



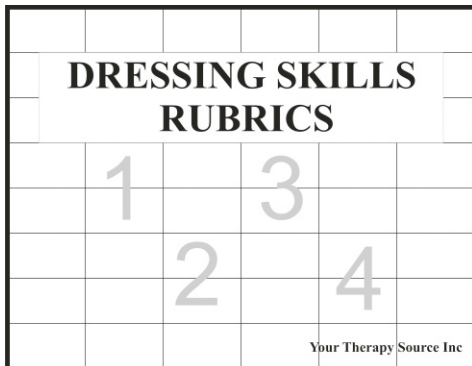
Your Therapy Source News

**Digital magazine for pediatric
occupational and physical therapists.**

Issue 26 - May 2011

www.YourTherapySource.com

New and Popular Products



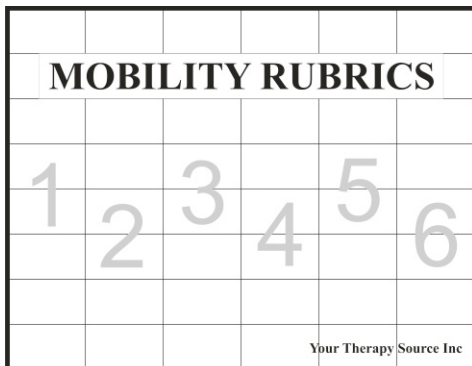
Dressing Skills Rubrics:

Download of an electronic book of 21 rubrics to assess dressing skills in PDF and Word format

List Price for electronic book: \$5.99

Sale price for ELECTRONIC book: \$2.99 until May 15, 2011

www.YourTherapySource.com/rubricsdressing



Mobility Rubrics:

Download of an electronic book of 11 rubrics to assess mobility skills in the school environment in PDF and Word format

List Price for electronic book: \$5.99

www.YourTherapySource.com/rubricsmobility



Sensational Brain Membership

Get access to BrainWorks which is an exciting new online tool for creating effective sensory diets for children, teens, and adults. BrainWorks takes pride in being USER- FRIENDLY, from start (selection of what you need) to finish (empowering the child to select appropriate activities). Our web-based product allows you to print out visual sensory diet tools, helpful forms, and activity picture cards.

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OR

\$189.00 for all staff from the same facility to access BrainWorks from multiple computers.



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Academics and Motor Skills in Children with LD

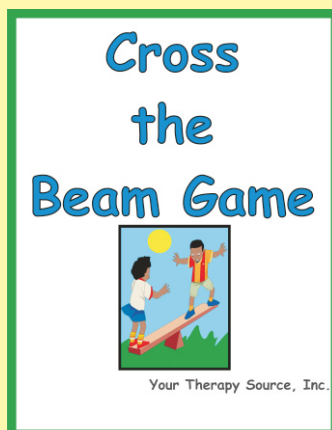
Some interesting research was published in the *Journal of Learning Disabilities*. The Movement Assessment Battery for Children (MABC) was performed on 137 children with learning disabilities (IQ>80). The following results were seen:

- * 52.6% scored below the 15th percentile on manual dexterity
- * 40.9% scored below the 15th percentile on ball skills
- * 33.7% scored below the 15th percentile on balance skills

In addition, when controlled for IQ the following small to moderate correlations were seen between:

- * spelling and math scores and overall MABC score
- * mathematics and balance scores
- * reading and ball skills
- * spelling and manual dexterity.

Reference: Pieter Jelle Vuijk, Esther Hartman, Remo Mombarg, Erik Scherder, and Chris Visscher
Associations Between Academic and Motor Performance in a Heterogeneous Sample of Children With Learning Disabilities *J Learn Disabil* May/June 2011 44: 276-282, doi:10.1177/0022219410378446



Title of Electronic Book: **Cross the Beam Game**

By: Your Therapy Source

Summary: Download of game that encourages balance skills and visual perceptual skills.

Product Details:

E-Book: 8 pages

Language: English

LIST PRICE: \$2.99

www.YourTherapySource.com/beam

iPads and Job Security for OT's



fter reading an article that some kindergarten classes in Maine, will be getting close to 300 iPads, I began to think about how this will effect the fine motor skill development of young children. And, how younger children's use of technology may provide an unfortunate sort of job security for pediatric occupational therapists. The rate of children receiving pediatric occupational therapy seems to rise year after year along with the amount of screen time for children. Check out these numbers:

1. Preschool children spend 32 hours per week with screen time (television and computer use) (1)
2. Forty percent of 3 month olds are regular viewers of screen time (1)
3. Nineteen percent of one year old's have a television in the bedroom (1)
4. Screen time for a toddler is associated with lower school achievement and decreased physical activity later in childhood (1)
5. Thanks to their parents, the average age a child gets a digital footprint is 6 months old (2)

A recent study from AVG indicated that more children are learning technology skills before life skills. Check out these numbers from a study of 2200 mothers of 2-5 year old children:

1. More kids can play with a smart phone than tie shoelaces (3)
2. More children can play a video game than ride a bicycle (3)
3. More children can open a web browser than swim unassisted (3)

What will this do to children with regards to the acquisition of motor skills and motor programs? If used in moderation, I am sure that the latest technology offers many learning opportunities for children. The key word is moderation. Considering the latest screen time statistics referenced above, moderation is obviously lacking already. Therefore, children's achievement of functional skills will most likely be delayed and some skills possibly eliminated all together. The arches of the hand can not develop properly by never picking up objects or manipulating items besides a computer mouse. Body awareness and motor planning are learned through movement. The tiny movement involved in the clicking of a mouse with the index finger does not offer any sort of motor practice or proprioceptive input. With the lack of three dimensions of computer technology, how will stereognosis develop? How will visual perceptual skills be effected? How will children develop the skills to button, zip, tie shoelaces and ride a bike? Unfortunately there's NOT an app for that! Correction there is an app for that...a referral for pediatric occupational therapy.

References:

1. Fact Sheet Kids and Screen. Commercial Free Childhood. Retrieved on the web on 4/16/2011 from <http://www.commercialfreechildhood.org/factsheets/screentime.pdf>
2. AVG. Would You Want a Digital Footprint Since Birth? Retrieved on the web on 4/16/2011 from <http://jrsmith.blog.avg.com/2010/10/would-you-want-a-digital-footprint-from-birth.html>
3. AVG. Forget Swimming and Riding a Bike - Young Children Today More Likely To Have Mastereed Computer Games. Retrieved from the web on 4/16/2011 from <http://free.avg.com/ww-en/news.ndi-106>

Ready, Set, Go!



What makes a child ready to achieve motor milestones? Many parents and therapists follow the typical developmental sequence of rolling, sitting, crawling, standing, walking and off they run. The theory is that if you build each skill upon the previous skill the child will move along the progression. The problem is the theory doesn't hold true. There are many more factors besides muscle development and control that play a role in achieving motor milestones.

Motivation: In order to move on to the next skill, a child needs to be motivated. This is clearly seen in typical development. For example, a 6 month old baby usually needs assistance to get into a sitting position. The baby is motivated to stay in the supported sitting position and works hard at maintaining an upright posture. The degrees of freedom available to the arms and hands increases significantly compared to the prone or supine position.

Socialization: A child may choose to attempt to try a new skill in order to experience a new social perspective. Sitting and standing change the eye contact of a child compared to supine or prone. A recent study indicated that independently walking infants spent significantly more time interacting with toys and mothers, made more vocalizations and directed gestures than age matched, crawling peers in a baby walker (1).

Novelty: Children have short attention spans. A change in position can result in a renewed attention span. The forces of gravity on the hands, postural muscles and legs change significantly based on different positions. Toys can take on new properties when the hands are freed up to play with them.

For example, I once worked with a 5 year old girl with quadriplegia. She required adult assistance to propel her manual wheelchair. She only tolerated a standing frame for short periods of time. We decided to try a mobile stander. Once in the mobile stander, the girl could actually propel herself around the room in standing. She not only tolerated standing now, she loved it. Her motivational level was increased. Her socialization increased once she could achieve level eye contact with her peers. The novelty of the mobile stander also added to her increased motivation.

In addition, I worked with a 7 year old boy with athetosis. He was unable to sit unsupported for longer than a few seconds but he could walk throughout the entire school without an assistive device. This boy's motivational drive to achieve independent walking was amazing.

Or how about a 5 year old boy who had the motivational drive to negotiate playground equipment to socialize with his peers but he was unable to walk long distances without his rolling walker. This boy taught me never to assume that a skill can not be achieved. He was able to climb ladders, walk across moving bridges and go down slides!

Therefore, the question arises should you wait to try the next motor skill in the developmental progression until the one before it has been mastered? Absolutely not! By using adaptive equipment or external support, children can benefit from the socialization and novelty factor of new skills. If the child recognizes these benefits, the internal motivation to continue to practice will help to drive the achievement of the new motor skill.

Reference:

1. Melissa W. Clearfield Learning to walk changes infants' social interactions. Infant Behavior and Development Volume 34, Issue 1, February 2011, Pages 15-25



Research Related to Cerebral Palsy

Pain and Cerebral Palsy

Pain Medicine published research on age related changes of pain experiences in individuals with cerebral palsy. Pain, touch sensitivity and quality of life was evaluated in 86 individuals with cerebral palsy compared to 115 healthy volunteers. The subjects were grouped by age: 6-10 years, 11-17 years and 18-30 years old. The results indicated that the individuals with cerebral palsy experienced more pain, reduced touch sensitivity and reduced quality of life compared to healthy volunteers. For the individuals with cerebral palsy age did not influence the results whereas with the healthy volunteers, pain, touch sensitivity and quality of life were influenced by age. In addition, age was the best predictor of current pain intensity in healthy subjects but that was not the case in the individuals with cerebral palsy. The researchers conclude that it is important to consider the pain levels of individuals with cerebral palsy even at an early age.

Reference: Riquelme, I., Cifre, I. and Montoya, P. (2011), Age-Related Changes of Pain Experience in Cerebral Palsy and Healthy Individuals. *Pain Medicine*, 12: no. doi: 10.1111/j.1526-4637.2011.01094.x

Assistive Technology and Test Scores

Assessment published research on the modification of tests using assistive technology. Sixty typically developing children ages 6-12 years old and 24 children with cerebral palsy were administered standard and modified versions of tests. The results indicated that the type of assistive technology used did not have a statistically significant effect on modified test scores. Quadrant forced-choice format tests had sufficient stability between standard and modified test versions. The researchers support the use of assistive technology and accessible procedures for some test instruments when assessing children with cerebral palsy.

This is important research to cite when we discuss modifying tests for children with cerebral palsy who use assistive technology. Teachers may need to take this into account when creating tests to even the playing field in the classroom.

Reference: Warschausky S, Van Tubbergen M, Asbell S, Kaufman J, Ayyangar R, Donders J. Modified Test Administration Using Assistive Technology : Preliminary Psychometric Findings Assessment. 2011 Apr 5. [Epub ahead of print]

Equine Therapy and Center of Pressure

The *American Journal of Occupational Therapy* published research on measuring the center of pressure (COP) during equine therapy. Using an electronic pressure mat, the study compared the center of pressure in 4 children without disabilities to 4 riders with cerebral palsy when riding. Significant differences were noted in anteroposterior range of COP motion, mediolateral range of COP motion, and mediolateral COP velocity. No significant difference was measured in anteroposterior COP velocity. The researchers concluded that measuring the center of pressure could be utilized as an indicator of core stability.

Reference: Clayton HM, Kaiser LJ, de Pue B, Kaiser L. Center-of-pressure movements during equine-assisted activities *Am J Occup Ther*. 2011 Mar-Apr;65(2):211-6.



Hot Topics

Posture Education

A recent study from the *International Journal of Sports Medicine* reports on postural education on daily habits in children. One hundred thirty seven children (average age 10.7 years) were randomly divided into an experimental group who received 6 sessions of postural education over the course of 6 weeks and a control group who did not receive any intervention. Following the 6 week intervention a sum score was established from the following: correct use of sofa, stooping correctly, take care to sit correctly at home/school and frequent posture change on chair at home/school. The sum score was significantly increased in the experimental group following the 6 week session and at 3 months post test compared to the control group. The researchers suggest that postural education in children may help to prevent low back pain later in life.

Reference: J. Vidal, P. A. Borrás, F. B. Ortega, J. Cantallops, X. Ponseti, P. Palou Effects of Postural Education on Daily Habits in Children *Int J Sports Med* 2011; 32(4): 303-308 DOI: 10.1055/s-0030-1270469

Sensation Following Forearm Cast Removal

A recent study in the *Journal of Orthopedic Science* reports on the short-term after-effects of forearm cast removal in children. Thirty three children (mean age 10 years old) experienced a forearm fracture. Seventeen children were treated with an above elbow cast and 16 were treated with a below elbow cast. Following removal of the above elbow cast, all 17 of the children reported a short term sensation that the hand felt weak and they needed the contra-lateral hand to help support it. In comparison, only one child with the below elbow cast reported this sensation. The researchers recommend that the children and parents should be informed of this possibility before removal of the cast.

Reference: Kalman Katz, Daniel Weigl, Tal Becker, Joseph Attias and Elhanan Bar-On Short-term after-effect of forearm cast removal in children *Journal of Orthopaedic Science* DOI: 10.1007/s00776-011-0054-2

Children's Ability to Control a Mouse

Here is some important baseline research on children's ability to control a computer mouse. The *Journal Computers and Education* published research comparing the ability to control a computer mouse at different age levels. The study looked at 221 Australian children between 5-10 years old. The results indicated the following:

- * speed and accuracy improved with age with the greatest improvements seen from 6-7 years old and 8-9 years old
- * performance plateaued between 9-10 years old
- * practice helped with speed and accuracy
- * smoothness of mouse use decreased with age
- * no significant difference between girls and boys

Reference: Orwin, Jessica. Practice more important than age in learning to use computer mouse. Retrieved from the web on 4/23/2011 from <http://scienceblog.com/42805/practice-more-important-than-age-in-learning-to-use-computer-mouse/>

On the Web...

Grant for Children with Disabilities

The CVS Caremark Grant is accepting application starting May 1, 2011. This grant provides support for children with disabilities.

"CVS Caremark Community Grants Program awards funds to nonprofit organizations for the following programs:

- * Programs targeting children with disabilities
- * Programs focusing on health and rehabilitation services
- * Public schools promoting a greater level of inclusion in student activities and extracurricular program
- * Initiatives that give greater access to physical movement and play
- * Organizations that provide uninsured individuals with needed care, in particular programs where the care received is of higher quality and delivered by providers who participate in accountable community health care programs"

If you are a pediatric therapist in a school based setting or other non profit organization this is definitely worth a look. They awarded 3.1 million dollars in 2010! Qualifying organizations are eligible for grants of up to \$5,000. Go to CVS Caremark for more information and to apply.

Evidence Based Guidelines for Pediatric OT and PT

Thanks to @otnotes on Twitter who tweeted about this EXCELLENT, FREE resource. The Cincinnati Children's Hospital offers evidence based care guidelines for many pediatric occupational and physical therapy interventions. The guidelines for each intervention describe the target population, target users, introduction (theory/ research), guidelines recommendations, decision tree charts and references. The topics include constraint induced movement therapy, idiopathic toe walking, serial casting, torticollis and more. In addition, they have produced Best Evidence Statements. These research based briefs offer recommendations regarding evaluation tools for clients with autism, interventions for children with hemiplegia, partial body weight supported treadmill training, wheelchair delivery and sensory processing deficits.

This is a gold mine of resources to guide your practice and offer research to back up therapeutic interventions. Check it out at Cincinnati Children's Hospital.

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Design A Game

Purpose: To encourage sensory motor activity, body awareness, motor planning and to foster creativity

Materials: various loose parts to create a game with such as blocks, balls, ropes, etc.

Activity: Provide each child playing with a bag or box of loose parts. Here are some examples:



Give the child at least 5 minutes to use all of the parts in the box to create a game. For example here is what some children came up from the above boxes:



Try to knock the blue circle chip off without knocking over the shovel.



Try to stuff the objects around the block to make the box level.

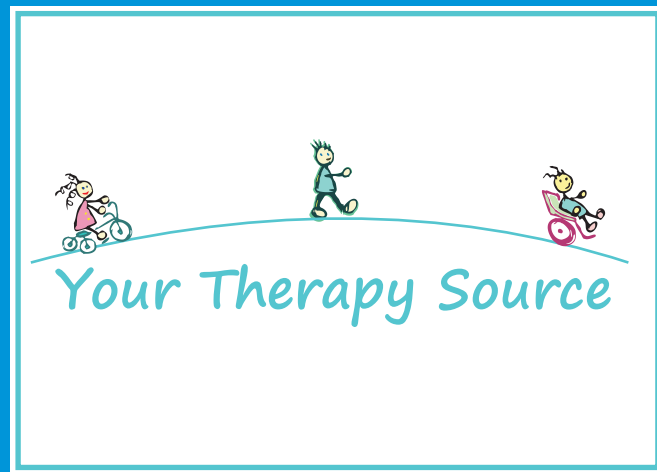


Try to throw the ball into the box without knocking into any other items.

Once all the games are ready, the children can take turns trying each other's games. Try placing different materials in the boxes such as small objects (i.e. dice, spinning tops, wind up toy, checkers, etc.) to practice fine motor skills or outdoor objects (i.e. sidewalk chalk, rock and stick).

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