

**Three-Term Contingency**

*What is the three-term contingency?*

“The basic unit of analysis in the analysis of operant behavior; encompasses the temporal and possibly dependent relations among an antecedent stimulus, behavior, and consequence,” Cooper (2007).



**Environmental Engineering**

*What is environmental engineering?*

Environmental engineering is a concept developed by Goossens, elders, and Crain that refers to planning the arrangement of a setting for use of augmentative and alternative communication. This includes communication opportunities, identification of vocabulary and functions, development of overlays, teaching strategy and communication partner training, monitoring of implementation.



**Incidental Teaching**

*What is incidental teaching?*

“A procedure whereby new behaviors are taught within the context of natural environments, during the course of typical events, at times the behaviors naturally occur,”

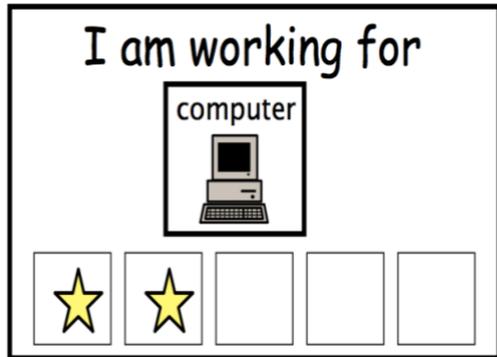
Charlop-Christy (2008).



**Behavior Management**

Some students may require visual supports to keep them on task and help them transition. Visual supports, including token boards, visual schedules, and first-first then boards can be used to help students maintain attention to task and support their transitions throughout the day.

### Token Boards



- Token boards are a visual reinforcement system. They provide the student with information about what they will be earning for a reinforcer, as well as what is expected prior to earning their reinforcer.
- Use token boards when students are engaging in non-preferred activities to reduce the likelihood of challenging behaviors.
- Use the token board to redirect the student to task by reminding them how many more tokens are needed to earn computer time.

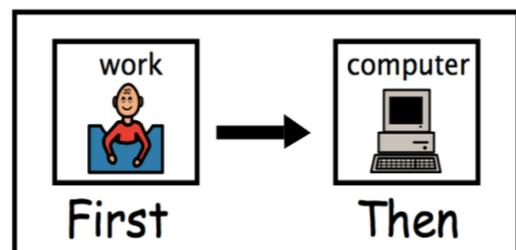
### Token Board Adaptations

- Vary the number of tokens required based on the student and the skill. When teaching a new skill, it may be necessary to provide 1:1 reinforcement (e.g. a token every time the student completes a step). However, some students will be able to tolerate a longer period of time and participate in more tasks prior to receiving a token.
- Modify the token system as necessary to ensure it is meaningful for the student. Some students may need Velcro or tangible icons, while others will understand use of dry erase markers on a board.
- Be creative! Use token boards that are specific to the student's interests or use tangible items (e.g. putting coins in a jar).

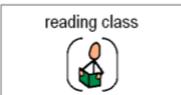


### First-Then Boards and Visual Schedules

- Visual schedules and first then boards tell the student what activities will occur next, what sequence they will occur in, and what is expected of the student prior to transitioning/earning a reward.
- First-then visuals and schedules may vary depending on the student, however, they often are a series of Velcro icons that are placed in a given order.



### First-Then Boards and Visual Schedules Continued...

<p style="text-align: center;"> Billy's Schedule</p> <p>Today    I    will</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p> Green notebook in basket</p> <p> circle time</p> <p> reading class</p> <p> work at desk</p> </div> <div style="width: 45%; text-align: center;"> <p> All Done</p> <div style="border: 1px solid black; height: 40px; width: 100%; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 40px; width: 100%; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 40px; width: 100%; margin-bottom: 5px;"></div> <div style="border: 1px solid black; height: 40px; width: 100%;"></div> </div> </div>	<p>Some visual schedules have a “completed” section, where students can move icons to visualize what has already been completed.</p> <p>Ideally, visual supports and icons should be specific to the child. For example, Prentke Romich users may benefit from Unity icons, while Proloquo2Go users are more familiar with SymbolStix. Using icons that are consistent with the individual’s device will support comprehension.</p> <p>Visual schedules assist in:</p> <ul style="list-style-type: none"> <li>• Helping children understand what is next</li> <li>• Sequential memory and organization of time</li> <li>• Reducing anxiety an possible challenging behaviors</li> <li>• Promoting independent transitions</li> </ul>
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Visual schedules can also be used to help students remember the steps of a specific task. For example, this visual can be placed above a sink to promote increased independence while washing your hands.



### Intervention: Creating Visual Supports

Many supports that are used for behavior modification and intervention require access to the icons from the student’s device. PASS by Prentke Romich and SymbolStix are two resources that provide quick and easy access to icons on Prentke Romich (Unity) devices and Proloquo2Go.

### PASS by Prentke Romich

PASS stands for PRC Application and Support Software. PASS is a device emulator (available for all PRC devices), which means it is software that can act like a device (it will have voice for 90 days, after which the software remains on your computer without voice).

### PASS by Prentke Romich Continued...

PASS allows you to:

- learn vocabulary
- learn about how to use/operate a device
- edit/customize a device on the computer and then import the changed into the actual device
- create visual supports and therapy materials
- print manual boards

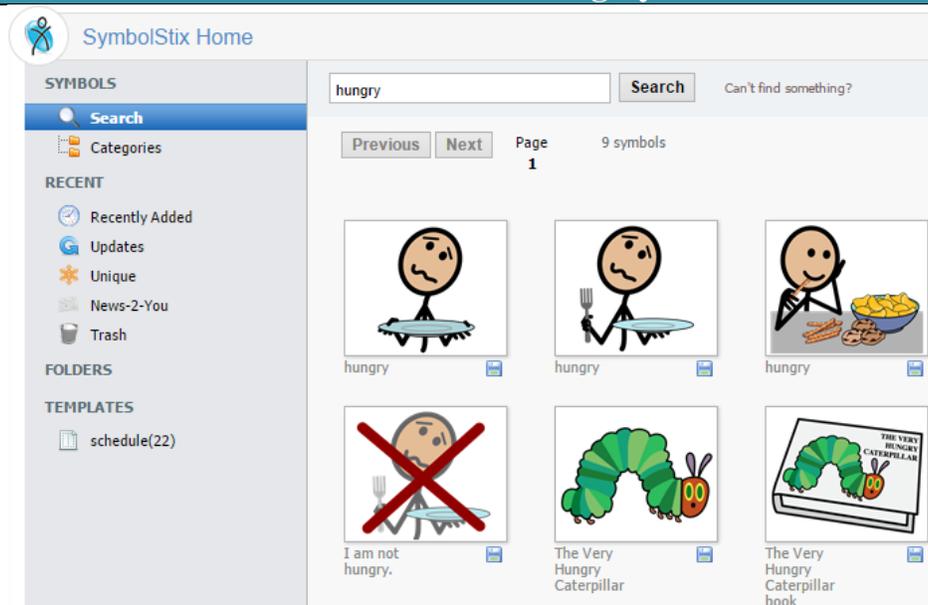


To navigate to this feature, select: “Vocabulary”, “Vocabulary Display Options”, “Write with Icons”, “OK.” You will see an introductory screen which describes the features. Once read you can highlight the text and delete it. Start typing in a word and the corresponding icon sequence will appear. If no icon or sequence appears then it may not be stored in the device. You can type in a different word to get a similar picture and then edit the corresponding text. You can copy the icon sequences and paste them into a Word document. To return to the emulator select: “Vocabulary” then “Return to Emulator” (F2).

### SymbolStix on News2You

SymbolStix is a feature offered by News-2-You. It is an online, web-based symbol search engine that provides access over 25,000 SymbolStix symbols. Using SymbolStix, you can easily search for and export target icons to create visual supports, particularly for individuals utilizing Proloquo2Go.

### Accessing SymbolStix Icons



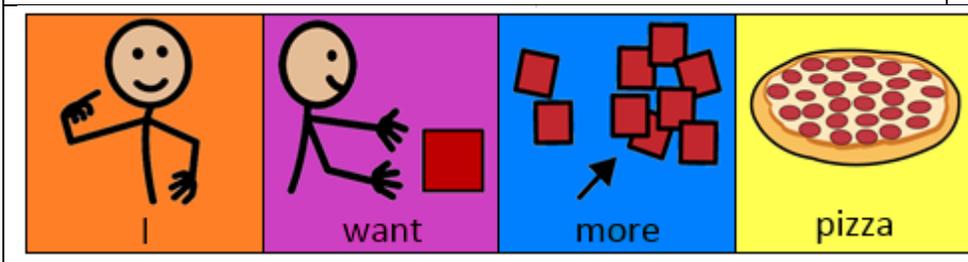
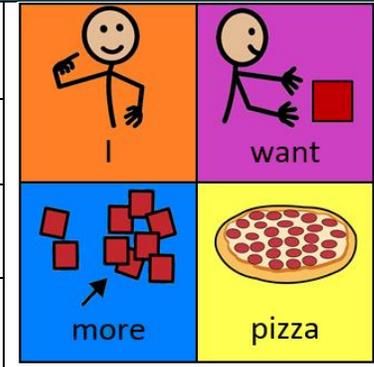
1. Select the “Search” function on the left side of the page
2. Type in the target word (e.g. hungry) and press search
3. Select the icon that best matches your target word
4. Select the floppy disk image to download the icon to your computer
5. You can now save the icon and copy/paste it to create visual supports

### Creating Icons from SymbolStix Images

Now that you have access to the symbols from your student's device, you will want to turn them into icons. Use the "Insert Table" feature on your word processing software to create icons.

### Creating Icons/Visuals:

- Insert a table with the number of icons you would like to create
- Set the height/width of the table (typically 2x2 for visual schedules)
- Select "Fixed Column Width" to ensure the table size is not altered
- Paste the icons into each section of the table



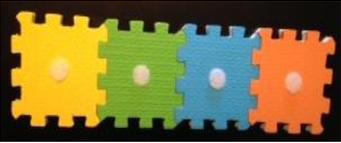
\* When creating sentence visuals, consider creating a table with more columns, with each column representing a word in the sentence.

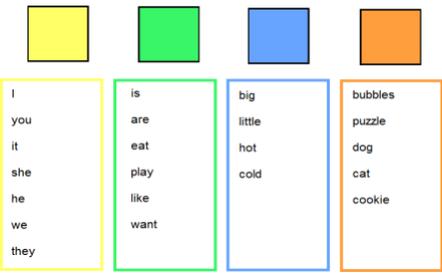
### Formatting

- Add text to match the icon
- Customize icons to match the student's device (e.g. changing the background color)
- The icon background color can be changed when you initially download, but you will need to change the background of the table using the fill feature
- Format the icons (e.g. center the pictures/text, adjust thickness of table as desired, etc.)

### Intervention: Writing

AAC users may use a variety of resources and supports to improve writing skills, including but not limited to visual supports to increase writing complexity/mean length of utterance, connection of their device to a computer to provide accesses to word processing, or use of a scribe. Here are some different ways to support writing and language complexity when working with AAC users.

Rainbow Sentences									
<div style="display: flex; justify-content: space-around; align-items: center; margin-bottom: 10px;"> <div style="width: 40px; height: 40px; background-color: yellow; border: 1px solid black;"></div> <div style="width: 40px; height: 40px; background-color: green; border: 1px solid black;"></div> <div style="width: 40px; height: 40px; background-color: blue; border: 1px solid black;"></div> <div style="width: 40px; height: 40px; background-color: orange; border: 1px solid black;"></div> </div> <ul style="list-style-type: none"> <li>Rainbow sentences are one way to use visuals to support syntax and increase length of utterance</li> <li>Each color represents a part of speech:            yellow – pronoun            green – verb            blue – adjective            orange – noun         </li> </ul> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr style="background-color: yellow;"><td style="padding: 2px;">Yellow</td><td style="padding: 2px;">Preposition</td></tr> <tr style="background-color: green;"><td style="padding: 2px;">Green</td><td style="padding: 2px;">Verb</td></tr> <tr style="background-color: blue;"><td style="padding: 2px;">Blue</td><td style="padding: 2px;">Adjective</td></tr> <tr style="background-color: orange;"><td style="padding: 2px;">Orange</td><td style="padding: 2px;">Noun</td></tr> </table>	Yellow	Preposition	Green	Verb	Blue	Adjective	Orange	Noun	<p><u>Activity Description:</u>            Print out or draw the rainbow sentence. (Use puzzle pieces for a fun adaptation!)</p> <div style="text-align: center; margin: 10px 0;">  </div> <p>To use the visual, the clinician can point to the appropriate color to indicate part of speech, or encourage the student to locate a specific word type based on colors. The visual supports increased MLU by encouraging the individual to locate a word for each square, generating a 4-word sentence containing an adjective (e.g. She likes big dogs, He ate delicious pizza, I wear black pants, etc.)</p>
Yellow	Preposition								
Green	Verb								
Blue	Adjective								
Orange	Noun								

Rainbow Sentence Adaptations:	
<p><u>Graphic Organizer</u></p> <div style="text-align: center; margin: 10px 0;">  </div>	<p><u>Flashcard</u></p> <div style="text-align: center; margin: 10px 0;">  </div> <p>Check out this video of a student using visual flashcards to play Mr. Potato Head.  <a href="http://bit.ly/AACInterventionPotatoHead">→http://bit.ly/AACInterventionPotatoHead</a></p>
<p><b><u>Implementation:</u></b></p> <ul style="list-style-type: none"> <li>Students with vocabulary difficulty may benefit from a graphic organizer with word banks to stimulate different ideas.</li> <li>Create word banks with academic vocabulary. If the student is learning about the planets, provide vocabulary related to planets including names of planets, sizes, shapes, features, etc.</li> </ul>	<p><b><u>Implementation:</u></b></p> <ul style="list-style-type: none"> <li>Create flashcards with icon sequences.</li> <li>Use this visual to fade verbal prompting and encourage students to produce the vocabulary with increased independence.</li> <li>Use flash card sequences when engaging in an activity with a clear expectation and repetitive use of carrier phrases/sentence structures.</li> </ul>

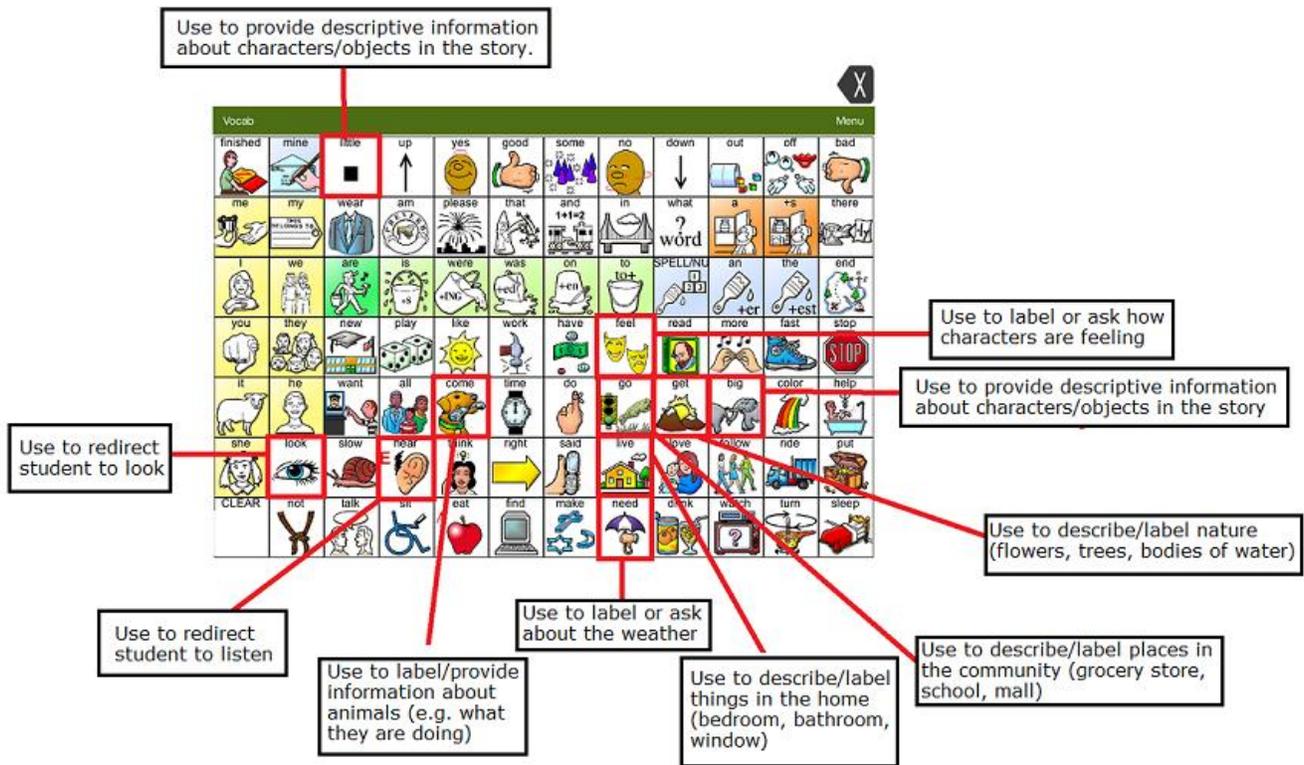
### Intervention: Reading

AAC users may benefit from a variety of modifications to support reading and receptive language. Some examples may include staff modeling target language while reading a story, use of repetitive books, and adapted books.

### Modeling Target Language

During group reading, provide additional visual and verbal input by repeating and recasting information from the story and pairing information with icons on the student's. Instead of generating complete sentences on the device, pair verbal language with salient icons. For example, say to the student, "The weather is stormy", while selecting "stormy" under the umbrella icon.

Here is a photo of the core page on LAMP, with icons highlighted in red depicting the location of vocabulary that may be used during a story:



The image shows a screenshot of the LAMP core page, a grid of icons for AAC. Several icons are highlighted with red boxes, and callout boxes provide instructions on their use:

- Use to provide descriptive information about characters/objects in the story:** Points to the 'like' icon (a black square).
- Use to label or ask how characters are feeling:** Points to the 'feel' icon (a face with a sad expression).
- Use to provide descriptive information about characters/objects in the story:** Points to the 'love' icon (two hands holding a heart).
- Use to describe/label nature (flowers, trees, bodies of water):** Points to the 'rain' icon (a cloud with rain).
- Use to describe/label places in the community (grocery store, school, mall):** Points to the 'shop' icon (a shopping cart).
- Use to describe/label things in the home (bedroom, bathroom, window):** Points to the 'umbrella' icon.
- Use to label or ask about the weather:** Points to the 'umbrella' icon.
- Use to label/redirect student to listen:** Points to the 'ear' icon.
- Use to label/redirect student to look:** Points to the 'look' icon (an eye).
- Use to label/provide information about animals (e.g. what they are doing):** Points to the 'sit' icon (a person sitting).

**Repetitive Books**

Repetitive line books (like Brown Bear, Brown Bear, What Do You See?) are a great way to introduce and work on specific vocabulary and/or language goals. “Practice makes progress”, right? Having multiple opportunities to practice a particular word or phrase empowers an individual using AAC to practice and learn the specific motor sequence necessary to generate that target.

In addition to repetitive lines, books that contains icons sequences for target vocabulary allow the learner to learn how to navigate to new vocabulary using visual supports.

Here are a few pages of a book made to address the phrase starter “I don’t like \_\_\_\_\_” in a fun way!

		
<p>Yuk! I don't like broccoli.</p>	<p>Yuk! I don't like bananas.</p>	<p>Yuk! I don't like peas.</p>
		
<p>Do you?</p>	<p>Do you?</p>	<p>Do you?</p>
		

**Adapted Books**

Adapted books are books that contain icon sequences from the student’s device.

Using icon sequences allow the student to participate in reading the book by actively locating target vocabulary on their device.

Often times, adapted books are simplified to contain less words, allowing the clinician to highlight target vocabulary, while also ensuring the student is comprehending the text.



Check out this video demonstrating how to use an adapted book:

➔ <http://bit.ly/AACInterventionBook>