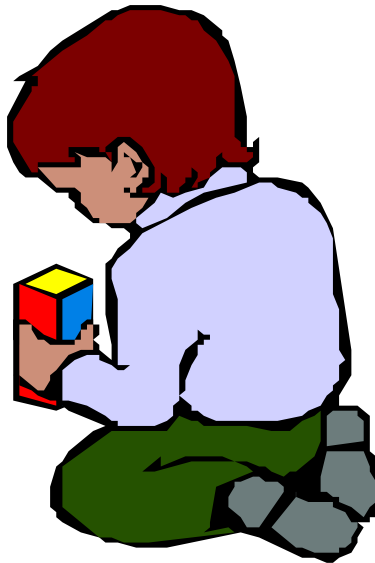


Brain Research in Early Childhood: A Primer for Caregivers and Administrators

Section Three: Brain Growing Activities



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March 2001

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Where Does it Happen in the Brain?

You have probably read an article or seen a TV show that illustrates how experiences your baby has now affect how her brain grows. But do you know that your child's brain has special areas for different abilities? Do this activity to discover important sections of the brain.

First, put your hands behind your head. This area is the vision center of your brain.

Move your hands down to where your neck just begins, where you feel two bony bulges. This is the cerebellum that is responsible for motor coordination and balance.

Bring your hands to your head and you have found the center of the back of your head and you have found the brain stem that is responsible for automatic bodily functions like your heart beating, breathing and digesting your food.

Now put your hands on your head as if you were putting on a motor sensory area, things like feel the pressure of your foot on the floor as you walk, or the position of your tongue in your mouth as you say particular sounds.



the center of the back of your head where you find the brain stem that is responsible for automatic bodily functions like your heart beating, breathing and digesting your food.

on your head as if you were putting on a headband. This is the motor sensory area, things like feel the pressure of your foot on the floor as you walk, or the position of your tongue in your mouth as you say particular sounds.

The center for hearing is conveniently located just above your ears.

To find taste and smell, touch the bridge of your nose. The brain center for taste and smell is protected within the brain. Also deep within the brain is the limbic system that is responsible for emotions.

And finally, touch your forehead. That is the frontal lobe that is responsible for higher thinking skills such as solving problems.

Adapted from: Eisenberg, L. (1999). Experience, brain, and behavior: The importance of a Head Start. *Pediatrics*, 103 (5), 1031.

Brain Growing Activities

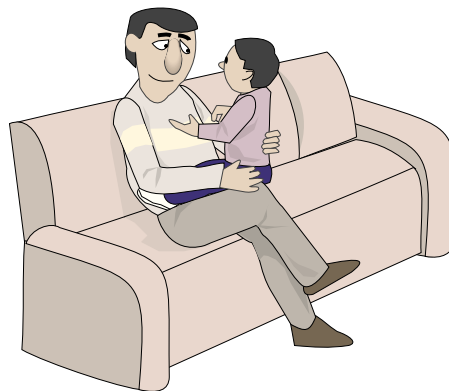
1. Stimulate vision with mobiles and posters.
2. Stimulate hearing with soothing music.
3. Entertain babies with a variety of new sensory experiences.
4. Provide child-proofed areas for exploration (drawers, sandbox).
5. Provide lots of gentle physical affection.
6. Comfort a baby whenever he or she is hurt, frightened or insecure.
7. Provide appropriate discipline.
8. Provide a language-rich environment by:
 - √ Reading to your child;
 - √ Labeling the environment;
 - √ Talking to your child;
 - √ Making up stories with your child; and
 - √ Singing lullabies, kiddie songs, and opera!
9. Help children to see and listen in a more discriminating manner. Talking to them about what they see in the pictures of the books you are reading them or the different instruments they hear playing in a classical piece of music will help them develop this skill.
10. Provide a calm environment and a regular schedule.



Adapted from: Diamond, M.C., & Hopson, J.L. (1998). Magic trees of the mind: How to nurture your child's intelligence, creativity, and healthy emotions from birth through adolescence. New York: Plume.

Guidelines for Brain-Building Play

1. Make sure the child is actively interested and involved.
2. If the child seems passive, start a simple activity and then try to “pass it over.”
3. Remember that an activity must be repeated many times to firm up neural networks for proficiency.
4. Give the child positive encouragement for active exploration and investigation which builds motor and sensory pathways.
5. Encourage attempts at new challenges (in a child-proofed environment).
6. Keep playpen time or other restraints to a minimum.
7. Provide windows for children to look out.
8. Provide low open shelves where a variety of toys, objects, and books are always accessible. Avoid boxes with jumbled toys.
9. Bring in new toys or objects one or two at a time.
10. Provide an attractive environment with bright colors which can be varied to attract visual attention.
11. Call attention to specific objects or aspects of the environment, (help infant to focus on one sense at a time).
12. Link language to sensory input. Talk about what is happening.



Adapted from: Healy, J. (1994). Your child's growing mind: A guide to learning and brain development from birth to adolescence. New York: Doubleday.

Connect the Neurons

Take this simple test. The following two pages contain a series of numbers randomly placed on a piece of paper. Both pages are the same. Give yourself 30 seconds to connect as many numbers as possible.

After completing the first page, reset the timer and take the test again. Did the number of connections you made go up?

Repetition is important to learning, no matter what the age of the individual. By repeating the process involved in learning or the concept being learned, the neurons (nerve endings in our brain) form stronger, more solid connections. That is why it is not as necessary to concentrate when driving home from work as it is when trying to find an address.

Young children need the same type of repetitive experiences to be successful learners. For example, speaking aloud the name of colors in a toddler's environment each day will help the child make the connections necessary to put together the visual cue of "red" with the spoken word. Such learning happens when repeated experiences occur in multiple settings and different modalities are used.

Benham, T., & Lindeman, D. P. (2001). *Brain research in early childhood: A primer for caregivers and administrators*. Parsons, KS: Kansas University Center on Developmental Disabilities.

Hussey-Gardner, B. (2000, June). *Developmental interventions with families and their children: Helping parents make a difference in the brain development of their infants, toddlers and preschoolers*. Presentation at the Kansas Inservice Training System Summer Institute, Wichita, Kansas.

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