How can so much fun build my child’s brain?

Researchers are learning more every day about the basic architecture of a child’s brain. Think about it like the construction of a house. You start with laying the foundation, then once the cement is dry and strong you can begin to build on top of it. You can frame the rooms, you can wire the electrical system and put the stairs, windows, and a roof in a predictable sequence. Building a brain is just like building a house—early experiences shape how the brain gets built. A strong foundation in the early years insures that kids will be ready for school experiences. A weak foundation will mean that kids will need extra help, intervention, and not be as ready as other kids to be successful in school.

Try these at home!

• **“Serve and Return”** Both a child’s genes and a child’s experiences shape brain development. The active ingredient is sometimes called “serve and return.” Like the process of serve and return in games such as tennis and volleyball, young children naturally reach out for interaction. These activities actually “wire” the brain by creating connections. You can play this healthy brain building game by always responding when your baby or toddler “serves” you an interaction like baby babble, a smile, a wave, or a laugh. Get the interactions going back and forth, like a game of tennis.

• **Limit toxic stress.** Chronic stressful conditions such as extreme poverty, abuse or severe maternal depression, what scientists now call “toxic stress” – disrupt the architecture of the developing brain. This can lead to lifelong difficulties in learning, memory and self-control. Stress is tolerable when cushioned by loving relationships and safe environments.

• **Pay now or pay more later.** When you understand the sequence and process by which brains are built, it’s easy to understand why it’s wiser to start every child out with a strong foundation. Trying to change behavior or build new skills on a weak foundation requires more work and is less effective than providing brain building experiences early in life.

Things to say:

One strategy for asking your child great questions is focusing on “what” instead of “why.” When you ask “why” questions, it implies there is a correct answer and the child is being tested. For example, if you ask, “Why is the magnet sticking to that kind of metal?” you may be just as unable to answer that question as the child is. But when you ask “what” questions, you’re starting a conversation and exploring right along with your children. “What” questions focus on what is happening, what you are noticing, and what you are doing—and those answers are right in front of you and your kids. By focusing your questions on what kids have observed and noticed, not only are you helping them develop valuable communication and observation skills, but you are also building their confidence by giving them questions they can answer as experts.

• What happened there?
• What did you try?
• What did you change about that?
• What are some of the ideas you had that you haven’t tried yet?

Read All About It:

This is the site of Harvard University’s Center on the Developing Child. The mission of the Center on the Developing Child is to leverage science to enhance child well-being through innovations in policy and practice. [http://developingchild.harvard.edu/](http://developingchild.harvard.edu/)
This website is sponsored by the Massachusetts Department of Early Care and Education and the United Way of Mass Bay and the Merrimack Valley. Brain building is an investment that yields high returns. An investment in the economic prosperity of everyone in Massachusetts. Learn about the science of brain building and why our future depends on it. [http://www.brainbuildinginprogress.org/](http://www.brainbuildinginprogress.org/)
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Gross motor skills are the physical abilities usually acquired during infancy and early childhood as part of a child’s motor development. By the time they reach two years of age, almost all children are able to stand up, walk, climb, and run. These skills are improved and better controlled throughout early childhood, and continue to grow into adulthood.

Brain-Building Connection
Movement is deeply linked to cognitive learning and exercise improves memory. Motor skills help children not only expend energy but also send that energy to their brains.

Try these at home!

- **Create an obstacle course.** Find an empty space at home and fill it with cushions from the sofa or chairs. Find some recycle items like large boxes (the bigger the box the better!). Use an old blanket or sheet to throw over the top of a table or chairs to create a tunnel or “roof” for crawling through or under. Use a Hula Hoop to crawl through or ladders and step stools to make the obstacle course more challenging. Practice the words in, out, over, under, around and through.

- **Have a parade!** Perhaps you have a drum, shakers, a tambourine, a cymbal or other percussions instruments. If not, you can make a drum and instruments with pots, pans, and wooden spoons from the kitchen. March around the house carry instruments, flags (make them out of old sheets and markers or use scarves), and sing songs that you know and love.

- **Play games.** Head, shoulders, knees and toes, knees and toes. Do you know that song? Do the hokey pokey, some jumping jacks, hopping, skipping and jumping. Play Simon Says. When “Simon says it” kids do it, if you only say, “Touch your head” kids do not touch their head or they are out of the game. Then play “Simon says the opposite!” If you say, “Simon says touch your head,” you want the kids to do the opposite and touch their toes.

Things to say:

- “I like the way you are moving your body!” Some encouragement will help even a shy child dance, wave their arms and climb around.

- “Can you touch your toes?” Create challenges for your child using his body. At the park, you might encourage her to climb something she has not climbed before or slide down the big slide.

Read All About It:

*Music and Movement – Learning Through Play*, Published by Scholastic, Inc.

*How Your Body Moves (Your Body at Work)*, by Carol Ballard
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One of the most essential experiences in shaping the architecture of the developing brain is called “serve and return.” Like a tennis or volleyball game, this is the interaction between babies, very young children, and the significant adults in their lives. Young children naturally reach out for interaction through babbling, facial expressions, and gestures and adults respond with the same kind of vocalizing and gesturing back at them. This back-and-forth process is fundamental to the wiring of the brain, especially in the earliest years.

Brain-Building Connection:
The basic architecture of the brain is constructed through a process that begins early in life and continues into adulthood. The debate about “nature” vs. “nurture” is no longer. Instead, it’s not a competition between the two, it’s a dance!

Try these Activities!

• **Return the serve!** As babies begin to learn to talk, they test their mouth and tongue and voice by forming sounds. Encourage them to practice! Answer their babbling in full sentences, as though you were having a real conversation with them. Modeling conversations in this way not only encourages your child to practice forming words, but will also help your child as they start constructing full sentences.

• **Teachable moments.** As they get older, every moment you spend with your child is an opportunity to learn a new word, practice counting, or master their knowledge of shapes and colors. You can kick-start the serve and return process, as well, by:
  - Point out the fruits and vegetables in the market. What color are they? What ones do we want to eat?
  - Cook with kids. Ask them to pour, stir and measure.
  - Read to them. Books, books, and more books.
  - Play games. Peek-a-boo and patty-cake.
  - Move your body. Go outside. Wrestle around!

Things to say:

As you play with your child, ask a “what” question:

• What happened there?
• What did you try?
• What did you change about that?
• What are some of the ideas you had that you haven’t tried yet?

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