Kids: for early Elementary vocabulary games and practice
   • Quizlet for upper elementary and older students.
   • Vocabulary.com: for later elementary students. |
| | **Visual Dictionaries (p. 133)**
Use the internet and word processing programs to find photographs, clip art, and other images to enhance comprehension. Visual images can be used to create a personal dictionary and reinforce word meanings. | Resource examples:
   • Merriam-Webster's Online Visual Dictionary to look up words with associated pictures.
   • Merriam-Webster's Visual Dictionary (book) from Amazon. |

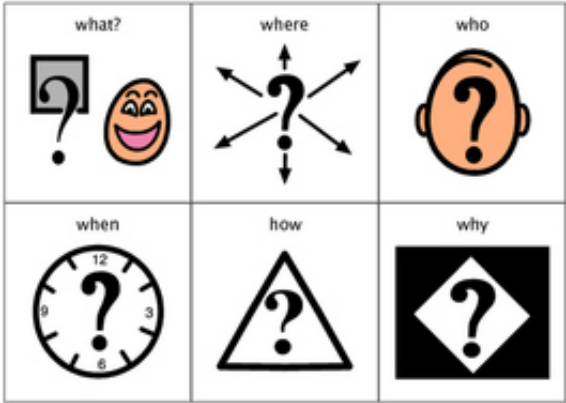|		
Difficulty with word meanings (semantics) in context of the text. (continued)	**Merriam-Webster's Visual Dictionary**	
Difficulty with comprehension of text requiring a lot of background social knowledge and social experiences (e.g. novels) versus those that require limited social understanding (e.g. technical text).	**Activating and Connecting Background Knowledge** Text-to-Self Connections: Relating the Characters to Ourselves · Linking the text to our lives. · Coding the text for text-to-self (T-S) connections appropriate for the child (e.g. nonverbal, vocal, or verbal). · Teacher can model T-S connections, writing a few words about their own connections to past experiences. · Explain what text is when starting (anything in print that is written down—a book, newspaper, poem, magazine article, etc.) so they comprehend the word text. · Students then write down T-S connections as the teacher reads the story. · Goal is to make connections between characters in the story and their own lives and gain insight to the story as a whole. **Example of prompting to facilitate text-to-self connections during reading:** **Help Students Make Text-to-Self Connections** · Teacher models using prompt: "this chapter reminds me of a time when my whole family took a vacation to Florida!" · Teacher then asks (group or individual): "what does this chapter remind you of?" (students can draw a picture or write it down). · Other prompts: "how is that like to your life"; "how is that different than your life?"; "has something like that ever happened to you?"; "what were you feeling when you read this?"	Harvey & Goudvis (2007)*;* Chapter 7: Activating and Connecting to Background Knowledge; Strategy Lesson: Text-to-Self Connections: Relating the Characters to Ourselves, pp. 94-95. Suggestions for picture books: · Amazon: *Owen, Chrysanthemum, and Julius, the Baby of the World,* by Kevin Hankes

7. Literal (vs. Abstract) Thinking: Focus on factual information such as events and actual objects or people in the text and an absence of focus on concepts and generalizations often confused by a lack of understanding idioms, irony, figures of speech, innuendo, and sarcasm.

Skill	Strategies	Resources to consider when implementing Literacy Instruction
Difficulty understanding figurative language (e.g. metaphors) and use of idioms, irony, innuendo, and sarcasm.	**Explicit Instruction of Idioms** · Repeated exposure to idiomatic phrases and their meanings · Select common idioms (frequently used in speech or writing) and relevant idioms (that are found in curriculum and selected readings). · Distinguish between idioms that are outdated and idioms that are currently used. Teach current idioms, including slang idioms that are not objectionable. Talk with peers to see what is current. · Use materials that compare both literal and figurative meanings of idioms. Materials with illustrations are a preferred because they are visual and concrete. • **Highlight figurative phrases.** • **Pair with peers to explore "what do *you* think it means?"** • **How cool are cucumbers? What does that *really* mean?** • **Use graphics to support meaning of phrase.** *Taken from It Figures: Fun Figures of Speech by Marvin Terban*	Iland, E. (2011); Chapter 4: Evidence-Based Practices for Improving Reading Comprehension in Learners with ASD, pp. 109-110. Resource examples: · *Amelia Bedelia Book Series* by Peggy Parrish (Author). HarperCollins. *Amelia Bedelia Book Series* at Amazon · *In a Pickle and Other Funny Idioms (2007), Mad as a Wet Hen (2007), and It Figures! Fun Figures of Speech (1993)* by Marvin Terban and Guilio Maestro (Author, Illustrator). San Anselmo, CA: Sandpiper Press. · *What Did You Say? What Do You Mean?: An Illustrated Guide to Understanding Metaphors* by Jude Welton and Jane Telford (Author, Illustrator). Philadelphia: Jessica Kingsley Publishers, 2004. · Idioms Fun Deck and games at Super Duper.

Difficulty ignoring irrelevant factual information in text and missing context cues and information that enhances understanding.	**Determining Importance in Text**
	Important to Whom?
	  • Purpose: Understanding that there may be a difference between what the reader thinks is most important and the writer's big ideas
	  • Resources: Article from magazines like *Time for Kids, Scholastic News, National Geographic* Explorer or writing from nonfiction trade books
	  • Response notebooks, considering what they think is most important, and then thinking about what the author most wanted them to learn from the reading. Responses can be in writing or drawn.
	
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	| 	Harvey & Goudvis (2007); Chapter 10: Determining Importance of Text; Strategy Lesson: Important to Whom? p. 167. Resource examples: • *Time for Kids, Scholastic News, National Geographic Explorer*, writing from non-fiction trade books.

Applying only one meaning to a word and failure to use context cues to recognize a different meaning is necessary.	**Connotation: Shades of Meaning**
	Words that appear to be synonyms may have subtle, implied meanings that can be confusing. Readers with ASD often need to be taught unstated meanings and the emotion behind the words. This can help expand word choices and understanding.
	  • Create a visual to help support the different types (or shades) of meaning of words.
	  • Use 3-5 sample paint chips or cards in varying shades of the same color.
	  • Approach utilizes visuals to connect concrete and concrete concepts to shades of paint and abstract concepts (shades of meaning).
	  • Example for teaching to classroom or group:
	    • Start with a familiar word such as fun and four synonyms for fun: *enjoyable, exciting, awesome,* and *amusing*. Explain that the words mean the same thing and are synonyms.
	    • Write the words in order on a paint chip according to the *intensity* of the meaning from lightest to darkest or weakest to strongest.
	    • Explain that connotation means the undertone or feeling behind the words and you are ranking the words from weakest to strongest (connotation) or feeling.
	    • Once the concept has been established using preferred topics, select other connotative synonyms to tech from appropriate grade or reading level material.
		Iland, E. (2011); Chapter 5: Building Vocabulary-Promising Practices to Improve Comprehension, pp. 141-144.
		
		Resource information:
		  • Get paint chips or card samples at local convenience stores such as Wal-Mart, Home Depot, Meijer, Target, or other places.
		  • Get 3-5 different shades per color.
		
		Sample resources:
		  • *What to Say* (Word Choice Meanings) is a sample activity inspired by Shades of Meaning (described in strategy example) in text Appendix G, p. 254.

Applying only one meaning to a word and failure to use context cues to recognize a different meaning is necessary. (continued)	**Example: shades of meaning for *fun*:** Enjoyable Amusing Exciting Awesome • Student should understand connotations are subjective; people may react differently to words and may rank the intensity of words differently; author's word choice reflects his or her perspective; word choice with specific connotations can give extra meaning to writing; people also choose words with connotation when speaking.	

8. Pragmatics: The ability to understand language and communication in social contexts and thus predict character intentions and behaviors.

Skill	Strategies	Resources to consider when implementing Literacy Instruction
Difficulty understanding perspectives or intentions based on the narration of characters and context cues.	**Reciprocal Teaching** Uses summarizing, questioning, clarifying, and predicting using "wh" questions (perspective taking) questions in matching exercises, flashcards, fill in the blank. This is an interactive peers and student activity. • Provide a checklist including icons with key words or illustrating key words or phrases to monitor their own reading and interactions with peers. • Student and peers ask each other who, what, when, where, why, how questions using cards to keep their conversations on track and focused while and after they read. Use some or all of the cards, as appropriate for the student and story. • Start with one to two cards that are most easily inferred, e.g. who, where, and increase complexity with what, how, and why. **Example Cards:** 	Kluth & Chandler Olcott (2008); Chapter 5: Focus on Reading, Lesson Topic: Instructional Approaches, p. 127-128. Resource examples: • Create cards for using during activity with who, when, and where on them (example at left) • Fun Deck: Wh Questions and games for additional practice at school or home. Many options available-search on WH Questions. Available at Super Duper Publications

Focus on concrete details in narrative text (e.g., what a character said specifically) rather than focus on conversation and context cues to gain an understanding of plot and character development.	**Questioning** Questioning That Leads to Inferential Thinking · Making meaning through asking questions. · Use a poem, such as Langston Hughes' poem "Dreams": *Hold fast to dreams* *For if dreams die* *Life is a broken-winged bird* *That cannot fly.* *Hold fast to dreams* *For when dreams go* *Life is a barren field* *Frozen with snow.* · Teacher starts with modeling own questions and struggles to understand the poem by asking questions. · Create a chart of questions that students ask and possible answers. Write them as the poem is read (not stopping to evaluate each one). · Questions serve as prompts to interpretation of the poem and inferences made by the class. · No correct or incorrect answers, but open to inferences and interpretation. **Example: Chart of Questions (referring to poem)**	Harvey & Goudvis (2007); Chapter 8: Questioning; Strategy Lesson: Questioning that Leads to Inferential Thinking, pp. 119-120. Examples of poems or short rhyming stories to use with K-3 children: · *Wind on the Hill* by A.A. Milne · *Bear Snores On* by Karen Wilson and Jane Chapman Examples of poems to use with 4th grade and older children: · Dreams by Langston Hughes · The Mountain and the Squirrel by Ralph Waldo Emerson

Example: Chart of Questions (referring to poem)

Teacher models own questions and attempt to understand:	• **"What does hold fast to dreams" mean?** • **"Could life is a broken-winged bird mean that life is sad?"**
Teacher solicits questions from students	
Student question	Possible answer
Student question	Possible answer
Student question	Possible answer
Student question	Possible answer

Difficulty making inferences about characters' emotions and perspectives based on subtle cues or context in text.	**Monitoring Comprehension** Knowing When You Know and Knowing When You Don't Know • Monitoring comprehension to clarify confusion and answer questions about the text related to characters and other information. In this exercise, focus on the emotion of characters. • Use Sticky noted coded "Huh?" or a "?", or other term selected by the student for confused, or with a light bulb for the reader's illumination. Coding technique helps student monitor their comprehension and stay on track with their thinking. Modify this to meet the need and interest of the student. For example, use markers that relate to the student's interests. If the student likes cats, put cat stickers on sticky notes or use cat shaped sticky notes to make it more interesting for the student. • Students then should be instructed to think about how the word they are confused about is used in the assigned passage, looking at clues in the assigned passage. Example: use cat stickers to mark words that are confusing for a student with a strong interest in cats.	Harvey & Goudvis (2007); Chapter 6: Monitoring Comprehension; Strategy Lesson: Knowing When You Know and Knowing When You Don't Know, p. 81. Resource examples: • Amazon: Animal sticky notes • Amazon: Emotion sticky notes

9. Repetitive Patterns of Behavior: The desire for predictability that results in rigid adherence to schedules, routines, and thinking in an attempt to create "sameness."

Skill	Strategies	Resources to consider when implementing Literacy Instruction
Literal, concrete and inflexible thinking that prevents abstraction or understanding of text within context.	**Interactive Strategies** • Use of technology: software to provide direct instruction and practice with vocabulary; web-based resources; using PowerPoint; others. • Target areas of interest initially and work to generalize to other topics once vocabulary is mastered. • Flashcards for vocabulary: can be done with peer or teacher. **Construct-a-Word Interactive game found at ReadWriteThink.org**	Carnahan & Williamson (2010); Chapter 11 Vocabulary, Lesson: Use of Technology (online resources also provided), p. 333-335.
	Word Games (p. 335) • Can be electronic (software) or interactive with a teacher or peer and can reinforce learning and help generalize information. • Topics should be of interest to the student, especially if the student has strong interests in a particular area (e.g. animals, trains, a superhero, etc.) • Think about the knowledge the student will gain through selected game. • Game should allow the student to enhance vocabulary acquisition and use the word in writing or speech. • Providing students an opportunity to connect new vocabulary words with prior knowledge and experiences enhances their understanding of the words. • Choose matching games to pair words with written or picture definitions, synonyms, antonyms, or cloze sentences where the word is used appropriately.	Resource Examples (Carnahan & Williamson, 2011, p. 335). Online Resources (website may target specific age ranges): • Readwritethink.org: offers materials for a range of reading and writing skills and strategies. Excellent vocabulary lessons that can easily be adapted to fit the needs of students with ASD. • PBS Kids Vocabulary Games: offers a number of vocabulary, word, and story games. • Vocabulary.com: provides many types of word lists and games for

Literal, concrete and inflexible thinking that prevents abstraction or understanding of text within context. (continued)	• Students can track words for points and redeem points for rewards that are meaningful to them. Examples can be items, or a specific time with a preferred activity or interest. **PBS Kids Power Words** **and other vocabulary and educational games.**	use by both students and teachers in middle school or above. • Wordinfo.info: provides teachers with search engine to access multitude of information about a specific word, including origins, family units, and sometimes poems that include the word.

Difficulty with multiple meanings of words; Likely to have a single meaning without considering context.	**Teaching Vocabulary through Synonyms (p. 122)**
	Use to help clarify word meaning in context using a word processing program (many with ASD prefer keyboarding to handwriting due to fine motor issues). This method addresses vocabulary and appropriate use of context.
	• Have student type text from a sentence, paragraph, or passage (teacher may need to model initially to demonstrate the exercise).
	• Materials from assigned text can be used, or material can be created for this exercise.
	  • Example: *The boys ran through the dusk and concealed their presence in the forest*.
	• Have the student preread the text and use the computer to highlight any words he or she does not know.
	  • Example: *The boys ran through the ==dusk== and ==concealed== their presence in the ==forest==.*
	• For each highlighted area, have the student right-click their mouse. They should see a list of options that are synonyms (this option should be adjusted to type of computer software being used).
	• Have the student click a word he or she recognizes from the list and knows the meaning of.
	  • Example: *The boys ran through the ==nightfall== and ==hid== their presence in the ==woods==.*
		Iland, E. (2011); Chapter 5: Building Vocabulary-Promising Practices to Improve Comprehension, pp. 117-140.

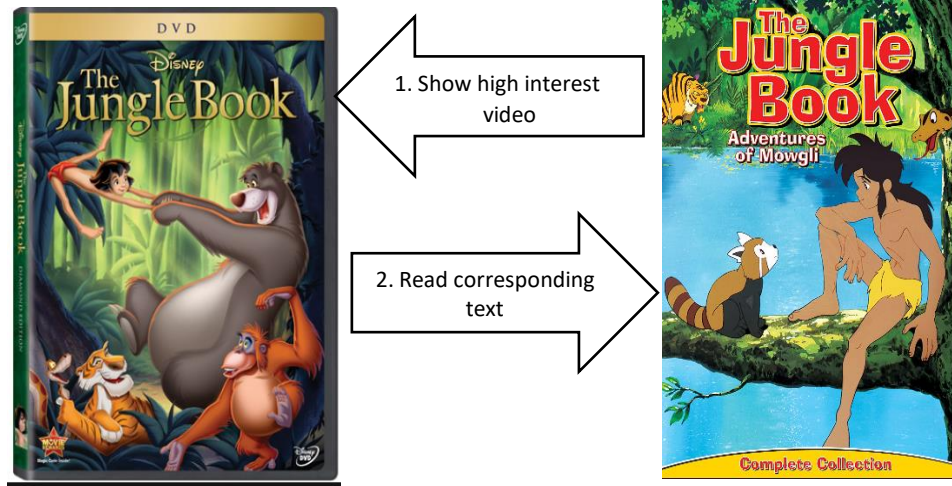|		
Difficulty with multiple meanings of words; Likely to have a single meaning without considering context. (continued)	• Have the student read the text with the substituted, familiar words in place of the unfamiliar words. • Check for understanding of the passage with the synonyms in place. • Ask the student to reread the original passage and check for understanding.	
Difficulty generalizing knowledge or meaning from personal experience to the context of text.	**Boosting Background Knowledge** Strategy 1: • To help create mental images as they read, show a movie or video clip or artwork slides related to the topic. Strategy 2: • Brainstorm association students make with the topic and record them on chart paper, or use software and a projector and have students shout ideas as you type them and display them for students to see. • Share other books related to the topic, including easy picture books that can be reread by the students to make explicit connections between the topic and students' special interests. • Ask the students' parents to share experiences and to connect past family experiences to the new text or unit. • Have students turn or get in small groups and talk to each other about their experiences, memories, or knowledge in a given area. • Connections can be made during typical routines and activities in school life when they are included in social (e.g. recess, art, locker routines) and academic (math, social studies, band, academic clubs). Strategy 3: • Create connections between experiences and a topic by using a graphic organizer such as a "What I KNOW, What I WANT to Know, and What I LEARNED" (KWL chart). Example: | K: What I KNOW	W: What I WANT to Know	L: What I LEARNED | |---|---|---| | Michigan is a state. | When did Michigan become a state? | Michigan's stone is the Petoskey stone. |	Kluth & Chandler Olcott (2008); Chapter 5: Focus on Reading, Lesson Topic: Instructional Approaches, p. 124. Resource Example: • KWL chart described in Strategy 3 in Kluth & Chandler Olcott, p. 125.

10. Language, Communication & Vocabulary: The ability to understand the complexities of language, communication, & vocabulary to comprehend text.

Skill	Strategies	Resources to consider when implementing Literacy Instruction
Difficulty with communication skills that impact ability to answer questions or demonstrate knowledge.	**Closed Captions (p. 158)** Text that appears at the bottom of a screen for television programming, movies, or DVDs. Captions may help fill in other relevant information for the story, for example the mood of the music being played. It is a way to map speech to print and supports auditory comprehension of oral language. This technique can also be used in the home environment. To implement: ・ Start with a familiar or high interest program or show. ・ Bring the captions to the student's attention. ・ Explain why to pay attention to closed captions. ・ While watching, pause the show at different points to reinforce the meaning or relevance of the captions. ・ Have the student respond to first basic comprehension questions initially (i.e. "who was the main character?"). ・ Adapt response method to student's style of learning, for example if the student is non-verbal, let them respond on a worksheet or computer program. **What do you think Mickey Mouse means when he says "there are so many places to see?"**	Iland, E. (2011); Chapter 6: Using Visual Tools to Improve Comprehension, pp. 159-160. Resource Examples: *Closed Captions:* ・ There are many programs and shows that may be a high interest area available now on YouTube, and have closed captioning options. ・ Example: for a Mickey Mouse Clubhouse video on YouTube: Go to Mickey Mouse Clubhouse video. Go to the Settings icon at the bottom right of the screen that looks like a gear. Select the Subtitles/CC option. This may give you the option to select the color. Click it to turn it on. The written captions appear on the screen as the story is narrated.

Difficulty with communication skills that impact ability to answer questions or demonstrate knowledge. (continued)	**Film and Visualization (p. 160)** Showing a film of literary work before reading the corresponding book can be beneficial. Start with short movies and books that are closely matched in content. Key details of the story can be analyzed before reading the text. Use a preferred topic when starting this strategy. **Example: The Jungle Book**: 1. Show high interest video 2. Read corresponding text	Island, E. (2011), Chapter 6, Film and Visualization Short Stories, p. 160. • Example: *I Am the Dog* by Daniel Pinkwater, Jack Davis (illustrator). Narrated video I Am the Dog.

Difficulty with communication skills that impact ability to answer questions or demonstrate knowledge. (continued)	**Graphic Organizers (p. 169)** A visual tool to help organize information and show the relationship between concepts, in a one-page handout. Graphic organizers can be called concept maps and come in many forms including webs, diagrams, graphs, charts, and outlines. **Examples of graphic organizers:**	Island, E. (2011), Chapter 6, Graphic Organizers, p. 169. Graphic Organizers: • Can be made from Microsoft Word or PowerPoint software using SmartArt Graphics or the shapes option. Tutorial on using PowerPoint SmartArt Graphic tool • Florida Center for Reading Research, Comprehension Curriculum (34-page file provides lesson plans and ready to use graphic organizers). • Freeman and Dake, Pre-Reading Comprehension graphic organizers: pp. 268-276; Freeman and Dake companion worksheets pp. 105-114.
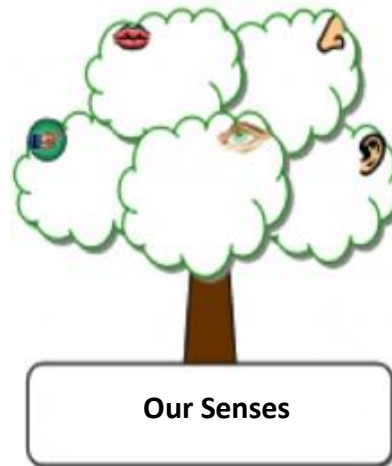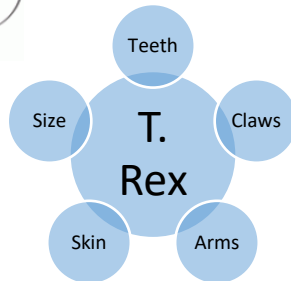
Difficulty understanding vocabulary nuances (e.g. homographs (words spelled the same with more than one meaning) or homophones (words pronounced the same but with different meanings).	**Word Elements: Suffixes, Affixes, Root Meanings (p. 145)** Key prefixes and suffixes to teach: ・ Prefixes: found at the beginning of words 　・ Top prefixes attached to nouns, used in 97% of words in printed English at school: un-, re-, dis-, and forms of not: im-, in-, il-, ir 　・ Most commonly used to form new verbs: un-, re-, dis-, over, mis-, out- ・ Suffixes: found at the end of words 　・ Top four suffixes attached to nouns, used in 97% of words printed in English at school: -s, -es, -ed, -ing, -ly 　・ Most common suffixes for verbs: -ise is most common affix in academic English **Implementing**: ・ Explicitly define and teach concept of a prefix focusing on 3 features: group of letters that go in front of a word; it changes the meaning; when you take it away a word is left. Give examples. ・ In next lesson, focus on the negative meanings of un- and dis-, which mean "not". Example: obey (disobey). ・ Introduce two to four more prefixes that mean "not": in-, im-, ir-and non- (may need to be done in 2 lessons). Show how these prefixes change the meaning of a known word. ・ Introduce two different meanings of the prefix re- (back and again). ・ Revisit other meanings of un- and dis- (do the opposite) as well as in- and im- (in or into). ・ Introduce the following useful prefixes: en-, em-, over-, and mis-. ・ Use the same approach for suffixes after prefixes are mastered. ・ Practice by breaking down words selected by linking to the student's area of interest and student give examples for the meaning of each word. ・ Use objects of high interests, for example Cars as manipulatives. Put sticky notes on different cars representing parts of words: Auto-　mobile	Island, E. (2011), Chapter 5, Word Elements, p. 145. Resource Examples: ・ Appendix H: Lists of Affixes and Roots, pp. 263-266. Carnahan & Williamson (2010); Chapter 11, Vocabulary, p 341 (Table 11.4: Suggested Roots to Teach According to Grade Level)

Difficulty understanding vocabulary nuances (e.g. homographs (words spelled the same with more than one meaning) or homophones (words pronounced the same but with different meanings). (continued)	**Homographs (p. 152) and Homophones**	Resource examples (Island):

| | **Homographs (p. 152) and Homophones**
Homographs words are spelled the same with different meanings
・ Pronunciation depends on context in which the word is used and the meaning appropriate to that context.
・ Homographs to teach meet the following criteria: spelled the same; pronounced different, AND have two different meanings: address, bow, close, combine, conduct, conflict, contest, convert, desert, does, dove, excuse, house, lead, live, minute, number, object, perfect, permit, present, process, produce, project, read, rebel, record, resume, separate, sewer, sow, tear, use, wind, wound.

Homophones are words that sound the same but are spelled differently and have different meanings.
・ Examples of common homophones: hair-hare; bear-bare; ate-eight; site-sight; mane-main; son-sun; suite-sweet; there-their-they're; hear-here; are-our; buy-by; weather-whether; to-two-too; your-you're; one-won; brake-break; aloud-allowed; it's-its; principal-principle
・ Target two-three

・ Use a worksheet for selecting homophones
・ Reduce the number of choices if student is having difficulty with homophones
・ Add new homophones as practiced ones are learned | Resource examples (Island):
・ Appendix G: Eight step lesson plan for teaching homographs and a homograph worksheet, pp. 257-260.

Resource examples (Island):
・ Free printable homophone worksheets and materials at: K-12 Reader.
・ Make free on-line flash cards at sites such as Quizlet, Study Stack, Scholastic Free Flash Card Maker. |

Difficulty understanding pronouns used to represent previously identified persons, objects, or groups.	**Anaphoric Cuing**
	Reader stops to clarify the meaning of pronouns and understand to whom or what the pronoun refers.
	
	Make connections to:
	• Subject pronouns (e.g. he, she, they)
	• Possessive pronouns (e.g. his, her, their)
	• Object pronouns (e.g. him, it, them)
	• Person or thing the pronoun represents
	
	Strategy:
	• Use a visual cue to prompt students to "make a match" between the pronoun and person or thing it refers to.
	• May help students to clarify certain words and gain meaning from sentences or paragraphs; become more aware of self-monitoring for understanding; question the text; ability to answer "wh" questions; understanding and use of pronouns in spoken language.
	• Use Resource Example (Appendix G) to teach anaphoric cuing. Can be adapted to possessive and object pronouns.
	    • Before teaching, review pronouns to be covered.
	    • Make copies of worksheets (included in Appendix or make your own)
	    • Prepare several paragraphs from curricular material or grade-level reading passages for guided practice of the skill.
	    • Call this strategy something other than anaphoric cuing—it is not user friendly.
		Iland, E. (2011); Chapter 4: Evidence Based Practices for Improving Reading Comprehension in Learners with ASD, pp. 111-112.
		
		Resource examples:
		• Iland (2011), Appendix G, Who? Whose? Whom? Anaphoric Cuing Activity for Personal or Subject Pronouns, pp. 250-252.

| Difficulty understanding pronouns used to represent previously identified persons, objects, or groups. (continued) | **Example of using pronouns: he, she, they, it** | |

Useful Resources from Referenced Strategies

- [Ed Helper](#) free, reproducible graphic organizers on sequencing. Material also for primer paragraphs or passages for multiple, thematic exposure. Also lists key vocabulary for passages and reading level of the material.
- [Education Oasis](#) for 58 free text to self and text to word connections.
- [Florida Center for Reading Research, Comprehension Curriculum](#) free 34-page file provides lesson plans and ready to use graphic organizers.
- [Kahoot!](#) free online vocabulary, quiz, and game generator K-12.
- [Quizlet](#): free online vocabulary generator (4th grade and up) [Quizlet](#) for upper elementary and older students.
- [PBS Kids](#): free for early Elementary vocabulary games and practice.
- Reading Rockets free [Think Aloud Checklist](#)
- [START Individual Data Collection Forms](#)
- [START Literacy and Students with ASD](#)
- Teach Me Language Companion Exercise Forms
- [Vocabulary.com](#): for later elementary students.

Resources

The text book resources below were used throughout the recommendations and contain best practice literacy supports and interventions for students with ASD. This is not an all-inclusive list of all resources available, but were cited for the user and ease of readily finding information in a limited number of resource options.

- Carnahan, C. & Williamson, P. (2010). *Quality Literacy Instruction for Students with Autism Spectrum Disorders.* Shawnee Mission KS: Autism Asperger Publishing Company.
- Ezell, H. & Justice, L. (2005). *Shared Storybook Reading: Building Young Children's Language and Emergent Literacy Skills,* Baltimore, MD: Paul H. Brooks Publishing Company.
- Freeman, S. & Dake, L. (1997). *Teach Me Language.* Langley, BC Canada: SKF Books.
- Freeman, S. & Dale, L. (1997) *Teach Me Language: The Companion Exercise Forms*. Langley, BC Canada: SKF Books.
- Harvey, S. & Goudvis, A. (2007). *Strategies that Work: Teaching Comprehension for Understanding and Engagement, 2nd Edition,* Markham, ON Canada: Pembroke Publishers, Limited.
- Iland, E. (2011). *Drawing a Blank: Improving Comprehension for Readers on the Autism Spectrum.* Shawnee Mission, KS: AAPC Publishing. Appendix G: Materials for Teaching (lessons, worksheets, etc.).
- Indiana Resource Center for Autism (IRCA). [Literacy Resources for Children on the Autism Spectrum](#).
- Kluth, P. & Chandler-Olcott, K. (2008*). A Land We Can Share: Teaching Literacy to Students with Autism*. Baltimore, MD: Paul H. Brooks Publishing.
- US Department of Education, Office of Special Education Programs, Steps to Literacy, *All Children Can Read, NCDB* (a grant through the Office of Special Education Programs, US Department of Education)