



Talking to Parents About BrainWare Safari

For many parents, the concept of cognitive skills and the potential for their child to develop his or her underlying learning skills will be new. The following descriptions of the some of the basic concepts related to cognitive skills may be helpful in your discussions:

Cognitive Skills...are “thinking” or mental processing skills. They allow us to take in, process, understand and apply information. Cognitive skills can be organized into six categories. BrainWare Safari develops the skills most critical for learning in all six categories.

- **Attention skills** relate to the “executive control” function of our minds, for instance, the ability to focus on one input without being distracted, as well as the ability to pay attention to two activities at the same time, such as taking notes while listening to the teacher. Good attention skills also enable us to move from one activity to another with ease and to focus on the most important information with which we are presented, for instance, to identify the key clues in a math story problem.
- **Visual processing skills** include the various skills related to processing and making sense of visual inputs. Examples include the ability to interpret the concepts of “left” and “right,” to process a volume of visual information at a glance, and to get meaning from information received sequentially – all critical for reading. Strong visual processing skills enable us to recognize patterns, such as in a science experiment or in analyzing a set of historical facts, and to distinguish specific features or forms from a distracting background, such as identifying a bird in a tree.
- **Auditory processing skills** are similar to visual processing skills, but deal with information that is heard. These skills include the ability to distinguish differences in sounds, such as the inflection in the voice for a question versus an exclamation, as well as the ability to identify the most important sounds, just as the conductor’s tapping his baton signals the musicians to cease warming up and prepare to perform. Good auditory processing skills allow us to learn from what we hear and follow a series of directions.
- **Sensorimotor integration skills** include the ability to combine sensory skills with motor activity, such as hand-eye coordination, rhythm and timing. These skills directly relate to our ability to use our eyes and hands together efficiently, as in writing, drawing or typing.

- **Memory skills** include the ability to manage information and retain it for different lengths of time. Long-term memory refers to our abilities to permanently store information and retrieve it when needed, such as math facts, locker combinations or grammar rules. Working memory is the ability to hold information in the mind while performing a mental operation, such as remembering the alphabet while alphabetizing spelling words. Short-term memory is subconscious memory where the brain decides what information to discard or what to retain in working memory, within 1/1000 of a second. Sequential memory refers to the ability to recall a sequence of information, in order, such as remembering the historical series of events leading up to the Revolutionary War or what happened at the beginning, the middle and the end of a story. Memory skills also allow us to remember the relationships between bits of information and keep them straight, such as learning a foreign language or solving an algebra problem. Memory is the essence of learning, because information that is not remembered has not been learned.
- **Thinking skills** involve abilities such as logic, reasoning, problem solving, conceptual thinking and the ability to make decisions quickly. These skills, in which information is manipulated and applied, include such processes as planning, for example, how to tackle a multi-part science experiment; concept development, such as deductive reasoning; and the ability to use thinking skills quickly to make correct decisions, such as in responding to questions on a test.

Cognitive Loading...is a process of placing multiple demands on the brain at once, so its processing skills become more efficient and “automatic.” Mental processes then can occur subconsciously and without effort. The brain can only perform one skill consciously at a time. For example, a writer thinks only about the ideas in the sentence being written, not about how to type or form the letters with a pen, or how to spell the words correctly, activities that have been mastered and are performed subconsciously. An analogy is learning to ride a bike. At first, the rider has to think about every action: pedaling, balancing, steering, speed. Once the skill has been mastered, the rider bikes automatically and thinks only about the destination, the scenery, and can attend to safety and other traffic. Cognitive loading is purposefully built into BrainWare Safari.

Hierarchical Learning...is a concept introduced in 1949 by Dr. Donald Hebb of McGill University, which says that cognitive skills are built in a learning pyramid. In the learning pyramid, basic skills, such as gross and fine motor skills and basic language skills must be acquired before higher-order skills, such as thinking, reading and social skills. If fundamental skills are missing or poorly developed, more advanced skills cannot develop. For example, if attention skills are poorly developed, the acquisition or perceptual processing and memory skills will be impaired. BrainWare Safari develops basic learning skills that serve as the foundation for more effective learning and higher-order thinking skills.

The Brain as a Self-Organizing System...The human brain develops its own structures and connections in response to sensory experience, guided by genetic instruction. The processes of self-organization in the brain seek to optimize the brain’s performance in dealing with the functional demands placed on it. This experience-dependent self-organization is not a passive imprinting process but an active dialogue between the brain and its environment. What happens in any part of the brain potentially affects every

other part. When new abilities are developed, the brain reorganizes itself into more effective patterns of functioning. An effective way to improve the quality of thinking, intellectual performance and academic achievement is to help the brain develop new cognitive skills that will reorganize it into a more effective way of functioning, learning and problem solving.

Tips for Parents

Here is some of the information that we have found to be helpful for parents working with their children at home on BrainWare Safari. You may wish to modify or add instructions to accommodate the particular program you are recommending to the family.

- We recommend using BrainWare Safari 30 to 60 minutes, 3 to 5 days a week, over 10-12 weeks.
- Effort counts! The amount of time and intensity that your child gives to BrainWare Safari are more important than completing all the levels in all of the exercises.
- Finishing levels is rewarding, but rest assured that your child is benefiting from the program even when (in fact, especially when) it becomes challenging.
- When the program gets hard for your child, that's when it's really helping to develop their skills. Be encouraging and supportive!
- Encourage your child not to spend more than 15 minutes on any single exercise at a sitting. If they are having difficulty with one exercise, encourage them to move to another exercise. Since many exercises develop the same skills in different ways, a child will often later come back to an exercise they found difficult and have "the light bulb go off" – suddenly it is much easier.
- If your child has difficulty with "right" and "left" directions, have them work in ***Iguana Lookout*** before trying ***Arrow Point Bridge***. They can even use the Practice Mode in ***Iguana Lookout*** until they're comfortable with left and right arrows. Then they'll be more ready for ***Arrow Point Bridge*** where the arrows disappear after they are displayed.
- ***Rhythm Ribbet*** is a good exercise to work on early on because it helps develop rhythm and timing skills that will be called in a number of other exercises.

For more tips and information on BrainWare Safari, check the Travel Guide or www.BrainWareforYou.com.



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