

How Your Child Learns Best

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It used to be optional for parents to augment their children's classroom education through museum classes, piano lessons, club sports, or formalized academic time together. That was before education became the political football that continues to be fumbled. Now, unless parents become active partners in their children's education, this generation of students could be the most tested and least educated produced by our public education system since its inception over a century ago. Unless parents work with children to augment their classroom learning experiences students will graduate high school remembering some random facts, but without the ability to think or the strategies to learn.

□ Public school funding and educators' salaries are now directly tied to student performance on standardized tests. The result is a factory style, teach-to-the-test standardization of public school curriculum that sacrifices the most engaging school activities to devote more time to rote memorization. As a parent, it now falls to you to enrich and expand your children's learning experiences and them to help them find their strengths, interests, and talents outside of math and reading (which are where 90% of the classroom emphasis is being placed in direct proportion to the emphasis of these two subjects on the standardized tests).

□ With the narrowing of curriculum to the testable aspects of reading and math, your children will have fewer opportunities to discover and nurture their other abilities and gifts. They will leave high school defined almost exclusively by class ranking, grade point average, and SAT or other standardized test results. Not only do you need to help your children enrich the experiential aspects of their education, but they also need your help to keep up with the competition to be as successful as possible on the standardized tests that are becoming an increasingly restrictive window through which college and job candidates are evaluated.

□ Parents today have the double challenge of helping their children sustain the love of learning they had when they started kindergarten while also helping them learn and practice the memory enhancing strategies that result in greater success on standardized tests. Fortunately, brain research-based techniques and activities are available to help you take on these added tasks of teacher, coach, counselor, activities director, and study partner. You can help your children grow more dendrites and produce more neurotransmitters while you shop with them for the week's groceries, read food labels, discuss misleading billboards, or analyze your dog's behavior on his afternoon walk. The brain changes in response to information processing and these changes can become permanent memories when you provide the bridges that link your children's classroom studies to their interests and to experiential learning beyond the classroom walls.

The First Bump in the Road □

With all your great intentions to expand your children's learning, the first roadblock is time - not only yours, but theirs. As school is becoming more regimented and focused on rote memory repetitive activities, by the time your children come home with their packet of more homework worksheets to do, how can you motivate them to add more learning to their frustrating school day? Further limitations come from the extra curricular activities that you need to schedule for them after school, from soccer to scouts, because the arts and sports are being sacrificed as public

schools scrounge for more time to devote to the academic material that will be assessed on the standardized tests that determine their funding.

□ The goal is to engage your children in learning enrichment and long-term, rather than short-term (rote), memory-building activities. Before children can make long-term memories or learn at a deeper level than rote memorization, something or someone must capture their attention. Neuroimaging and brain mapping studies reveal the structural changes in the brain that occur when newly learned information is retained in memory storage areas. It was once believed that new brain cells did not grow after birth. PET and fMRI scans show brain metabolism in real time as the brain actively processes information. These scans now show that the growth of brain cell connections, such as dendrites, occurs in all the lobes of the brain throughout life as long as learning is sustained. A recent study demonstrated increased growth of brain cell networks in the occipital lobes (vision and visual memory centers) after subjects learned and practiced juggling.

□ Similar imaging studies demonstrate that memory storage is more efficient when the new information is related to prior knowledge, personal interest, and positive emotional experiences. These relationships of new information to brain cell circuits that already exist build the longest lasting of new memories - relational memories. The more memories in the storage bank, the more neuron circuits there are to connect with the new information. Learning consists of reinforcing the connections (pathways, circuits) linking neurons in the brain to one another. Relational memory takes place when children learn something that adds to what they have already stored in memory; they attach the new information onto "maps" or circuits already present in their brains. PET scans actually show that when children are given new information their brains activate their stored memory banks. Their brains are seeking relationships or connections between the new information and stored memories of past knowledge or experience.

□ In a similar manner, for children with attention focusing difficulties. Each time they focus their attention they are activating the brain's alerting and focusing pathways. This repeated stimulation of these pathways makes the neural circuits stronger and increases their ability to actively direct their attention where it is needed. Children will certainly need this strengthening of attentive focus if they are to remain focused on drill and kill activities at school and then come home with any attention left to devote to more active, multidimensional learning activities with you.

Create Enthusiasm for Learning □

One of the reasons the first day of school is exciting for most students is because there is novelty. It can be the new teacher, new classmates, different bulletin board, new textbook, or even a change of view out the classroom window. Enthusiasm is generated when children are presented with novelty and find creative ways to explore or connect with the new material and are inspired by it. Whenever you can generate this awe and sense of wonder, your children will be pulled into the school lessons they bring home and they will be motivated to connect with the information in a meaningful way.

□ In general, the goal of helping your children build better brains is achieved by bringing their classwork to life beyond the classroom walls. In that way home-work is not necessarily done in the home, nor is it considered work in any negative sense. Consider how surprise and novelty just described could light up your children's brains and illuminate the pathways to memory storage. Starting a study or homework session with an unanticipated demonstration, having something new/unusual in the

study area, or going some place unexpected for the homework or review session will spark your children's attention and curiosity. It can be anything from playing a new song connected to the subject on the drive home to stopping at the museum, library, or used book store to browse through the subject area of a new unit of history or geography.

□ In a study session at home surprise can be your wearing a funny hat, cape, or costume. If children sense novel experiences, from new objects, places, or even a story you tell or photo you show about your past or their childhood, the novelty (and enthusiasm your voice) will make it more likely that they will form lasting memories of information that follows the surprise or novel experience.

□ To take advantage of their heightened state of alertness following a novel experience, give your children opportunities to interact with the information connected to the surprise. The goal is for them to actively discover, interpret, analyze, process, practice, and/or discuss the material to go beyond the limited spoon-fed for rote memorization exposure they have to the information at school. You can help bring water to the dry sponges of their texts and worksheets so the information they study will move beyond short-term memory into the long-term relational memory centers of their brains.

Journals are Notebooks With Soul □

Even though children may be required to keep notebooks (more often these are "rote" books) at school, your children can create and decorate historian journals, science detective casebooks, or ship captain's logs to add interest and depth to what they are studying at school. After a learning experience (at school, with you, from reading a school text or literature book) the information will be more emotionally significant and therefore form more permanent memory associations if it recorded in a personally meaningful way. You can ask your children's teachers if they can substitute these logs or journals for assigned notes. The idea is for them to log or journal the facts about new information they learned and include their personal responses, from poetry, sketches, Internet downloads, or pictures cut from magazines. This is much more fun, meaningful, and therefore memorable than regimented note taking. They can respond like a scientist, reporter, archeologist, detective, or historian and journal their notes to questions such as "What did I see/hear/smell? What did I learn? What surprised me? What do I want to know more about? What did this reminds me of?"

New Ways to Use Available Material □

When your children's units of study or homework are more passive, such as reading a section of a textbook, it makes the reading more active if you discuss the topic together. You can select some of the text's more thought-provoking end of the chapter questions, the more open-ended ones that prompt connections to things you know your children are interested in or things they have done, seen, places they've been, or people they know. You can use these questions as well as any pictures or timelines in the book to stimulate your children's personal connections to and promote curiosity and interest in the material they read.

□ For example, if the science book asks, "What is the difference between a solution and a mixture?" your child can read the definitions and then predict which items in your refrigerator are mixtures and which are solutions. Then, he can investigate which salad dressings fit the definition of mixtures (oil and vinegar mixtures that need to be shaken) and which are solutions (ranch, thousand island, and others that don't separate out after standing so they don't have to be shaken to

recreate the solution state).

Visual Imagery□

Suggest that your children visualize the information in a wildly exaggerated manner or visualize themselves in the action. They can visualize the historic event, scientific discovery, or literature book chapter with them in the scene playing a big role in the movie of their mind's eyes as the historical or scientific event occurs.

□After giving imagination free reign, more of their brains can be engaged if they put their visualization into words, diagrams, or pictures. They can describe their images to you, write them in words, or draw sketches. Just as athletes may visualize a move before they execute it, children can be encouraged to visualize the biological process as it is explained in the textbook. When they draw diagrams, create models, and engage their sight, hearing, smell, touch or movement they are making connections between the new information and something they already know. They are engaging multiple brain pathways and increasing the likelihood of memory storage and effective retrieval.

When memory and retention brain research-based strategies are applied to your children's learning, these strategies will not only drive the learning process, but also allow you to energize and enliven your children's minds. As the research continues to build, it will be up to education professionals to develop and utilize new strategies that bring the brain-based research to students. If the school system lags behind at this important task, more responsibility will fall to you as a parent to meet this fascinating and exciting challenge.

Read more information like this that is organized so you can find the best strategies to engage you children through their learning strengths, subject topic, and grade level along with suggestions for the most common challenges in all subjects, from fractions to writing papers, in Dr.

Willis' book for parents,

How Your Child Learns Best: Brain-Friendly Strategies You Can Use to Ignite Your Child's Learning and Increase School Success

published by Sourcebooks 2008. Available on amazon.com and barnesandnoble.com

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Dr. Judy Willis is a neurologist and credentialed teacher, with a Masters of Education, who teaches at Santa Barbara Middle School. Dr. Willis combined her neuroscience knowledge and years of classroom experience to become an authority in the field of learning-centered brain research. She has written five books on the subject and gives national and international presentations. ***Her most recent book for parents How Your Child Learns Best: Brain-Friendly Strategies You Can Use to Ignite Your Child's Learning and Increase School Success***, was published by Sourcebooks in 2008. This winter Great Potentials Press will publish *Inspiring Middle School Minds: Gifted, Creative, Challenging*, for parents and teachers of middle school parents. You can find more articles and topics of interest when you visit Dr. Willis' Website at www.RADTeach.com.