Using Assistive Technology to Facilitate Communication and Play for Children with Disabilities

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IDAHO ASSISTIVE TECHNOLOGY PROJECT

Participants will learn:

- Describe what is facilitated communication.
- Identify strategies to facilitate communication including picture and symbol use.
- Identify activities during the day that pictures/symbols can be added to easily.
- Demonstrate where to find resources for pictures/symbols and other materials

Participants will learn:

- The importance of play
- The play skill limitations often exhibited by children with disabilities
- Action, Novelty and Control
- How we learn to play
- Modifying the play environment

Idaho Assistive Technology Project

The Idaho Assistive Technology Project (IATP) is a federally funded program administered by the Center on Disabilities and Human Development at the University of Idaho.

IDAHO ASSISTIVE TECHNOLOGY PROJECT

Idaho Assistive Technology Project

Our goal is to increase the availability of assistive technology devices and services for older persons and Idahoans with disabilities.

Idaho Assistive Technology Project

- Assistive Technology Lending/Demo Library
  - Locations - Coeur d' Alene, Moscow, Boise, Idaho Falls

    *Shipping available

Idaho Assistive Technology Project

- Coeur d'Alene AT Resource Center
  1031 N. Academic Way, Room 130D
  Coeur d'Alene, ID 83814
  208-292-1406
  Open Mondays. Other days by appointment

Idaho Assistive Technology Project

- Boise AT Resource Center

  322 E. Front Street, Suite 324

  Boise, ID 83702

  208-364-4561

  Open Mondays and Tuesdays. Other days by appointment.

IDAHO ASSISTIVE TECHNOLOGY PROJECT

Idaho Assistive Technology Project

Living Independently for Everyone
(LIFE, Inc.)
250 S. Skyline, Suite 1
Idaho Falls, ID 83402
208-529-8610

Idaho Assistive Technology Project

- Assistive Technology Information and Referral

  - (800) IDA-TECH
  - idahoat@uidaho.edu
  - Idahoat.org

Language Development

- Birth to 5 months
  - Reacts to loud sounds.
  - Turns head toward a sound source.
  - Watches your face when you speak.
  - Vocalizes pleasure and displeasure sounds (laughs, giggles, cries, or fusses).
  - Makes noise when talked to.

Language Development

- 6 months to 11 months
  - Understands "no-no".
  - Babbles (says "ba-ba-ba" or "ma-ma-ma").
  - Tries to communicate by actions or gestures.
  - Tries to repeat your sounds.

Language Development

- To 17 months
  - Attends to a book or toy for about two minutes.
  - Follows simple directions accompanied by gestures.
  - Answers simple questions nonverbally.
  - Points to objects, pictures, and family members.
  - Says two to three words to label a person or object (pronunciation may not be clear).
  - Tries to imitate simple words.

Language Development

- 18 to 23 months
  - Says 8 to 10 words (pronunciation may still be unclear).
  - Asks for common foods by name.
  - Makes animal sounds such as "moo."
  - Starting to combine words such as "more milk."
  - Begins to use pronouns such as "mine."

Speech vs Language

- Kelly's 4-year-old son, Tommy, has speech and language problems. Friends and family have a hard time understanding what he is saying. He speaks softly, and his sounds are not clear.

- Jane had a stroke. She can only speak in one- to two-word sentences and cannot explain what she needs and wants. She also has trouble following simple directions.

Speech vs Language

- ***Language*** is made up of socially shared rules that include the following:
  - What words mean (e.g., "star" can refer to a bright object in the night sky or a celebrity)
  - How to make new words (e.g., friend, friendly, unfriendly)
  - How to put words together (e.g., "Peg walked to the new store" rather than "Peg walk store new")
  - What word combinations are best in what situations ("Would you mind moving your foot?" could quickly change to "Get off my foot, please!" if the first request did not produce results)

Speech vs Language

- ***Speech*** is the verbal means of communicating. Speech consists of the following:
  - ***Articulation***: How speech sounds are made (e.g., children must learn how to produce the "r" sound in order to say "rabbit" instead of "wabbit").
  - ***Voice***: Use of the vocal folds and breathing to produce sound (e.g., the voice can be abused from overuse or misuse and can lead to hoarseness or loss of voice).
  - ***Fluency***: The rhythm of speech (e.g., hesitations or stuttering can affect fluency).

Facilitating Communication
What is it and why do it?

What is Facilitated Communication?

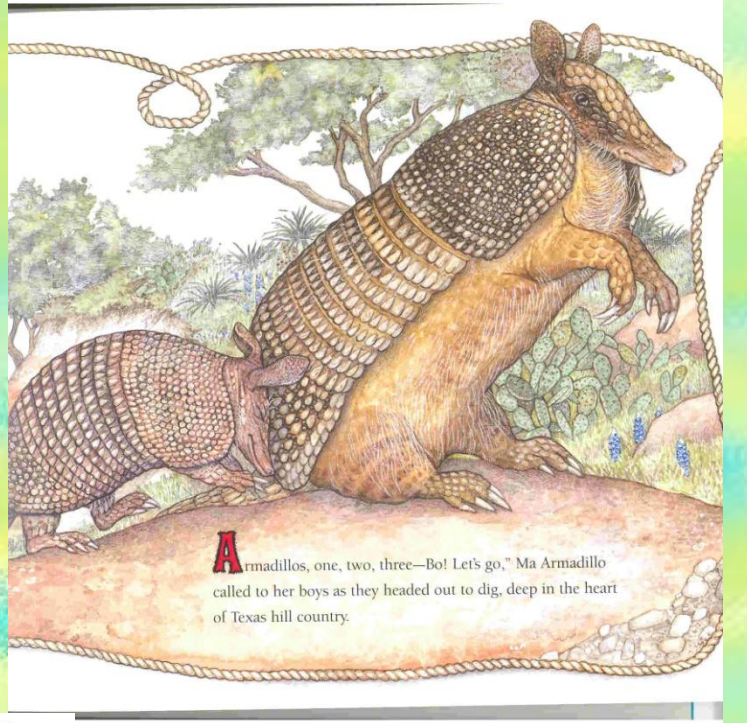
- Adding cues – pictures, gestures – to your speech
  - Such as adding symbols to the bottom of a story
  - Using sign language as well as speech

Why do it?

- Benefits all children – Makes language more concrete
- Improve receptive language skills
- Provides multi-sensory input
- Helps language become visible for children with autism
- Facilitates learning by making learning active

Examples

- Adding symbols to a story



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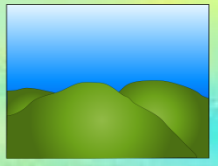
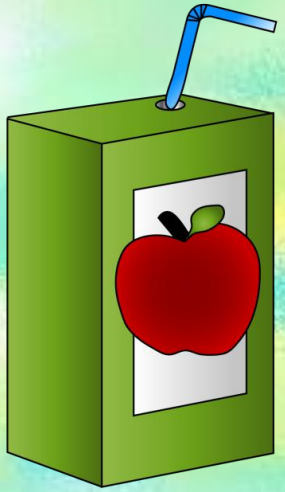


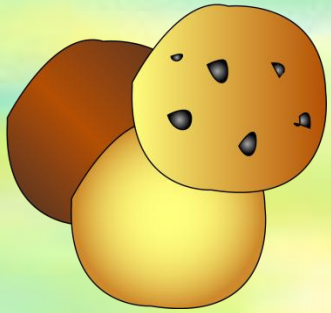
Examples

Attendance Boards for Circletime-Construction
Level 3- Making Language Visible
who?
at school
home
Sadie
Hello
©Creative Communicating

Examples

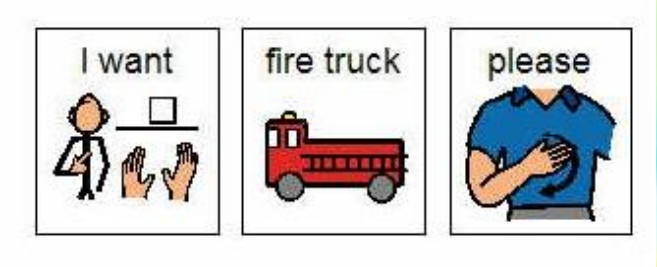
- Use symbols that show parts of lunch.



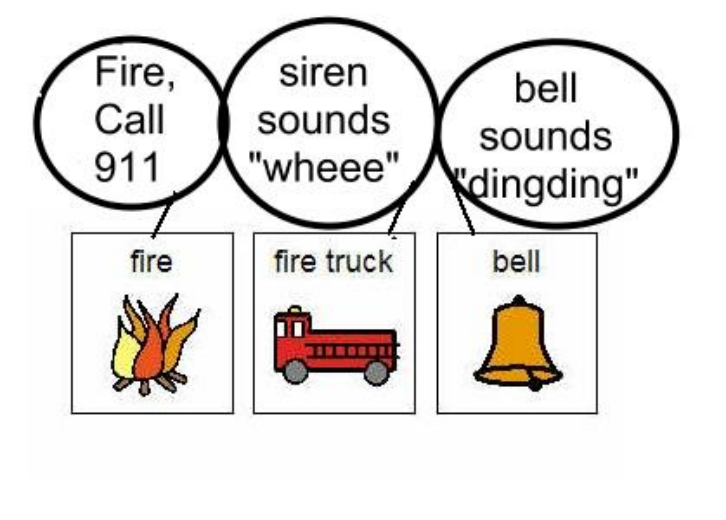


Examples

- Request language –



- Action/Novelty/Control Language



How does facilitating communication work with facilitating play?

Let's now look at play

Play develops these skills

- Attention Span
- Creativity
- Problem solving
- Learning about themselves, others and the world
- Memory
- Planning
- Cooperation
- Inner Language

Play-skill limitations often seen in children with disabilities include;

- Limited repertoire of play skills
- Limited selection of materials
- Engage in more solitary play and less social play
- Limited attention span
- Less play with objects and more stereotyped play with own bodies (example - chew on arm or foot)

Play-skill limitations often seen in children with disabilities include;

- Tend to prefer more structured play areas
- Consistent delay in symbolic play
- May spend more time aimlessly moving around
- Symbolic play only available when language skills are above the 19th month level

Provide Action, Novelty and Control

- Action – the excitement of an activity that encourages communication

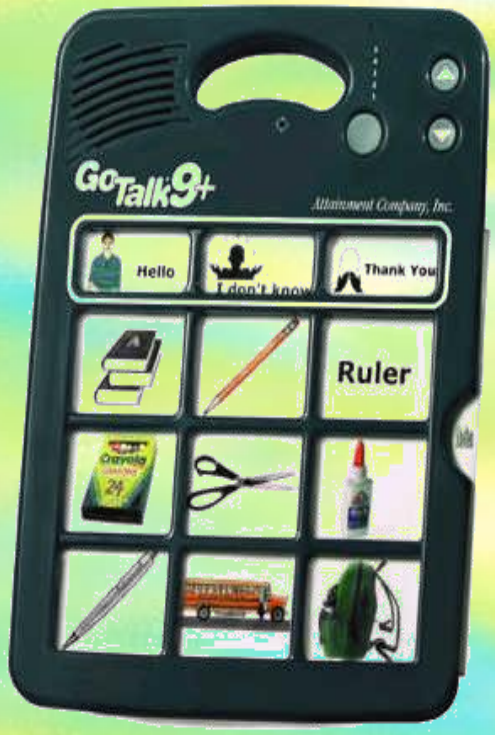
Provide Action, Novelty and Control

- Novelty – the users ability to manipulate and change the activity and the vocabulary

Provide Action, Novelty and Control

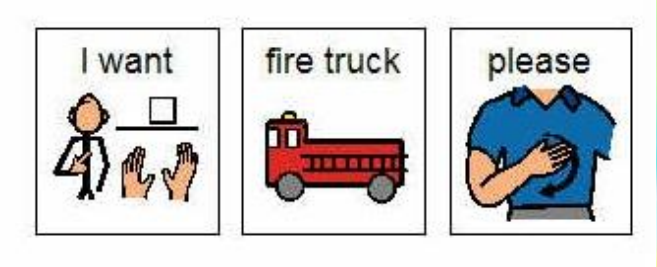
- Control – is having the communicative power to be the boss of an activity

GoTalk 9+



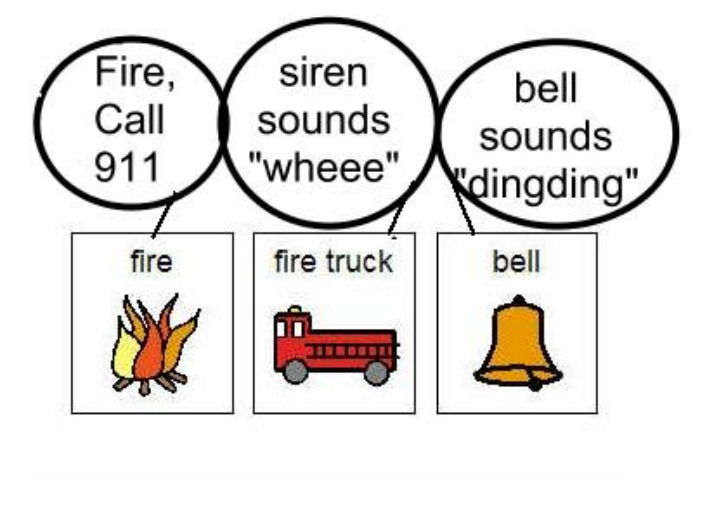
Provide Action, Novelty and Control

- Request language –



  - Versus

- Action/Novelty/Control Language



Types of Play

- Sensory exploration

Types of Play

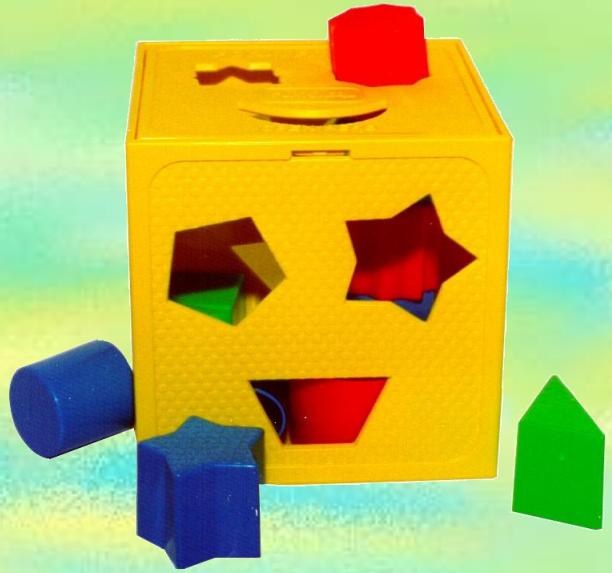
- What does it do? Exploring function

Types of Play

- What does it do? Combining + Imitating

Types of Play

- What else can I do with it? Organize, Sort + Build



Types of Play

- What can it be? Pretending

Types of Play

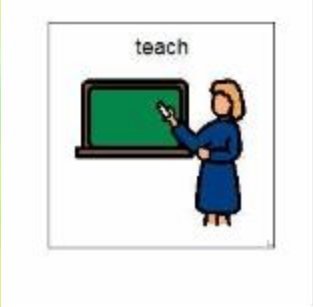
- What can I make? Creating

Types of Play

- Read me a story? Reading + Listening

How do you play?

- Teach …

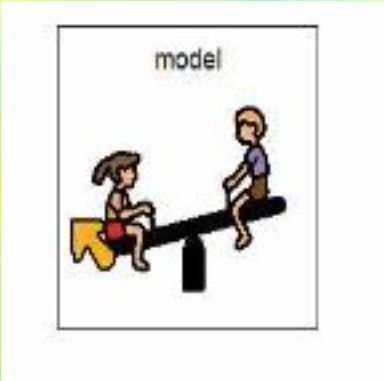


- Generalize … I can play!

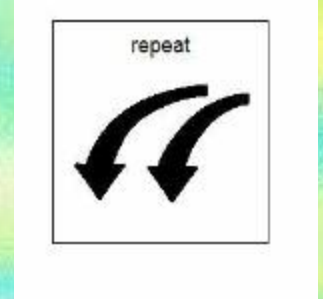
- Interact

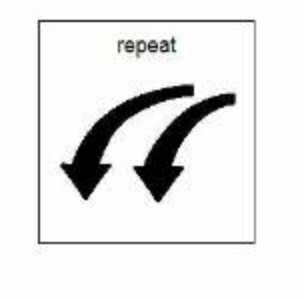
Play tutoring

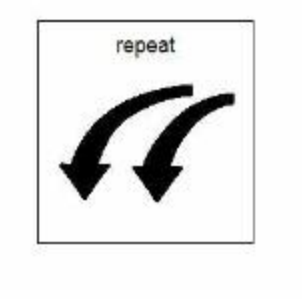
- Model



- Repeat, repeat, repeat







The Play Environment

- Child's developmental level
- Child's level of Representation – at early levels, important to have realistic toys arranged in thematic units, at later levels too many realistic toys don't encourage development of symbolic function with object substitutes and imaginary objects

The Play Environment

- Consider child's toy preferences
- Provide multiple "gender toys" to develop more rounded people
- Accessible toys

Sensory Exploration

What the child does

- The child uses all of his/her senses to explore objects.
- S/he gazes, listens to, smells, touches, bats, grabs, pulls at toys and begins to move towards them.
- Play materials are first looked at, then touched and finally brought to mouth to further explore.
- Children having difficulty manipulating toys may prefer highly reactive toys.

Sensory Exploration

Adaptations

- Young children w/disabilities may have difficulty getting to play items and using toys. How the toys are offered and the position that a child is in will influence the child's interactions.

Sensory Exploration

Position – on back/supine

- Supports: sling seat (vibrating), boppy
- In swing or stroller
- On floor blanket
- In crib

Suggestions

- Offer toys on overhead or crib gym
- Attachments to lower toys: links, stringers, shoelaces, elastic, snaps
- Encourage the child to connect with the objects with hands or feet

Sensory Exploration

Position – on side

- Supports: commercial side-lyers
- Against the couch; rolled towels, stuffed animals
- Against adult leg

Suggestions

- Place toys where child can see hands interacting
- Select toys that stay put and are easily used

Sensory Exploration

Position – on tummy

- Supports: prone boppy, rolled towels, pillow roll
- Looking over side of bed
- On parent's chest or legs

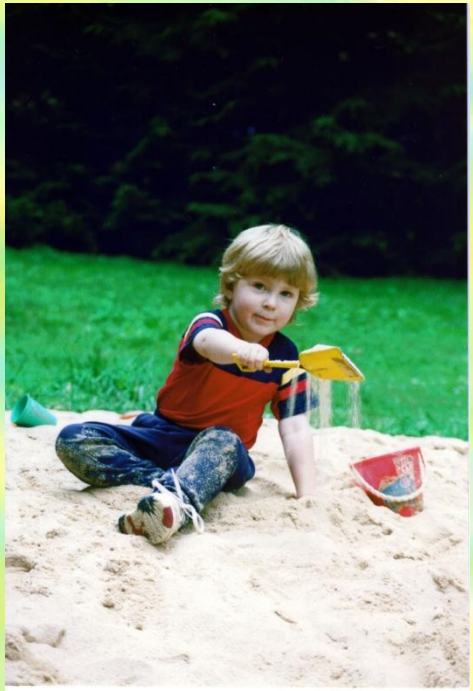
Suggestions

- Use play mats adapted with greater responses (i.e. bells, mylar, Velcro, etc.
- Offer highly reactive toys

What does it do?

What the child does

- A child explores a toy to see how s/he can make it "work". This begins with combination play such as banging toys against each other or a surface, emptying containers (dumping) and knocking blocks down. The child slowly begins to use toys as they are designed to be used; where the toy design "speaks" to them!



What does it do?

What the child does

- Reactive toys are used which are very responsive to a child's manipulation and may offer multiple areas responding in different reactions.

What does it do?

Adaptations

- Young children most often begin to move in order to get to toys and use them in different ways. For children limited in their ability to independently sit up or get to toys, supports are available to provide opportunities to better discover properties of toys.

What does it do?

Sitting suggestions

- Supports: boppy, chair customized with "pool noodles" or rolled towels for support, tri-wall floor sitters, Rifton chairs
- Trays: that work with seating system to place toys on; with a ledge to keep toys within reach
- Lean the child against an adult; between legs for support

What does it do?

Further Adaptations

- Stabilizers: materials that keep the toy in place for easier interaction. Materials can include any non-slip material, Velcro/showloop or dual lock.
- Suspend toys from a PVC square suspended from ceiling at a height that child can reach from wheelchair
- Provide a variety of table and floor surfaces for combination play
- Set up opportunities to “find” hidden objects

What does it do? Combining + Imitating

- Functional/Combination – The child begins to use toys in functional combination: shovel and sand or birdseed, spoon and bowl, in/out containers, putting blocks on top of each other. The combinations are meaningful. The child shows increasing organization and sequence of actions relevant to play objects.

Facilitating communication in this type of activity

- Add a picture, symbol or actual sample at the bottom of the bowl of the sand or birdseed to make it more obvious of where the sand or birdseed is to go.
- Add a picture, symbol or actual item to the outside of the box showing what you want to go into the box
- Photos and/or actual items are easier to understand initially than symbols

What does it do? Combining + Imitating

- Functional Imitation – Items are used to imitate real life routines. At first the action is directed toward the child her/himself. This includes pretending to be asleep, pretend eating or drinking from a cup, demonstrating emotions when asked (show me a happy face), etc. Child begins to mimic routines with others, i.e. offering a cookie to another, puts brush to own or another's hair, etc.

Facilitating communication in this type of activity

- This is a good place to start using symbols. Demonstrate the desired activity – pretending to sleep – and show the symbol of that activity at the same time and/or use the ASL sign for “sleep”
- The more senses you can target – sight, sound, movement – the more impact it has

Facilitating communication in this type of activity

- Example of a simple communication board that would work for a lot of simple games

What does it do?
Combining + Imitating

Adaptations

- Suggestions – *Confinement* materials to keep toys within reach: box tops, planters, hula hoops, trays with lips
- Velcro mitts help to hold kitchen utensils and tools

What does it do? Combining + Imitating

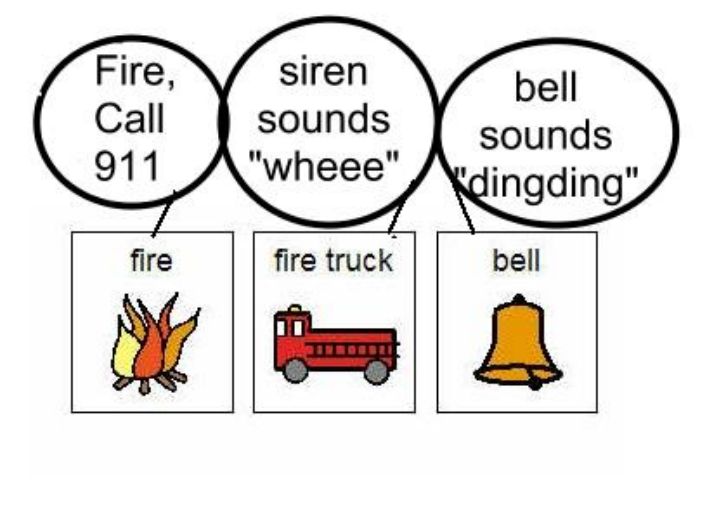
Adaptations – Switch use

- Look for a variety of switches requiring different movements; up to 2 switch choices
- Switch toys – where switch is separate from toy
  - Horizontal or vertical toys
  - Promotes less direct cause and effect
- Consider other switch toy activities: i.e. toy goes into box, toy knocks blocks down, pushes cup along, etc.

What does it do? Combining + Imitating

Adaptations – Switch use

- Use of single message switches adds choices and dramatic emphasis to play
- Use of switch toys and message combinations



What does it do? Combining + Imitating

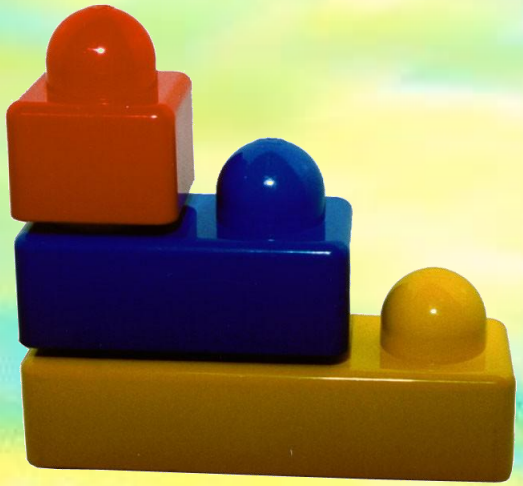
- Use of puppets, etc. to modify/expand switch toys

Remember the goal is not to hit a switch, but to play

What else can I do with it? Organize, Sort + Build

What the child does

- Organize, sort & build – child begins to use materials and incorporate planning, coordination, problem solving and creativity. Materials are used in simple and then more complex ways.



What else can I do with it? Organize, Sort + Build

What the child does

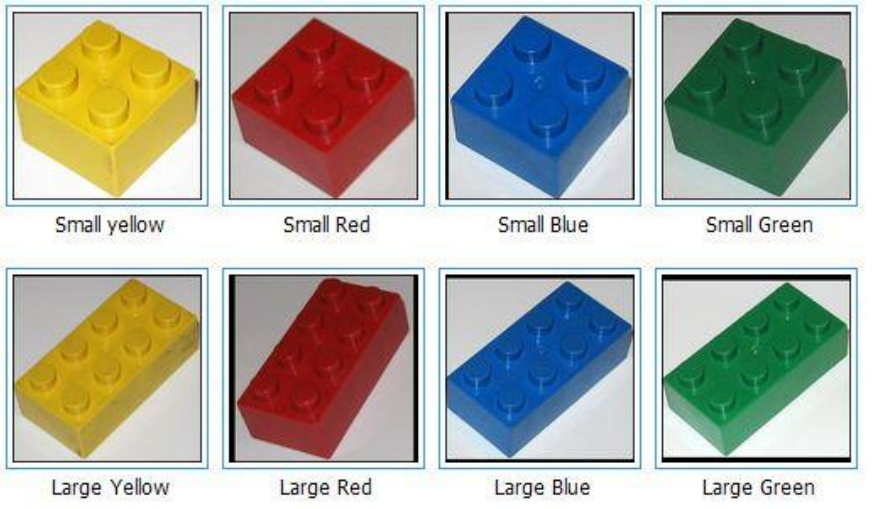
- Children manipulate objects in a variety of ways:
  - Shapes & sorters: Matching and contrasting shapes and sizes characterize these toys. A wide range of items is found, from same size shingle shapes to varied shape sorters.
  - Construction – young children begin constructing by placing items on top of or next to each other. Stringing pieces with cording or tubing is a type of construction.

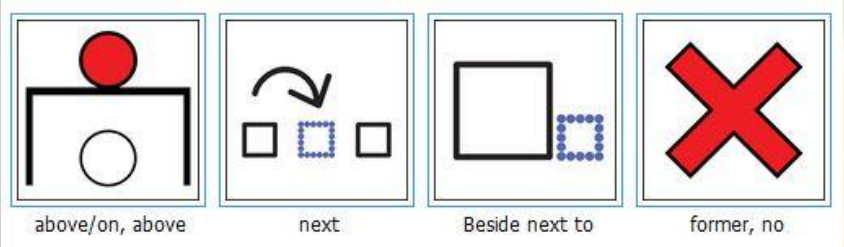
What else can I do with it? Organize, Sort + Build

- This is the area where a lot of children with disabilities have extreme difficulties doing this type of play
  - Disabilities that affect fine motor control and/or hand-to-eye coordination greatly reduce the ability of the child to sort and build
- Here is where facilitated communication can be a great addition

Facilitating communication in this type of activity

- The child can direct the building of a tower by using either a voice output device or photos/symbols of the various building components and directing the order the components are added.





What else can I do with it? Organize, Sort + Build

Adaptations

- *Confinement* materials (box tops, lids, containers) may assist in keeping smaller pieces within reach
- *Stabilizers* can keep bases still, making it easier to build
- Larger blocks and pieces may be easier to stack with
- A variety of container heights make sorting more interesting

What can it be? Pretending

What the child does

- The child begins to imitate actions seen or heard about and to build on these experiences to create new ones. Using theme environments (farms, airports, drive-through restaurants) helps the child to re-create experiences and routines. Language is developed through these experiences

Facilitating communication in this type of activity

- "Whee! Alison turn right towards the garage."
- "Alison, can you park it like Mom does at the store?"
- "Boy, you can sure go fast."

What can it be? Pretending

What the child does

- The child begins to imitate actions seen or heard about and to build on these experiences to create new ones. Using theme environments (farms, airports, drive-through restaurants) helps the child to re-create experiences and routines. Language is developed through these experiences.
- Props (miniatures of real life objects) are used throughout the play experiences of a child to enhance imagination.

What can it be? Pretending

What the child does

- The child begins to imitate actions seen or heard about and to build on these experiences to create new ones. Using theme environments (farms, airports, drive-through restaurants) helps the child to re-create experiences and routines. Language is developed through these experiences.
- Props (miniatures of real life objects) are used throughout the play experiences of a child to enhance imagination.
- As children get older, the representational objects get increasingly abstract – i.e. the child uses a peg for a bottle.

What can it be? Pretending

Adaptations

- Create play environments that everyone can be in and interact in
- Blankets over couches or tables
- Tents, cubes, tunnels
- Store items in easy to access bins that children can reach in
- Program communication devices to set up pretend interactions

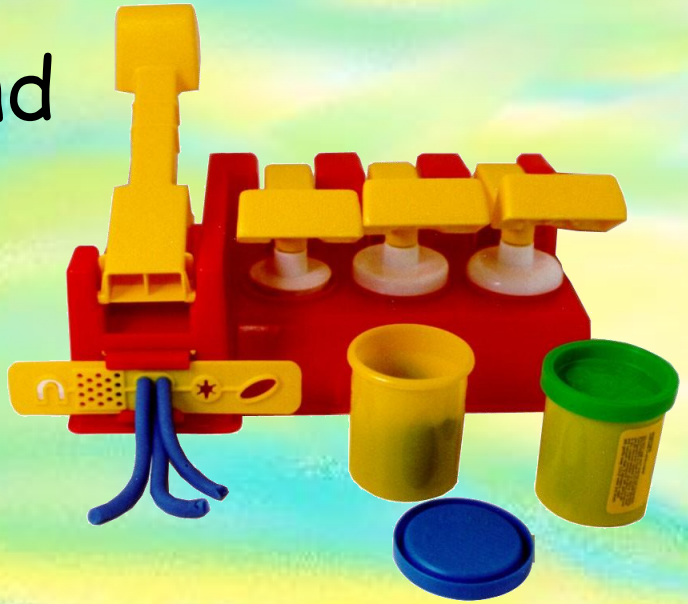
What can it be? Pretending

- Example of pretend play communication

What can I make? Creating

What the child does

- Creative Expression – Children participate in interacting with a variety of expressive materials where they combine manipulation, creativity and planning.



What can I make? Creating

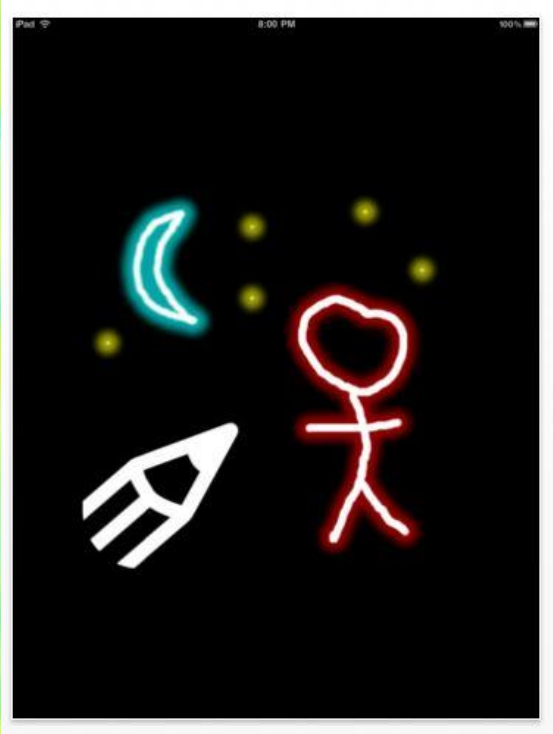
Adaptations

- Easel and wrist pads to make it easier to paint
- Adapted handles, build-up extensions for brushes and markers
- Portable art trays to keep messy or small materials within reach
- Floor tables

What can I make? Creating

Adaptations

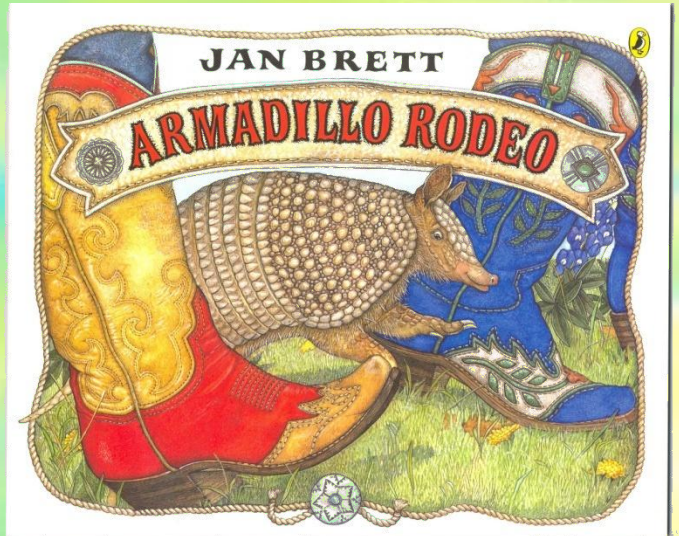
- Use an iPad with a drawing app



Read me a story
Reading + Listening

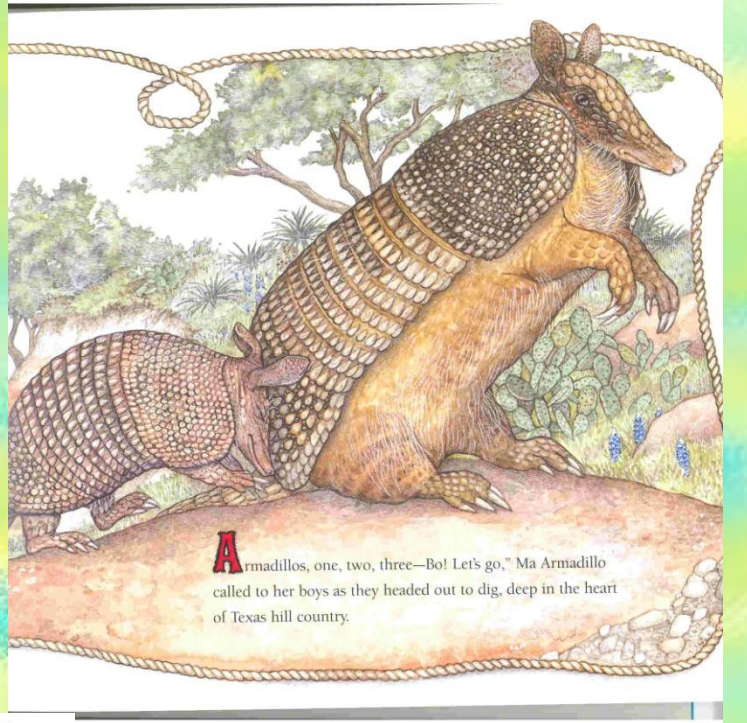
What the child does - Literacy development

- Children enjoy listening to language at a very early age.
- Conversation, rhymes, songs and books are offered.



Facilitating communication in this type of activity

- Adding symbols to a story



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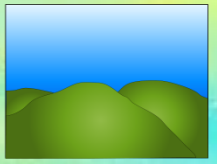


Read me a story
Reading + Listening

What the child does - Literacy development

- Opportunities to “act out” stories or characters are promoted.
- Early literacy opportunities have been shown to positively influence the total developmental process.

Read me a story
Reading + Listening

Adaptations

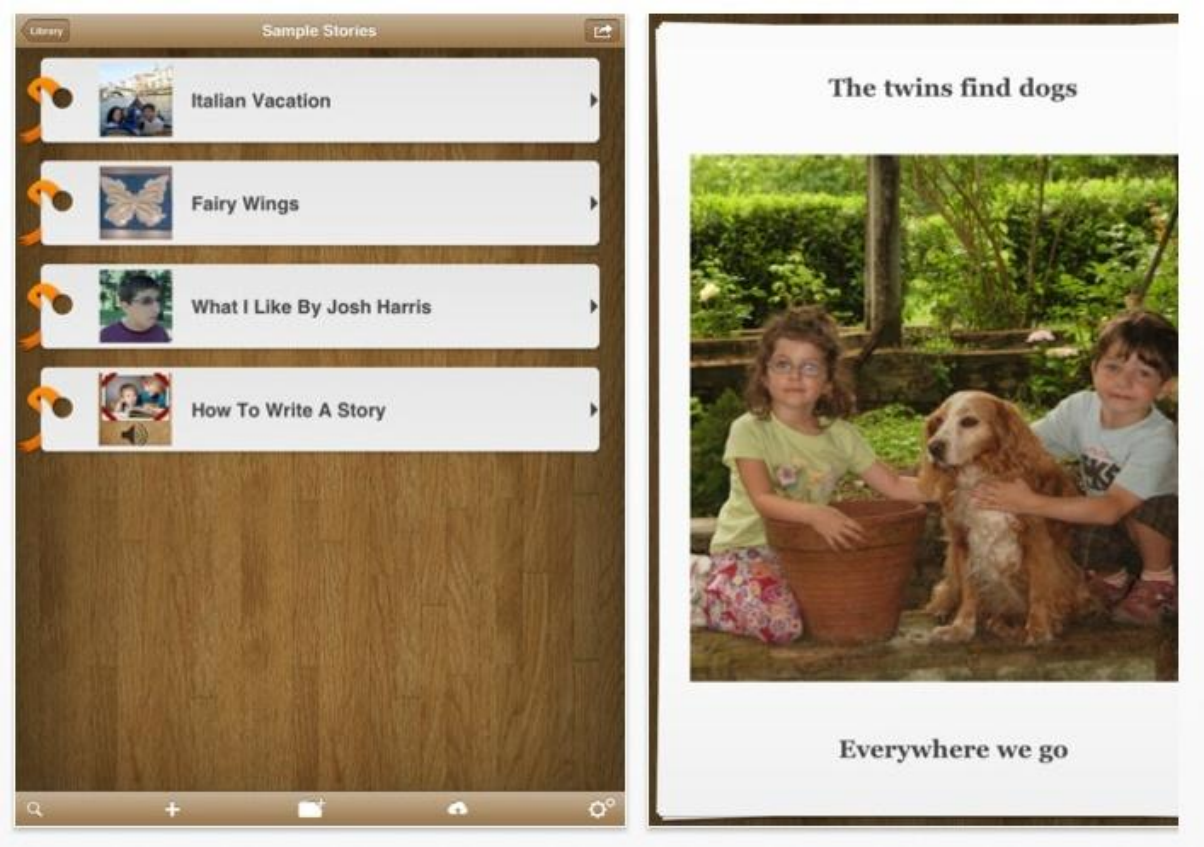
- Page fluffers make pages easy to turn

Read me a story
Reading + Listening

- Stabilize the book on a table surface; use Velcro on covers, shoelace through the spine, etc.
- Use a book stand

Facilitating communication in this type of activity

- Use an iPad with software such as "Pictello" to create the child's own stories.



Read me a story
Reading + Listening

Adaptations

- Software storybook programs, known as "lapware", give the caregiver/child an opportunity to read a book and turn the pages together.
- For older children, clicking on pictures and words results in the animation of the object "clicked".
- Adapt the computer with:
  - Easier to use trackballs
  - One key/click control
  - Computer interfaces for switches

BIGtrack

Useful Websites

- http://letsplay.buffalo.edu
- http://www.fisher-price.com/US/special_needs/default.asp
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Thank you

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