

# Strategies for Developing Listening & Language Comprehension with Students using AAC Devices

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**Listening Comprehension** is the ability to understand and recall information that is presented orally. Being able to recall and understand information is an important pre-reading skill. To understand what someone says, the listener has to (1) retain chunks of language in short-term memory; (2) comprehend the vocabulary used; detect key words, such as those identifying topics and ideas; and derive meaning from the context.

Children who have strong listening comprehension skills also tend to be good listeners overall, a skill that a child will use throughout his/her entire life. Finally, strong listening comprehension skills also promote thinking and problem-solving skills.

Any student with listening or language comprehension challenges needs supports to be able to listen and learn in the classroom. The student who uses AAC (SWUAAC) who also has listening/language comprehension challenges brings unique factors into the mix (e.g., use of the AAC device, device operational demands, etc.). This student needs to work on the same components of listening comprehension as speaking students.

Supporting listening/language comprehension starts with understanding the factors that a SWUAAC presents which may influence his/her listening comprehension.

## **Influencing Factors:**

1. **Hearing Acuity, Perception, & Memory:** Has hearing been checked? What kind of noise levels can the student tolerate without becoming overly stimulated or distracted? Are there any concerns about auditory processing problems? What about auditory attention and auditory short-term memory?
2. **Medical, Health, and/or Neurological Factors:** Are there any pertinent medical issues, such as medications, which might affect auditory attention or perception? Is lack of attention due to health issues, physical discomfort, fatigue or de-hydration? Are there any neurological or processing issues which influence listening?
3. **Environment Factors:** What other noises or distractions are occurring in the environment (e.g., air conditioner running)? What distance is the student from the teacher? Is the AAC device blocking his/her view?
4. **AAC System Variables:** Does the student have to listen to his/her AAC system (beeps, auditory scanning) or other AAC "assists" (e.g., partner assisted scanning, aided language stimulation) while trying to attend to a speaker or material presented auditorily? Is lack of attention or response due to mental fatigue because of an overload of working memory (i.e., trying to listen/answer while trying to remember and find words in the AAC device)? Does the student know his/her AAC vocabulary well enough to be able to answer questions?

## **Functional Listening Comprehension Profile:**

1. Can the student follow one and/or multiple-step directions? Is the student able to follow directions presented orally without visual cues? Can he/she perform hand or body

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- movements as in songs and games, such as “Simon Says” or “Hokey Pokey?”
2. What does the student listen to for pleasure, enjoyment, and sociability? How long can he/she listen? What does he/she retain from the listening activities?
  3. How does the student attend during instructional versus non-instructional times? How does complexity of the listening task influence attention?
  4. Does the student remember information given verbally from day-to-day? Is attention and short-term/long-term memory “selective” based on preferences or restricted interests?
  5. Can the student listen and take notes or create an outline of what he/she heard?
  6. How well does the student engage in listening and problem solving games, such as word games or “Twenty Questions?”
  7. How well does the student demonstrate understanding of academic content and/or novel information presented orally? How often does information have to be repeated? Do instructions need to be simplified? Does the student attend to the relevant information or become distracted by the irrelevant?
  8. Can the student answer questions when given a visual cue, choices, word banks, or some other scaffold for content (e.g., fewer sentences in the passages, simplified paraphrase of passage, printed words of key content, pictures of key content words)?
  9. Does the student demonstrate that he/she understands age appropriate vocabulary?
  10. How does the student interact and negotiate meaning through questioning/answering routines? Does he/she ask for information to be repeated, paraphrased, verified, clarified, or elaborated?

## General Listening Comprehension Strategies

Listening strategies are techniques or activities that contribute directly to the comprehension and recall of listening input. Listening strategies can be classified by how the listener processes the information.

Top-down strategies are listener-based; the listener taps into the background knowledge of (1) the topic, the situation, or context; (2) the type of text; and (3) the language. This background knowledge activates a set of expectations that help the listener to interpret what is heard and anticipate what will come next. Top-down strategies include: (1) listening for the main idea, (2) predicting, (3) drawing inferences, and (4) summarizing.

Bottom-up strategies are text-based; the listener relies on the language in the passage, that is, the combination of sounds, words, and grammar that creates meaning. Bottom-up strategies include (1) listening for specific details, (2) recognizing new vocabulary, and (3) recognizing word-order patterns and narrative details (e.g., “therefore,” “first off,” etc.).

## Listening Activities

1. *Listen for Enjoyment, Pleasure, and Sociability:*
  - a. Listen to songs, stories, plays, movies, poems, jokes, riddles, etc.

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- b. Listen to books on tape/CD.
- c. Listen to conversations of family, friends, and teachers.
2. *Listen and Perform Actions and Operations:*
  - a. Listen for directions to draw a picture or design.
  - b. Listen for directions of how to follow a route or movement in space.
  - c. Perform hand or body movements in songs and games.
  - d. Follow directions to operate something (e.g., iPad, pencil sharpener, kitchen appliance).
  - e. Carry out steps in a process, such as a science experiment, cooking sequence, etc.
3. *Listen and Transfer Information:*
  - a. Take a message, either verbally or over the phone.
  - b. Listen to and fill in the blanks in a gapped story game.
  - c. Listen to complete a form or chart.
  - d. Listen to the “how to” talk to make an outline of the steps in a sequence.
  - e. Listen to a talk and take notes.
4. *Listen and Solve Problems:*
  - a. Play word games in which the answers must be derived from verbal clues (e.g., password).
  - b. Do number or math problems orally.
  - c. Play “Twenty Questions” to identify something.
5. *Listen for Information & Meaning:*
  - a. Listen to passages of information to answer questions, summarize, apply, etc.
  - b. Organize unordered information into a chronological order.
  - c. Listen for cause-effect relationships.
  - d. Evaluate the information heard.

### **Teacher/Therapist Tips for Selecting Listening Comprehension Passages, Accommodating for the Vocabulary in the AAC System, and Mediating Active Listening and Interaction**

1. Initially use “live” passages rather than recorded passages so that you can use your voice and gestures to emphasize important parts of the passage.
2. Initially select or develop passages about events, activities, objects, etc. that are familiar to the student or match his/her interests. Reduce the “familiarity” and/or “interest level” of the topic as the student improves in his/her listening/language comprehension.
3. Select or develop passages that are slightly longer than the student can currently listen to and recall information, as measured by either number of sentences in the passage or length of time in the reading of the passage. Gradually increase the length of the passage. Investigate resources, such as Podcasts of original stories that are short (1 – 3 minutes) and interesting to children.
4. When selecting passages for students who use AAC, evaluate and select passages in terms

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of their complexity of vocabulary. Initially, use passages with simple, familiar core words and a limited amount of new, extended vocabulary. This not only makes listening/language comprehension easier, but also increases the chances that the pre-literate student will have the necessary pre-stored words in his/her device to answer any listening comprehension questions. The following examples are of simple, familiar core words.

- a. Generic people (girl, man, teacher) rather than specific people (Tom Sawyer, Goldilocks) for “who” questions.
  - b. Prepositions (on floor, under it) rather than places (Chicago, Alaska) for “where” answers.
  - c. Simple verbs for “what happened” or “what doing” questions.
  - d. Everyday nouns for “what” questions (e.g., book, drink, car, cat).
  - e. Generic time concepts for “when” questions (after school, all day, at night, before getting up).
  - f. Generic concepts for “why” questions, such as adjectives/adverbs (happy, sad, afraid, away) or negation (didn’t want it, not ready).
5. Create questions, in advance, to ask about the passages. List the core and extended vocabulary words needed to answer the questions.

Generally, three types of listening comprehension questions are asked of students: Fact Questions, Problem Solving Questions, and Creative Thinking Questions. Fact Questions can usually be answered by 2 year olds and have a right/wrong answer. Problem Solving Questions can generally be answered by 4 year olds and might have a right/wrong answer. Creative Thinking questions generally do not have a right/wrong answer and are answerable by 4 and 5 year olds.

Fact questions are considered to be the easiest questions for speaking children to answer. However, they are often the most *non-AAC friendly* type of question to answer for non-literate or pre-literate SWUAAC because the words (usually extended vocabulary nouns) needed to answer these questions are usually not pre-stored in their devices. The student might know the answer, but he/she cannot use his/her AAC device to provide the answer. It is appropriate to ask SWUAAC Fact Questions, but use Fact Questions he/she can answer with vocabulary the student has in his/her device and knows how to say it. Avoid programming and/or teaching new vocabulary codes on top of doing the listening comprehension activity. If doing a group listening comprehension activity, ask the SWUAAC the Fact Questions that are answerable using his/her AAC system, reserving the other unanswerable, non-AAC friendly Fact Questions for the speaking students.

## Example Questions - Goldilocks and the Three Bears

<b>FACT QUESTIONS</b>	<i>Answer: Are the words in the student’s AAC device? (V = yes) Does he/she know how to say them? (VV = yes)</i>	<i>If no, will I use this question with the SWUAAC? (V = yes) Note how you will revise the question.</i>
<i>Who lived in the house?</i>	<i>3 bears</i>	
<i>What did Goldilocks do?</i>	<i>go in the house</i>	
<i>What was wrong with the porridge?</i>	<i>too hot, too cold</i>	

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<i>What was wrong with the chair?</i>	<i>too big, too little</i>	
<i>What was wrong with the bed?</i>	<i>too hard, too soft</i>	
<b>PROBLEM SOLVING QUESTIONS</b>	<i>Answer: Are the words in the student's AAC device? (V = yes) Does he/she know how to say them? (VV = yes)</i>	<i>If no, will I use this question with the SWUAAC? (V = yes) Note how you will revise the question.</i>
<i>What did Goldilocks do that she shouldn't have done?</i>	<i>Go in house when no one home. Eat their food. Break chair. Sleep in bed.</i>	
<b>CREATIVE THINKING QUESTIONS</b>	<i>Answer: Are the words in the student's AAC device? (V = yes) Does he/she know how to say them? (VV = yes)</i>	<i>If no, will I use this question with the SWUAAC? (V = yes) Note how you will revise the question.</i>
<i>What would you have done if you were Goldilocks?</i>		
<i>What do you think would have happened if the bears had been home?</i>		
<i>What do you think would have happened if Goldilocks hadn't run away?</i>		

6. Many SWUAAC become highly dependent on their teacher/assistant to repeat information over and over. To promote ***independence***, utilize the strategy of ***Active Re-Listening***, which is the process of listening to a passage again (and as much as needed) to comprehend and recall the information, doing it as independently as possible. For simplicity, use a tool that allows for a digital recording that can be accessed independently by the SWUAAC. Frequently used tools include a BIGmack™ (single message tool); Step-by-Step™ (sequential message tool); or ChatBox40™, GoTalk™, or Smart/Talk™ (multiple cells with single messages tool). Select the tool that the student can access.

Record the passage into a single message or sequential message tool when the passage is short (2 to 7 sentences). For longer passages (1 or 2 minutes), use a multiple cell tool (4 – 8 – 40 cells) and record “chunks” of the passage (introduction, middle 1, middle 2, middle 3, ending) into the tool. Create an overlay for multiple the cell tool(s) used that is generic for any passage, using pictures that represent the story in a linear order. You can also make an overlay that represents the information that is recorded specific to that story as a form of a visual scaffold. See the section below on Visual Supports.

Recorded passages for active re-listening is a form of auditory note-taking that is used by many students, especially as they enter middle or high school where the SWUAAC might be exposed to up to 14 hours of teacher lectures per week.

7. While listening, it is appropriate for the SWUAAC to interact about what he/she is hearing. Learning to mediate listening and learning is a skill that is encouraged when working with a teacher on other subjects and is a means for the SWUAAC to mediate learning through listening. The following are suggested statements and questions to pre-program into the student's AAC device.
- a. Repetition:
    - i. Would you repeat that please?
    - ii. Could you repeat the part about?

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- b. Paraphrase:
  - i. Please say that another way.
  - ii. I don't understand what you mean by ...
- c. Verification:
  - i. Did I understand you to say that...?
- d. Clarification:
  - i. Could you tell me what you mean by that?
  - ii. Please give me an example.
- e. Elaboration:
  - i. What about ...?
  - ii. How is that related to ...?
  - iii. Would you show it to me?

## Visual Supports to Scaffold Improved Listening Comprehension:

Students with significant auditory processing challenges often need visual supports as they work on improving their listening comprehension. Visual supports as used BEFORE, DURING, and AFTER the listening comprehension activity.

The following strategies are useful visual scaffolding techniques when the passage is short (3 – 10 sentences). The use of text supports should be used cautiously and reduced as the student's listening comprehension improves.

1. BEFORE/DURING: To enhance "familiarity" when listening to a passage, include a visual support, such as a picture. Use only as many pictures as necessary. Eliminate the use of the picture(s) as soon as possible.
2. DURING: Provide an "alerting" visual signal when a relevant key word or concept is read/said. Alert the student that the information he/she is listening to is important and relevant, but don't overly distract the student while he/she is listening.
  - a. When reading or orally presenting the information, raise YOUR finger or use the visual alert to flag to the student that the information he/she is hearing is important.
  - b. Point at or pick up a blank color-coded card when key words are read/said.
  - c. Place a color-coded card on the table, with printed word (with icon sequence or navigational path as necessary) when a key word is read/said.
3. DURING/AFTER: Create a sentence strip for each individual sentence in the passage (2 – 10). Lay each individual sentence down on the table as you read the passage, listen to a passage, or present directions. When working on re-telling of the passage, the student can re-order the sentences in the order of the listening comprehension passage, etc.
4. DURING/AFTER: Laminate color notecards. Coordinate the colors with the color code used in the AAC device (e.g., who/people = yellow, what/thing = orange, what/action = green, where/preposition or place = purple, how/adjective = dark blue, how/when/adverb = light blue, why/reason = pink). Use the cards for visual alerts (about important who/what/when/where/why information) and when doing Fact Question activities. The cards provide a color code cue for the type of word needed to answer the Fact Question.

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5. DURING/AFTER: Using the color notecards (see #4), write (with dry-erase pen) the key core and extended vocabulary words of the passage on the appropriate color-coded cards. Lay the cards out in front of the student and highlight them (point it, shine light on) as the information/words are presented in the passage. The cards can be used to answer Fact Questions.
6. DURING/AFTER: Write out the passage as a traditional paragraph. Use color markers to highlight important words as you listen to the passage. Use highlighting based on the color code in the AAC device for that part of speech. Use the highlighted passage as a visual scaffold when asking Fact Questions.
7. AFTER: Provide Word Banks for Fact Questions you plan to ask. Use mixed group word banks (the possible choices are words from a variety of word groups or types of /wh/ questions) and same group word banks. If necessary, this strategy can be used to create multiple-choice questions if the key words are not in the students AAC device and the SWUAAC must answer the question.

## **A Listening Activity Routine to Develop Skills for Listening for Information to Participate in Classroom Learning**

### **Before Listening:**

#### Step 1: Require Listening Readiness

- Eyes on speaker (as physically able or culturally appropriate)
- No talking (or using your device, switch, etc.)
- Quiet hands, feet, and body (as physically able)

#### Step 2: Build or Activate Background Knowledge and Meaningfulness (Passage Preview)

- Select passages that reflect a topic that is familiar to the SWUAAC. Show a picture(s), if necessary, to create meaning.
- Talk generally about what will happen in the passage to strengthen meaning. If necessary, strengthen meaning with re-enactment of what is seen in the picture or will happen in the passage.
- For books, stories or passages that feature pictures, preview it to activate background information and begin to build meaning. Questions listed are taken from or based on ideas from “Before Guided Reading Spinners” Grades K-3, by Creating Teaching Press®
  - Let’s Take a Look
    1. What is the title?
    2. Who is the author?
    3. How do you think this story will relate to your life?
    4. Can you predict what will happen in the story?

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- Book Preview
  1. Who do you think are the main characters?
  2. What type of book (passage) it is likely to be?
  3. What do you already know about his topic?
  4. What do you think this book/story/passage will be about?
  5. What does the cover picture tell you?
  6. What do you expect to find out?
- Identify, list and define key words in the passage.
- Confirm availability of key words in the student's AAC system, especially for Fact Questions (see chart above).
- Confirm knowledge of codes/navigational paths to the key words by having the student say the word(s).
  - If the student does not know how to say the word with his/her AAC system, replace the word with an appropriate one that he/she does know.

### Step 3: Set a Purpose for Listening

- Tell the student what you want him/her to listen for, scaffolding the intensity of the purpose.
  - A single, specific purpose
    1. Top-down listening
      - Listen for the most important idea (main idea).
      - Listen so you can tell me what you remember (summarize).
      - Listen so you can guess what will happen next (predict).
    2. Bottom-up listening
      - Listen for "who" the people are in the story (or the main characters).
      - Listen for "what" the people did in the story (or the events/main ideas of the story).
      - Listen for "where" the people are (or the setting of the story).
      - Listen for "why" the people did what they did (or the problems/conflicts/action).
  - Several specific purposes (e.g., After I read, I will ask you "who," "what," "when," "where," and "why" questions.)
  - A broad, non-specific purpose (e.g., You are going to answer 5 questions about this passage.)
- Example purposes are taken from "Reading Comprehension Spinners" Grades K-3, by Creating Teaching Press®
  - Story Elements
    1. Where does the story take place?



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2. Who are the main characters?
  3. What is the main idea of the story?
  4. How did the story end?
- Provide a visual scaffold to remind the SWUAAC about the purpose (e.g., color coded cards).
  - Create a cue for him/her to let you know when he hears the answer for the purpose (e.g., uses voices, lifts hand, looks at one of the color cards).

### **During Listening:**

Step 1: Ensure that the SWUAAC maintains his/her Listening Readiness.

Step 2: Present the passage (e.g., read the passage, listen to the recorded passage, state the directions, etc.). Emphasize, with your voice, key words in the passage/directions, as you read/recite it. If a providing directions or instructions, ask the student to repeat or rephrase what he/she just heard.

One of the most effective strategies to build listening comprehension is to **stop and ask** questions as the student listens to the passage. Stop after the student has listened to an amount of auditory information that only slightly exceeds his/her current level of listening comprehension. If you are reading from a printed passage, it is helpful to insert markers into the text to document where you will break in the passage. This strategy of marking up the text is a good way to measure student improvement in length of listening comprehension passages.

### **After Listening:**

Step 1: Ask the SWUAAC to “summarize” what he/she heard by telling you what he/she remembers. This helps you identify what was most salient to the student, and hopefully, the student summarizes with the words that reflect the purpose(s) for which you wanted him/her to listen. Note the type of vocabulary used, sentence structure (syntax) and morphology used.

Step 2: Give the student the option of listening to the passage 1 more time or answering the questions.

- Have the SWUAAC communicate to you whether he/she is “ready” to answer or he/she needs to listen “again.” Putting responsibility upon the shoulders of the SWUAAC helps him/her learn strategies for mediating learning and becoming a more independent learner (see Step 3 below).
  - Model the words “ready” and “again” with the student’s AAC device. Say, “you can listen **again** or maybe you are **ready** to answer. Tell me.”
  - Wait between 5 – 10 seconds, (a strategy called Expectant Delay) and if the student does not request a repetition or say he/she is ready, prompt him/her to tell you either “again” or “ready.”

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- If the student asks for repetition, allow only 1 repetition of the full passage.
- If the student is ready, ask the purpose questions.

### Step 3: Ask/Answer Purpose Questions

- Ask your purpose questions, using scaffolding strategies as necessary. Examples below include use of color-coded word-group cards, same word-group banks, and mixed word-group banks.
  - Q: Who is the story about? (verbal prompts)
    - Prompt: You need to give me a person word. It is a yellow word and is probably a pronoun.
    - Prompt: It is one of these 3 words: girl, man, dad.
    - Prompt: It is one of these 3 words: eating, girl, lunch.
  - Q: Who is the story about? (visual prompts)
    - Prompt: Look at the picture and tell me about the person you see.
    - Prompt: Look at the cards. The yellow “who” card has the code for the answer.
    - Prompt: The answer is the yellow highlighted word.
    - Prompt: Look at the 4 cards (a word bank of possible answers) with the words and find the word that tells me who is the story about.
    - Prompt: Look at the sentence strips. The answer is in #1.
    - Prompt: Look at the paragraph of the highlighted words.
- Don't forget to ask Problem Solving or Creative Thinking Questions about the passage. These questions require the SWUAAC to make predictions, draw inferences, adapt the story, or apply the story to his/her life.
  - What kind of (thing) do you think, where do you think, who do you think? (prediction)
  - Why do you think the author ended the story that way? (inference)
  - What part of the story would you change? Explain why. (adaptation)
  - Give the story a title (or new title). Why that title? (adaptation)
  - How do you think you would feel if that happened to you? (application)
  - Tell about a similar incident that happened to you. (application)

### Step 4: Complete supplemental comprehension activities regarding the passage or directions.

- Story Visualization – Have the student make a drawing about the passage, if physically able or has access to technology to allow him/her to draw.
- Sentence Identification – Assist the SWUAAC to cut apart the passage/directions/story into sentence strips so the student experiences the *start/end of each sentence*.
- Retelling/Sequencing - Ask the student to order the sentences/direction steps using the

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individuals sentence strips.

## **Assessing Progress:**

1. Track the length of the passage by the number of sentences in the passage and/or time in minutes/seconds.
2. Track the complexity of vocabulary used in the passages by number of sophisticated words per total number of words in the passage. This is often a less objective form of measurement, but it useful over time.
3. Tally the number of repetitions (both oral and active re-listening with the recording passage/directions) necessary to appropriately answer questions or follow directions.
4. Track the number and type of questions correctly answered following an appropriately leveled passage.
5. Track the types of visual scaffolds needed for the SWUAAC to be successful.
6. Track the number of salient details recalled and the type of language used (1 word utterances, simple 2 and 3 word utterances, topic-comment, simple sentence word) when asked to summarize a passage.
7. Track ability to answer more advanced questions about story predictions, inferences, adaptations, and applications. The ability to answer these types of questions is a good predictor of improvements in academic performance.