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## Teaching the Special Needs Learner: When Words Are Not Enough

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# Teaching the Special Needs Learner: When Words Are Not Enough

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**Abstract:** Extension educators and volunteers provide programs to people of all ages and abilities. This includes individuals with developmental disabilities. Individuals with autism and other developmental disabilities often have difficulty communicating verbally but have strong visual learning skills. This article describes the importance of using visual tools in Extension programs and provides models using the software application Boardmaker®. Visual supports increase communication and learning and help to ensure that content matter is accessible to all audiences.

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## Introduction

Extension educators and volunteers provide programs to people of all ages and abilities. This includes individuals with developmental disabilities. Developmental disabilities are a diverse group of severe chronic conditions that are due to mental and/or physical impairments. People with developmental disabilities have problems with major life activities such as language, mobility, learning, self-help, and independent living. Developmental disabilities begin anytime during development up to 22 years of age and usually last throughout a person's lifetime (Centers for Disease Control and Prevention, 2004).

Given that as much as 9.5% of children have one or more developmental disabilities (Table 1), it is important that Extension educators acquire training and skills to ensure that their programs are effective for this population. One way to enhance teaching effectiveness is to capitalize on the strong visual skills that many individuals with developmental disabilities have and to incorporate assistive technology into teaching methods and materials. This article offers suggestions for creating visual supports using the software application Boardmaker® by Mayer-Johnson and discusses how Picture Communication Symbols can be used in a variety of ways in Extension outreach and education.

**Table 1.**

Average Prevalence Rates for Selected Developmental Disabilities in Children

Autism Spectrum Disorders	.4-1.25%*
Attention Deficit Hyperactivity Disorder	9.5% ** (ages 4-17)

Learning Disability	5% (ages 6-17)***
Intellectual Disability	1.2-1.6%****
* <a href="http://www.cdc.gov/ncbddd/autism/data.html">http://www.cdc.gov/ncbddd/autism/data.html</a> ** <a href="http://www.cdc.gov/ncbddd/adhd/data.html">http://www.cdc.gov/ncbddd/adhd/data.html</a> *** <a href="http://www.cdc.gov/nchs/data/series/sr_10/sr10_237.pdf">http://www.cdc.gov/nchs/data/series/sr_10/sr10_237.pdf</a> **** <a href="http://www.cdc.gov/ncbddd/dd/documents/IntellectualDisabilitiesFactSheet.pdf">http://www.cdc.gov/ncbddd/dd/documents/IntellectualDisabilitiesFactSheet.pdf</a>	

## Extension's Background in Developmental Disabilities

Extension has a history of interest and involvement in working with consumers who have disabilities. 4-H at Purdue University undertook a project in the early 1990's "to ensure that all youth have the opportunity to participate in meaningful activities that make it possible for them to grow mentally, physically, and socially regardless of their physical and/or mental capabilities" (Tormoehlen & Field, 1994). North Carolina State University developed Intentionally Inclusive 4-H Club Programs designed to "create accessible 4-H environments and engage communities to address the needs of people with disabilities" (Stumpf, Henderson, Luken, Bialeschki, & Casey, 2002). A study of attitudes of Extension professionals in West Virginia toward involvement of special needs youth in 4-H programs found that, though generally supportive, there is a need to provide professional development to improve

Extension professionals' competency and ability to adapt current 4-H programs and projects for special needs youth (Boone, Boone, Reed, Woloshuk, & Gartin, 2006). Beginning in 1988, Rutgers Master Gardeners of Union County, New Jersey brought horticultural therapy to their community and trained staff and volunteers to teach horticultural skills to people with disabilities (DiNardo, 2007). Since 2003, a youth farmstand project, Seeds to Success, prepares special needs, at-risk youth for the workforce through classroom and on-the-job training through Rutgers Cooperative Extension in Gloucester County, New Jersey (Streiter & Hughes, 2009). One adaptation of an EFNEP curriculum to accommodate blind participants has been used at the University of Idaho (Liddil, 1994).

## Use of Visual Tools to Support Learning

Along with gaining an understanding of the developmental disabilities themselves, educators need effective teaching strategies for this population. Individuals with autism and other developmental disabilities often have difficulty verbally communicating but have strong visual skills. Strong visual learners understand what they see better than what they hear. These strengths can be capitalized on with visual supports such as objects, photographs, and picture symbols that improve understanding and the ability to communicate (University of Florida, Center for Autism and Related Disabilities, n.d.).

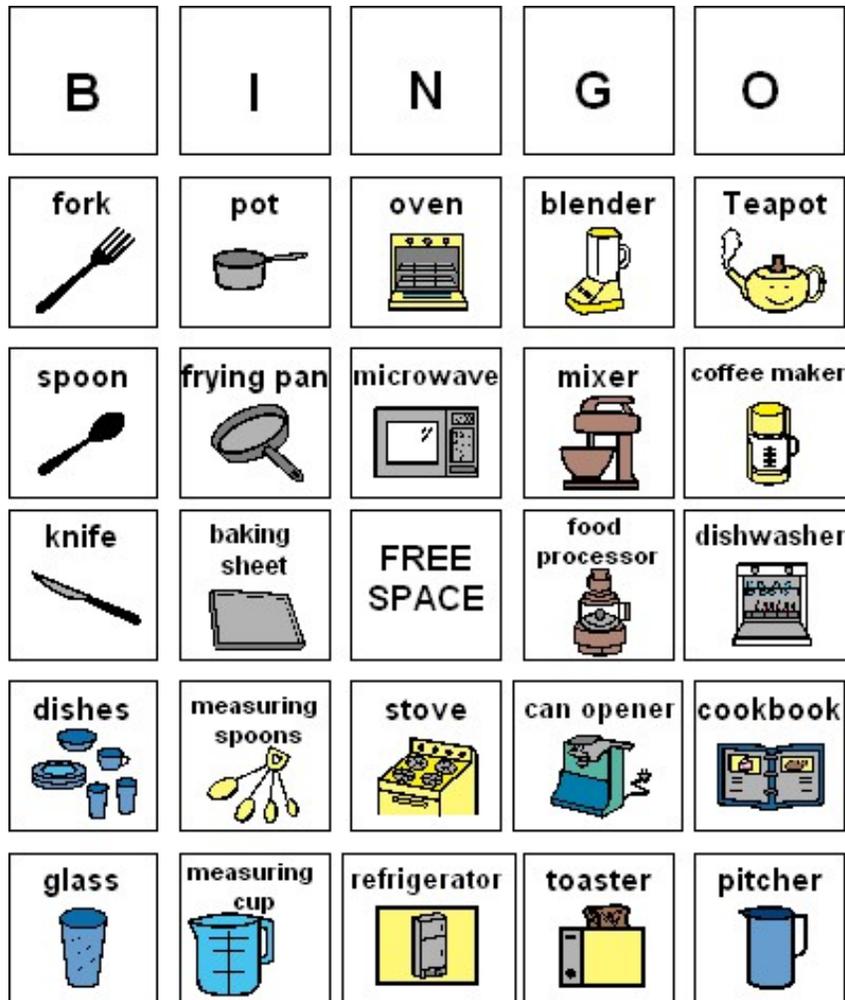
Visual tools assist students in processing language, organizing their thinking, remembering information, and many other skills necessary to participate effectively (Hodgdon, n.d.). One such tool, Boardmaker by Mayer-Johnson, is a graphic database of Picture Communication Symbols (PCS) that can be used to create a variety of printed communication and educational materials (Boardmaker Software Family Handbook Copyright © 1981-2008). Additionally, Boardmaker is commonly used in most augmentative and alternative communication (AAC) devices that people with severe speech or language problems rely on to supplement existing speech or replace speech that is not functional. AAC devices use electronic technology to "speak" as the user types in words or pushes a PCS button. It is important that Extension educators working with people using such devices learn to operate them so that they and the learner can communicate. This may increase social interaction, learning performance, and feelings of self-worth (American

Speech-Language Hearing Association Augmentative and Alternative Communication, n.d.).

## Using Picture Communication Symbols

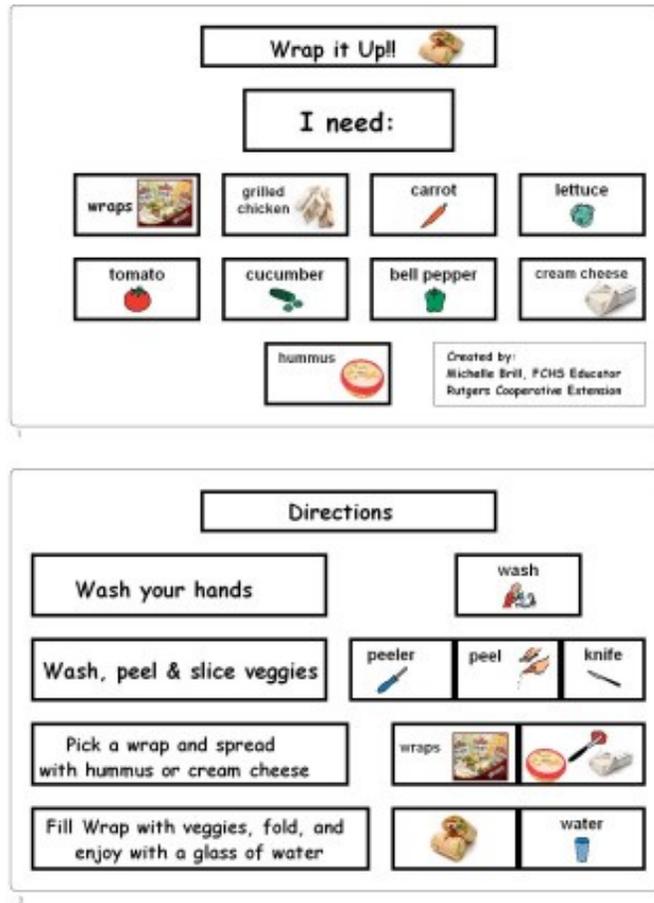
With Boardmaker, Extension educators can create worksheets, games (Figure 1), schedules, recipes (Figure 2), choice boards, directions, evaluations, and many other useful educational tools. The material can use PCS alone, or with text included.

**Figure 1.**  
View of Bingo Board Using Boardmaker



Created by: Michelle Brill, FCHS Educator  
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**Figure 2.**  
Recipe Directions Using Boardmaker



PCS can also be used in a multitude of ways to make the learning environment more "user friendly" and inclusive. Safety rules and directions can be posted for using kitchen appliances, sewing machines, or handling small animals. Cabinets, appliances, shelving, and other objects can be labeled. This will increase the learner's self-sufficiency when asked, for example, to gather ingredients and utensils needed for a FCS or 4-H cooking program. The 4-H pledge could be converted to PCS format for better comprehension and recall at club meetings, and 4-H Club Health Officers could visually display exercise routines. Guidelines for entries into county fairs could be created using PCS so that entrants have a better understanding of what makes a winning project. Because evaluation is such an important component in measuring Extension's impact, educators can design survey instruments with PCS so that learners with special needs can demonstrate learning and provide valuable feedback.

## Conclusion

Extension outreach and education programs reach diverse audiences. It is vitally important that Extension professionals be aware of their audiences' learning styles in order to adapt their teaching strategies and provide educational materials that maximize participation and learning potential. The use of visual supports has been shown to improve communication, behavior, socialization, and independence. Boardmaker offers a

wide range of Picture Communication Symbols for all ages and subjects and helps to ensure that content matter is accessible to all learners. While Boardmaker PCS technology is the gold standard, Extension professionals can make use of less expensive, more commonly available alternatives to reach clients with special needs such as photographs, actual objects, magazine pictures, or Microsoft® Clip Art. These strategies play an important role in ensuring equal access to Extension programs and can open opportunities for Extension to reach new audiences.

Boardmaker is available through Mayer-Johnson at <<http://www.mayer-johnson.com>>.

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