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Introduction

Communication is an essential part of everyday life. Communication encompasses so much that defining it can be difficult, but the heart of communication is the exchange of messages, thoughts, feelings, and information from one person to another. It's a process we observe hundreds of times throughout the day, but it is far more complex than it seems. For an exchange to occur, someone has to express an idea (expressive communication) and at least one person has to receive and understand it (receptive communication). While these processes function together to create a communication exchange, and are interrelated, each requires its own set of subskills and needs to be looked at separately. A student may understand what is said to him but be unable to formulate a response. On the other hand, someone may be able to express her own thoughts but lack the perspective to understand what is said to her.

We tend to think of communication happening primarily through speech and written language, but we also use gestures, facial expressions, body postures, tone of voice, and behavior to convey messages. Understanding and using nonverbal, as well as verbal, communication is a necessary part of effective information exchange. A timely gesture or facial expression may more clearly express what a person is thinking than the spoken word.

Although the combination of verbal and nonverbal language is the way most individuals communicate, other methods can be used to enhance or substitute for spoken language. Sign language is, of course, the most common. Objects, pictures, or written words can also be used in a variety of ways to convey messages. Since individuals on the autism spectrum vary greatly in their communication, and what works for one may not work with the next, we need to have a wide array of tools as we work with each child to build a bridge to effective communication. This book will provide an overview of commonly used methods and strategies for addressing the communication needs of individuals on the spectrum, from the nonverbal and beginning communicator to the highly verbal individual with high functioning autism or Asperger Syndrome.

How Does Autism Affect Communication?

On its website, the Autism Society of America defines autism as the following:

“Autism is a complex developmental disability that typically appears during the first three years of life and affects a person’s ability to communicate and interact with others. Autism is defined by a certain set of behaviors and is a ‘spectrum disorder’ that affects individuals differently and to varying degrees.”
(<http://www.Autism-Society.org>)

Autism Spectrum Disorders (ASD) differ greatly from one person to the next, but by definition, ASD impacts the ability to communicate and interact with others. How communication is affected also differs greatly. People on one end of the spectrum have no means of communication and may appear totally disinterested in those around them, seeming to exist in a world of their own. On the other end are those described as having high functioning autism (HFA) or Asperger Syndrome. Their language skills are usually on par for their age, and they may seek out others and talk incessantly, but they lack conversation skills and appear awkward in their attempts to socialize.

It’s often hard to determine where each person fits on the communication continuum. However, to provide some organization, I have divided methods and strategies into two sections: needs of nonverbal and beginning communicators are addressed in part one, and part two focuses on verbal communicators. These are not clear divisions. Strategies in part one may be useful for children described in part two and vice versa. Part one looks at the characteristics, assessment, and most common interventions for children who do not speak at all or those who use only a few words. It also covers the use of Augmentative and Alternative Communication (AAC).

Part two addresses the communication needs of the verbal child. Packaged programs are not commonly used at this level since there is such a range of skills and ability levels that it would be impossible for any single program to attempt to meet the many needs. In part two, strategies and activities are described that address different communication needs, including repetitive language, difficulties in understanding verbal and nonverbal communication, language usage, and conversation skills. It is impossible to draw a line between communication

Challenges in Assessing Communication

- In order to provide the best, most targeted communication treatment program for a child with autism, a comprehensive communication evaluation needs to be conducted by a speech-language pathologist (SLP). This assessment needs to evaluate pragmatic language skills (functional and social communication) as well as semantic language skills (the meaning of language—including content and context). Because of the unique nature of autism, the assessment requires a team effort, involving family, teachers, and others who know the child well, and it should include more than standardized testing. A complete picture of the child is needed to make treatment decisions and to provide a baseline by which progress can be measured.

The following assessments in chapter 1 can be used with all students addressed in part one and part two.

Professionals face a number of challenges when trying to accurately assess communication abilities of a child with autism. The following factors need to be considered when planning the assessment.

- The child may have difficulties understanding directions or how to respond. He may lack the communication skills to answer “yes” or “no.”
- A child with autism may lack motivation because she does not understand the importance of trying to do her best in a testing situation.
- A child with autism may suffer from anxiety and will not function well in an unfamiliar situation with an unfamiliar adult.
- Distractibility and disorganization are often associated with autism and can make performing on cue difficult.
- The child’s ability to respond and communicate can vary a great deal from one day to the next, making it difficult to get an accurate measure.
- There can also be significant discrepancies from one skill to the next. A child with high functioning autism may appear to have a well-developed expressive vocabulary, while his receptive language skills are limited.
- The testing situation is different from everyday life. How the child interacts in the classroom or at home may not be reflected in the assessment setting, where interactions take place in a one-on-one, organized format.

- During an assessment, the child is given more time to process language than during typical everyday exchanges.
- In the typical assessment, the clinician directs activities and communication. The ability to initiate communication (a common problem with autism) is often not evaluated.
- An evaluation sometimes ignores critical nonverbal and pragmatic language skills.

What Do You Need to Find Out?

A communication assessment for a child with autism can provide valuable information to help parents, teachers, and specialists to understand the child's strengths and deficits, to set realistic goals, and to plan an effective program. To get an accurate view of the child's communication abilities, an assessment should endeavor to answer the following questions.

- Are there any complicating factors such as hearing problems or intelligibility issues?
- How has the child's communication skills developed since birth?
- How much does the child understand? Does he . . .
 - Understand individual words? Sentences? In context? Out of context?
 - Follow verbal directions?
 - Understand nonliteral language?
 - Need extra time to process verbal language?
- How much is the child able to express? Does she . . .
 - Use any verbal language?
 - Use language to make requests and protests?
 - Use words as labels?
 - Use multiword phrases and sentences?
 - Avoid speaking or speak infrequently?

Beginning Language Development

- The child begins to respond to his name or other familiar high-interest words by looking at the speaker, by smiling, or with some other predictable response.
- The child begins to recognize the meaning of single words; usually in the beginning these words are labels, such as “bath” or “Daddy.”
- The child will respond to commands accompanied by gestures, such as “come here,” or “stop.”
- The child will imitate distinctive sounds, such as those that animals make or nonsense sounds.
- The child will begin to follow simple directions, such as “give me the doll.”
- Imitation becomes more sophisticated, with the child imitating vocal sounds and attempting to imitate words.
- Next, the child will spontaneously use sounds or word approximations with communication intent, such as saying “baba” to indicate that he wants his bottle.
- With practice, sounds and word approximations become recognizable words the child uses to label items and to express wants and needs. With continued practice, the child’s receptive and expressive vocabulary grows.
- As the child is learning to say single words, he is beginning to understand short phrases and sentences. He begins to respond to multiple cues, like “Give me the red truck,” responding to the words “truck” and “red.”
- The child will begin combining two words to make new phrases, such as “Mommy come,” or “big cookie.” This is different from saying two or more words that he has learned as a unit, such as “Teacher Robin” or “Blue’s Clues.” The table that follows gives examples of early two-word phrases.

Two-Word Phrases	
subject – verb	“Daddy run”
subject – object	“Mommy coat” (<i>for “Mommy, put my coat on.”</i>)
action – object	“kick ball”
descriptive	“big doll”
words that go together	“sock shoe”
location	“on table”
time	“want now”
number	“two shoe”
more/refusal	“more candy” “no juice”
possessive	“Mommy car” (<i>without the apostrophe and “s”</i>)

- The child will begin to ask simple questions, such as “What dat?” and “Where Grandma?”
- The child will use increasing longer utterances, adding three-word phrases and sentences along with carrier phrases. Carrier phrases are words such as, “I want ____” that occur together in a definite order and are used frequently. These phrases can be taught as a unit, as the child only needs to add one or two key words to complete the message.

Three-Word and Carrier Phrases	
subject – action – object	“Tommy kiss baby”
subject/object – action – location	“Mommy go work” “throw ball outside”
prepositions	“car in garage”
modifying phrases	“want my ball”
carrier phrases	“I want ____.” “I don’t like ____.”

As children continue to use spoken language, receptive and expressive vocabularies increase, as does the length of their utterances. They begin to use complete sentences and gradually begin using more and more correct language structures.

Continuing Language Development

- The child uses pronouns.
- The child will frequently use complete sentences and continues to add new words, but uses incorrect verb tense (“Yesterday we go store.”) and omits correct word endings indicating plurals and possessives (“I see four cat.” And “Not mine. Jade coat.”).
- Gradually, the child will begin to use correct syntax by adding “-ing” to words and adding an “s” to make plurals.
- Past tenses are added using “-ed,” then irregular past tenses, as in “I fell down.”
- The apostrophe “s” is used to indicate possession, and articles (“the” “an” and “a”) are added.
- The child answers “why” questions.

What Is Applied Behavior Analysis?

Applied Behavior Analysis (ABA) provides the foundation for many of the approaches that will be described in chapter 5 and is used to some degree with all teaching methods. ABA is an intervention model based on Skinner’s behavioral theory of operant conditioning, which states that behaviors can be taught by using a system of rewards and consequences. In ABA, these behavioral principles are applied to social behaviors, such as attention and communication, and data is taken and analyzed to measure progress and modify interventions as needed.

ABA techniques use the functional behavior analysis approach (antecedent–behavior–consequences) to create learning opportunities. The child is given a cue, with a prompt if necessary. After he responds, a reward or consequence follows. Depending on the method used, the cue may be very direct (“Look at me.”) or may be indirect (the teacher holding a desired object close to his face to elicit eye

Observation Notes

The form on page 59 can be used when observing the child. To gain the most information from observations, do a number of short ones in different environments with different people present and on different days.

Assessments

Short informal assessments can be helpful when reinforcers are difficult to identify. The basic idea is to present the child with potential reinforcers and see what interests him. Multiple trials are necessary to identify items and activities that are consistently reinforcing.

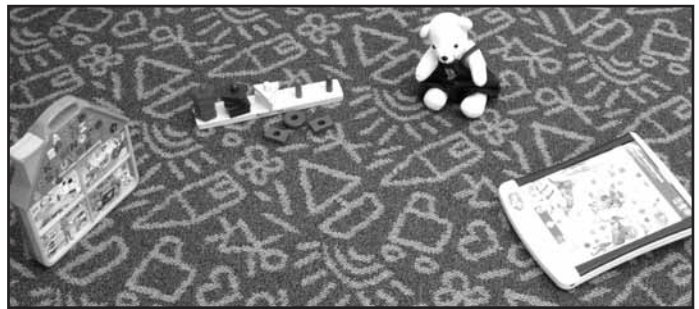
The assessment described below is an informal, simplified method, based on assessment procedures developed by DeLeon and Iwata (1996), and Pace, Ivancic, Edwards, Iwata, and Page (1985). For further information on these or other assessment procedures see the references on pages 232–235.

Reinforcer Assessment

- Choose a number of items that are of interest to the child. Choose items from each of the following groups:
 - Items that the child has expressed interest in.
 - Items that share characteristics with the items noted above. For example, if the child has shown interest in a toy that lights up, try other such toys or objects that light up.
 - Items that the child has not been exposed to.
- Divide items into groups of three to seven each. Present items to the child simultaneously, and consider how many the child can handle without becoming overwhelmed.
- Place the set number of items out in front of the child.
- On the data sheet on page 60, note which items the child picks up first.

Observation notes for Jacob

Date & Time	Where	Objects involved	People involved	Observations
5/12/08 10:45- 11:00	classroom	tubing board book	Jenny (TA)	Checked tubing Sewing tubing around flipped & stopped page in book Smiled (3x) at Jenny when she played peek-a-boo
5/13/08 9:45- 10:00	playground	swing pea gravel	Jermaine (SA) other children	Swung on swing while being pushed played with pea gravel - played chase w/Jermaine



5. Allow the child to explore the item for a brief period, and then put it out of sight.
6. Rearrange the remaining items and repeat steps 4 and 5 above. Continue until no items remain.
7. Either repeat the steps above presenting a new group of items or end the session.
 - a. A set of items could be tested again later in the day at a separate session.
 - b. Each group of items should be assessed five times over three different days.

Considerations When Assessing

Kids also are motivated by interactions or activities, such as tickles or peek-a-boo, that cannot be measured with this assessment. An alternative is to present a potentially reinforcing activity, such as tickling the child, and note the child's response on the data sheet page 61. Repeat this a number of times, on different days, to see if tickling is consistently reinforcing. When assessing this way, it's important not to discount an activity when the child displayed no interest after a single trial.

Reinforcer Assessment for Sophia

	Goldfish crackers	musical toy	scratch & sniff book	Stacking rings			
Trial 1 Date 5/12/08	1 st	2 nd	3 rd	4 th			
Trial 2 Date 5/12/08	3	1	2	4			
Trial 3 Date 5/13/08	2	1	4	3			
Trial 4 Date 5/15	4	1	2	3			
Trial 5 Date 5/15	2	1	3	4			
Average	2.4	1.2	2.8	3.6			

Sometimes during assessments, the child may act completely disinterested in everything presented. There are several factors that should be considered if this happens. First, look at the reinforcers you are presenting. Are there other items that might be more motivating? Also, consider whether the child might be distracted by other things in the environment. The assessment may need to take place in a smaller, more enclosed area, with fewer distractions. Keep assessments

brief (only a few minutes per session) and try doing assessments at times of the day when the child is most active and engaged. Also,

Symbol Recognition Assessment

name Danny

Preassessment Points to or gives symbol <i>use realistic photos</i>	9/10	0	0	+	+	+	+
		+	<u>met criteria</u>				
Step 1 Chooses object symbol <i>(Skip)</i>							
Step 2 Chooses photo symbol	9/5	0	+	+	0	+	+
		+	+	+	<u>met criteria</u>		
Step 3 Chooses line drawing symbol	9/8	+	0	0	+	0	9/7 0
		0	0	<u>discontinued</u>			
Step 4 Symbol size	3x3 9/9	+	+	+	+	+	
		<u>met criteria</u>					
	2x2 9/9	+	0	+	+	0	0
		0	<u>discontinued</u>				
Step 5 Chooses from multiple symbols	3 symbols 9/10		+	+	+	+	+
		<u>met criteria</u>					
	4 symbols 9/10		+	0	+	+	0
		0	+	0	<u>discontinued</u>		
	5 symbols						

Date 9/10Type of symbol realistic photos Size 3x3 # of symbols 3

Symbol Recognition Assessment

name _____

Preassessment Points to or gives symbol							
Step 1 Chooses object symbol							
Step 2 Chooses photo symbol							
Step 3 Chooses line drawing symbol							
Step 4 Symbol size	3x3						
	2x2						
Step 5 Chooses from multiple symbols	3 symbols						
	4 symbols						
	5 symbols						

Date _____

Type of symbol _____ Size _____ # of symbols _____

Presentation of Symbols

Once you know the level of presentation, the size of symbols needed, and the vocabulary to be introduced, determine what type of format will help the child communicate most effectively. There are a number of factors to consider, including the following:

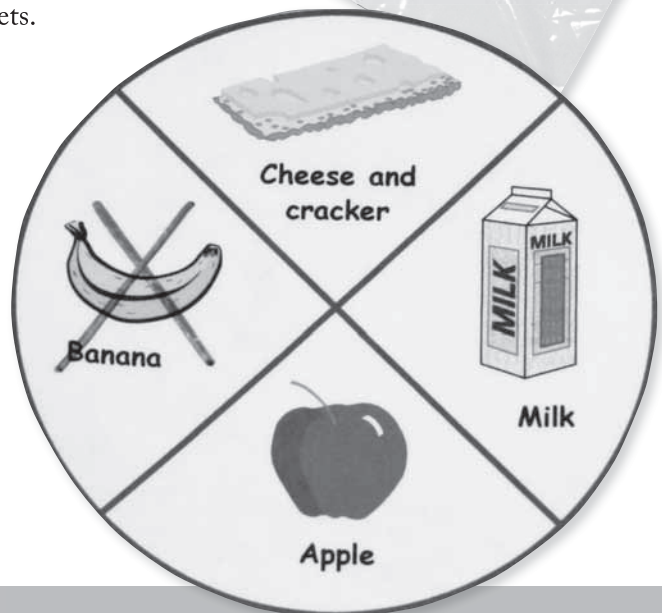
- What type of symbols are being used—objects, photos, or drawings?
- What size of symbol (if using a 2-D symbol)?
- How many symbols can the child consider at one time?
- How can the child best respond—pointing, pushing a switch, picture exchange?
- With whom will the child be communicating?
- How durable does the system need to be?
- What are the different locations where the system will be used?
- Will different vocabulary be needed for different locations and activities?
- How frequently will the system need to be updated (new vocabulary)?

There are nearly limitless possibilities for creating a system. Begin with a low- or no-tech system, such as a communication board or picture exchange. These are inexpensive, easily adapted, easily understood by communication partners, and provide a trial period that allows you to evaluate how good a match the system is for the child and his different environments. Once a child has moved on to using a more complex device, simple communication boards should still be kept available for times when the battery dies or there are technical problems, and to use at locations where you would not want to take the device, like out in the rain or to the swimming pool.

Communication systems can take many different forms and adapted to meet various needs. Some ideas include:

- Picture or object exchange system—see PECS, pages 109–113.
- Object communication board.
- Small objects in plastic baggie; several baggies can be made into a baggie book.

- Small objects or pictures with adhesive magnetic tape attached, placed on fridge or metal surface.
- Communication board with realistic photos or line drawings.
- Communication boards near site where it will be used, like at snack table, at group time, etc.
- Communication boards kept in notebook, given to child by adult as needed.
- Small photo album or credit card holder containing communication symbols.
- Communication symbols on key ring, could be attached to belt or worn around neck.
- Communication notebook— pictures on pages inside or displayed on the cover with Velcro™ (with pictures not in use stored inside the notebook).
- Symbols in notebook using trading card holders.
- Symbols displayed in clear library pockets.
- Symbols on choice boards.
- Symbols in small magnetic photo holders, placed on fridge or metal surface.
- Symbols printed on magnetic sheets placed on metal surface.
- Simple single message switches.
- Simple voice output devices with several messages.
- More complex electronic devices.



Using cues and prompts effectively was discussed in chapter 4. These guidelines hold true whether you are teaching the child to use verbal language or an AAC system. Prompt dependency is such a major problem for both AAC users and individuals with autism that educating parents and staff on how to effectively use prompts needs to be a top priority. Unfortunately, it's all-too-easy to over-prompt without realizing you are doing it. This is an area that requires training with constructive feedback or self-monitoring. Observing and videotaping interactions with the child can be difficult to arrange in a busy classroom, but can make huge differences in the child's ability to communicate.

School and Home Communication

For AAC to provide an effective means of communication for the child, it needs to be used in all of his environments, including home. It's important for home and school to support each other's efforts and to update each other regularly on progress and concerns. When new symbols are introduced at school, make copies and send them home. If parents introduce new symbols or notice new types of communication attempts, this information should be passed on to school staff.

Often parents and teachers send a daily communication notebook back and forth that relates what kind of morning the child had, how his day at school went, and so on. This can be a good way to share information about how he is communicating—what new words he used, symbols he doesn't seem to understand, sharing new opportunities for communication. (He has a new puppy; what messages could we add that would allow him to talk about his puppy?) One way to encourage this home and school sharing of information is to create a simple form with different topics where comments can be written. (See example, page 120.) Make copies of blank forms and staple them together to make a booklet. This is a reminder to address all areas. Otherwise comments can tend to be limited to how the child is feeling and his behavior.

Home – School Notes for John Date _____
How John is feeling
Communication - New words & signs
Behavior
Special Activities
Accomplishments
Concerns

Prompting strategies differ somewhat with AAC, because you must prompt the child to take physical actions. These are much easier to prompt and allow you to avoid verbal prompts which are the hardest to fade. When initially teaching a child to communicate with symbols, begin by teaching her to hand the symbol to an adult or to point to the symbol. But do not use verbal prompts. Both methods can be physically prompted from behind the child, fading the prompt as quickly as possible.

The following is an example of a hierarchy of prompting as it could apply to using a communication symbol to get pretzels.

Natural cue—child sees pretzels, teacher asks, “Do you want some pretzels?” Communication symbol is close by.
Teacher places symbol directly in front of child, between child and pretzels.
Teacher touches or taps symbol.
Teacher models touching the symbol and eats a pretzel.
Teacher touches the back of child’s arm and nudges toward symbol.
Teacher uses hand-over-hand prompt from behind to help the child touch the symbol.

Another difference with AAC is that the child’s focus is on the symbol, which makes engaging him a challenge. Pointing to a symbol, or handing it to an adult, can become a transaction instead of an interaction, like clicking a button on the computer. Extra effort is needed to get him to engage with the communication partner.

As mentioned earlier, when the child is first learning to recognize a symbol, hold it next to the object to help him make the comparison. But once he has learned to recognize the symbol, hold it up in front of your face. If necessary, move so your face is on the child’s level, so he can’t avoid looking at your face. Then exaggerate your facial expressions and tone of voice while he’s looking at you, right before he gets what he asked for. When the child has chosen the correct symbol, give a big smile, nod your head “yes,” and say in an excited voice, “Candy! You want candy!”

Object Symbols

Actual items:

1. crackers
2. juice carton
3. play dough
4. candies
5. Slinky
6. inflated balloon

Object symbol for desired items:

1. cassette box with crackers
2. empty juice carton attached to backing
3. small piece of play dough attached to backing
4. candies taped on card stock
5. Slinky attached to backing
6. slightly inflated balloon attached to backing

Realistic photos of:

1. crackers
2. juice carton
3. play dough
4. candy
5. Slinky
6. inflated balloon

Line drawing symbol of:

1. crackers
2. juice carton
3. play dough
4. candy
5. Slinky
6. inflated balloon

Distracter Items

Actual item:

1. piece of card stock
2. Styrofoam tray
3. celery
4. sock
5. small box
6. poker chip

Object symbol for distracter:

1. cassette box with piece of card stock in it
2. piece of Styrofoam tray glued on backing
3. piece of celery taped on card stock
4. small sock in clear plastic container
5. small box attached to backing
6. cassette box with poker chip in it

Realistic photos of:

1. piece of card stock
2. Styrofoam tray
3. celery
4. sock
5. small box
6. poker chip

Line drawing symbols of:

1. piece of card stock
2. Styrofoam tray
3. celery
4. sock
5. small box
6. poker chip

Sample Symbol Assessment Kit

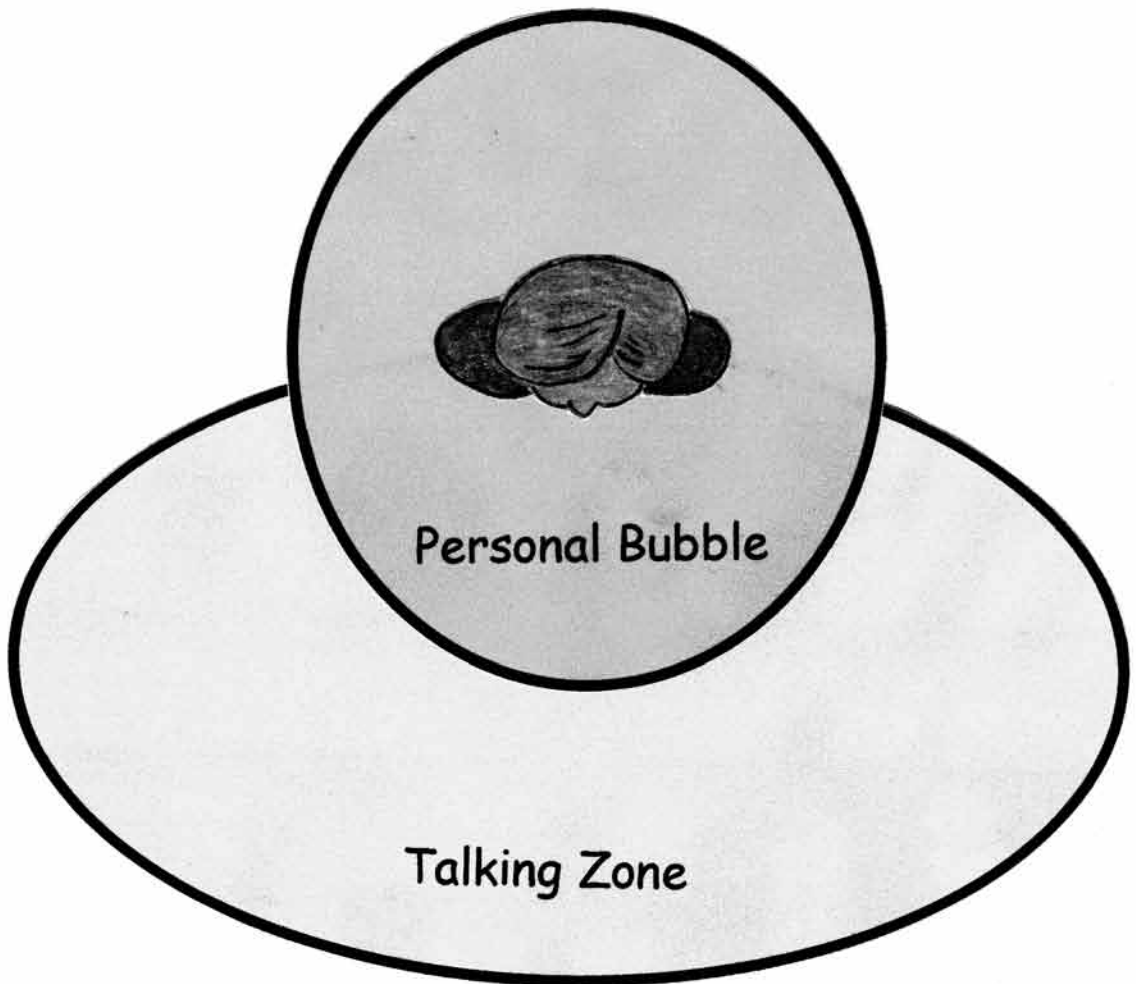
The following is an example of the type of items that could make up a symbol assessment kit.

Six items in each category would be the minimum number needed. Having more items would allow for greater choice.

Communication Plan for _____ Date _____

Schedule/ Activity	Communication Opportunity/ Message	Mode of Communication/ AAC System	Notes

Personal Space



Personal Space



Everyone has an invisible bubble around them.
You can't see it, but it's their personal space bubble.

People want other people to stay outside their
personal space bubble most of the time.

Moms and dads and kids sometimes like to hug or sit really close together
and that's OK.

But other people don't like it when I get too close.
It makes them feel funny.

I can remember not to get too close to other people by thinking about their
personal space bubble.

When I put my arm out, that shows me how close to someone I can stand.



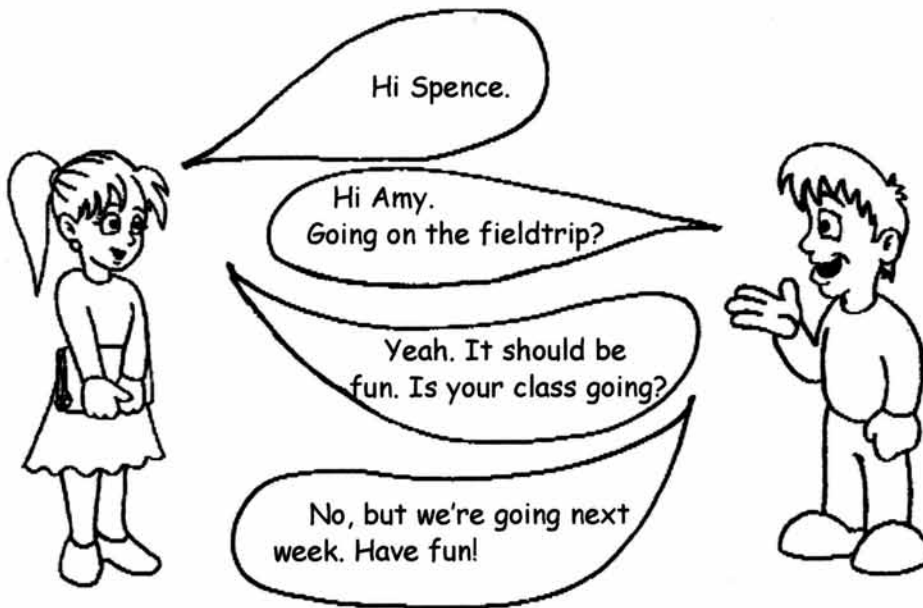
If someone steps away from me or looks upset,
then I am probably standing too close.

Kids will feel a lot better if I remember not to get too close.

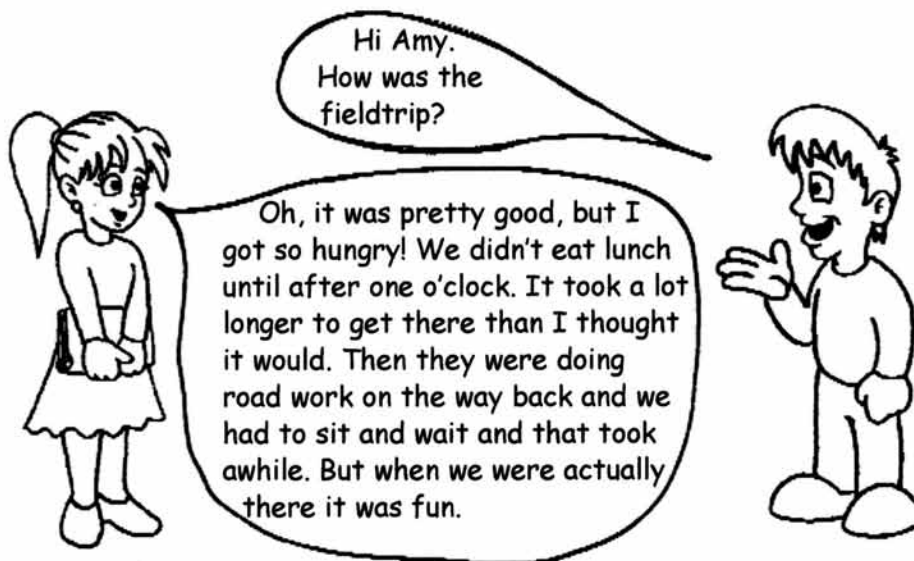
Kids will like being with me more if I remember their
personal space bubble.



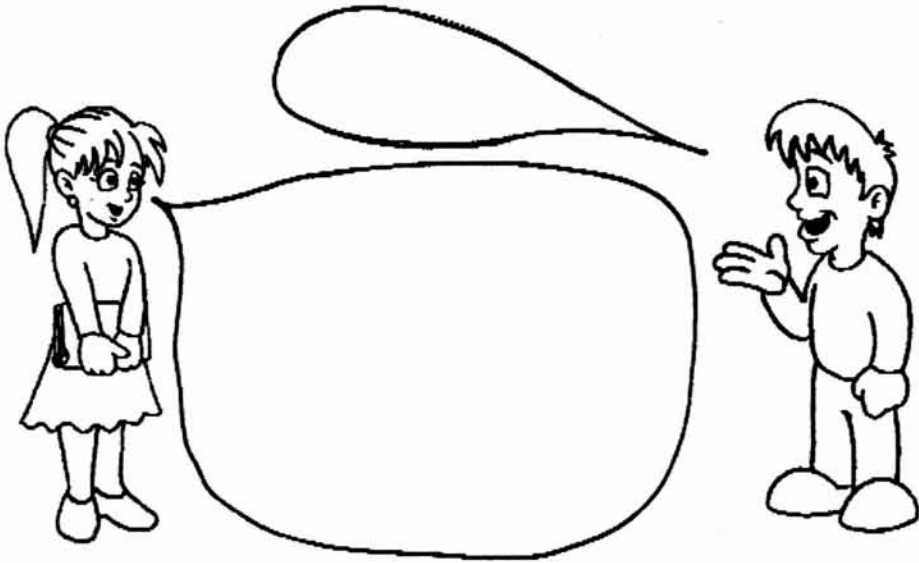
Balanced Conversation



Unbalanced Conversation



Unbalanced Conversation



Balanced Conversation

