

Movement Matters!

An Introduction to



A 2.5-hour introduction to making learning easier
through movement

Joyfully Presented by

Katy Held
Movement and Learning Specialist
Licensed Brain Gym® and Bal-A-Vis-X® Instructor/Consultant
www.learningheart.com

Phone: 734-649-7457
E-mail: ktheld@comcast.net

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Movement Matters! An Introduction to Brain Gym®

Agenda

- Introductions
- What is Brain Gym?
 - a. Background and History - Paul Dennison, Ph.D.
 - b. Research
- Get Ready to Learn by doing PACE (Positive, Active, Clear, and Energetic)
Pre-Activity
PACE
 - a. Water
 - b. Brain Buttons
 - c. Cross Crawl
 - d. Hook-upsPost-Activity – What differences do you notice?
- Brief Overview of the Brain using the Triune Model
- Three Dimensions of Learning
- Learning Profiles: Dominant Eye, Ear, Hand, Foot and Brain
- Brain Gym's Three Dimensions of Movement
 - a. Focus
 - b. Centering
 - c. Laterality
- The Most Applicable of the 26 Brain Gym movements (plus some modifications)
 - a. Focus Dimension Exercises
 - b. Centering Dimension Exercises
 - c. Laterality Dimension Exercises
- Support and Tools
 - a. Ways to use Brain Gym – in the classroom and at home
 - b. Options for learning BG – Repeating, Other Courses, Individual sessions
 - c. References: Books and Music
- A bit of Bal-A-Vis-X – **BAL**ance, **Auditory**, **Vi**sion **eX**ercises done in *rhythm*, using racquetballs and/or sandbags, often while standing on a balance board

What is Brain Gym®?

Brain Gym is a system of simple movements that relieve **stress** naturally and quickly enhance brain function.

Simply put, "*Brain Gym is moving your body to wake up your brain.*"

Brain Gym was developed by Paul Dennison, Ph.D in the early 1970s.

It is practiced in over **88** countries, with courses translated into **15** languages.

How does Brain Gym facilitate learning?

Brain Gym integrates the **left** and **right** hemispheric functions of the brain.

It draws out **innate** gifts and talents and brings about "**whole-brain**" learning.

It controls emotional **stress** that is so often created in new learning situations.

Brain Gym addresses the **physical** components of learning -- the **auditory, visual, fine motor** and **postural skills**.

The Brain Gym® system:

- Increases long- and short-term memory
- Improves and accelerates learning, condenses the learning cycle.
- Increases reading and math skills
- Creates positive changes in attention and the ability to focus
- Increases self-confidence
- Supports behavioral management by reducing stress quickly

Brain Gym prepares the brain to **learn**. It **enhances** rather than replaces other programs or curricula. The program can be used individually or in groups.

Brain Gym movements can be done occasionally, routinely, or even daily. They are safe, simple, and only take a few minutes to complete. Individuals need no special space or equipment.

Basic Brain Gym® Concepts

- 1. Physical Movement Stimulates Brain Function.** Specific body movements stimulate particular aspects of brain functioning. Brain Gym® movements are designed to activate different cognitive functions, including communication, comprehension, and organization.

- 2. Stress Inhibits Learning.** Stress prepares the body for fight/flight (aggression/fear – brain stem) reaction. As a result, activity in the limbic system, where memory occurs, and in the neocortex of the cerebrum, where abstract thinking and reasoning take place, is minimized. Also, the stressed learner can go into a Homolateral learning state, in which the dominant brain hemisphere takes over most mental processes. **Under stress, the non-dominant hemisphere shuts down up to 75 or 80%.** As a result, the learner no longer has full access to the functions of the non-dominant hemisphere. One-sided learning occurs, thus handicapping performance.

- 3. Learning Blocks Can Be Released by Brain Gym®.** Learning blocks can be specific or general. We are all “learning-blocked” to some extent, having “switched off” for certain tasks. Brain Gym® movements consciously activate the whole brain/body system, lessening the fight/flight reaction. When learning is easy and stress-free, the learner regains his/her innate interest in learning, and is again motivated to achieve learning goals.

- 4. Noticing is a Personal Feedback Mechanism.** All new learning depends on the ability to notice what works and what doesn’t work in the mastery of a skill. When the learner becomes aware of various learning blocks (notices), and then can take action through effective tools (i.e., Brain Gym®) that improve performance, self-esteem is heightened. The tools gained through the Brain Gym® processes show the learner how to interact with and control his or her response to the learning environment.

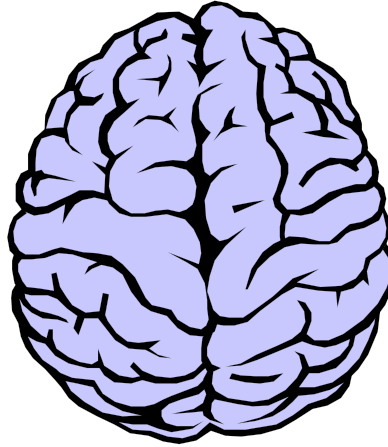
When to Use Brain Gym® for Yourself or a Student

Listed below are several situations that may cause you to feel “switched-off” or stressed. Circle the circumstances that most often create a challenge for you in your life.

Performance anxiety	Lack of communication	Feelings of self doubt
Lack of confidence	skills	Poor athletic performance
Poor memory	Poor balance	Poor coordination
Lack of focus	Giving up	Feelings of intimidation
Lack of energy	Fear of failure	Feelings of pressure:
Feelings of frustration	Critical of others	from others, from home,
Over-analysis	Fear of success	from work
Feelings of anger	Critical of self	Poor comprehension
Bothered by distractions	Lack of concentration	Overly concerned about
Lack of organization skills	Poor physical performance	others

7. “Brain Gym Handbook” by Paul E. Dennison, Ph.D. and Gail E. Dennison

Functions of the Left and Right Hemispheres (Logic and Gestalt)



Logic (Left)

- Processes from pieces to whole
- Parts of language
- Syntax, symantics
- Letters, printing, spelling
- Numbers
- Techniques (sports, music, art)
- Analysis, logic
- Looks for differences
- Controls feelings
- Language oriented
- Planned, structured
- Sequential thinking
- Future Oriented
- Time Conscious
- Structure Oriented

When Under Stress

- Tries harder, lots of effort
- Without results
- Without comprehension
- Without joy
- Without understanding
- May appear mechanical, tense, insensitive

Gestalt (Right)

- Processes from whole to pieces
- Image, emotion, meaning
- Rhythm, dialect, application**
- Estimation, application
- Flow and movement*
- Looks for similarities
- Free with feelings*
- Prefers drawing, manipulation**
- Spontaneous, fluid**
- Simultaneous thinking**
- NOW ORIENTED
- Less time sense
- People Oriented

When Under Stress

- Loses the ability to reason well
- Acts without thinking
- Feels overwhelmed
- Has trouble expressing
- Cannot remember details
- May appear emotional or spaced-out

Source: The Dominance Factor: How Knowing Your Dominant Eye, Ear, Brain, Hand & Foot Can Improve Your Learning,
Carla Hannaford, p. 20.

Research Results

For over 30 years, many research and field studies have been conducted regarding Brain Gym® and Educational Kinesiology. Here are samples of some of the more important and/or informative studies. If you are interested, more detailed findings can be found at www.BrainGym.org or call (800) 356-2109.

Brain Gym and Its Effect on Reading Abilities

Cecilia (Freeman) Koester, M.Ed. © 2000

This study used a nonequivalent control group design. A total of 205 students were assigned to either a Brain Gym or a control group. Throughout the 1998-99 school year, 12 teachers incorporated Brain Gym in the classroom curricula so that the students and teachers did a minimum of 15 minutes of Brain Gym per day. Equal samples of students were randomly selected for the Brain Gym group and the control group (which did not use Brain Gym), and their test scores were compared.

The results indicated that those children in the Brain Gym group improved their reading abilities -- as measured by a standardized test -- twice as much as did those in the control group.

The Effects of PACE on self-reported anxiety and performance in first-year nursing students

Jan Irving, Ph.D. © 1996

A six-minute intervention comprised of four activities, a sequence known as the PACE process in Brain Gym® / Educational Kinesiology, produced significant results when investigated by Jan Irving for her doctoral thesis. A multiple baseline design was used over a five-week period.

The results indicated a 69.5% reduction in self-reported anxiety and an 18.7% increase in performance on skill tests. This is the first experimental research to use PACE, a learner readiness profile, as the isolated variable.

The Effects of Brain Gym with Special Education Students in Grades Three Through Five

Carla Hannaford, MA. @1990

In 1989-1990, Carla Hannaford, M.A., an educator and neurophysiologist, implemented a yearlong, one-group pre-/post-test study in the Hawaii School District. Hannaford incorporated Brain Gym in the classroom with 19 fifth graders in Special Education. Pre- and post-tests were completed using the Brigance Inventory of Basic Skills.

Post-tests showed a one- to two-year academic growth for all students on the reading and comprehension testing, and growth of one or more years for more than 50% of the students on math scores -- greater results than might have been expected for Special Education students. Behavior patterns also improved.

Notes from *Center Edge*

Enhancing Business, Education and Personal Effectiveness Through Brain Gym®

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BRAIN GYM® IMPROVES READING!!

Study Shows 55 to 89 Percentile Point Increase in One Year

Cecilia Koester, M.Ed., Brain Gym consultant in Ventura, California, has recently announced her findings from a year-long study of Brain Gym and its effects on reading scores. She and her project partner, Joyce B. Sherwood, M.A., worked with teachers and students at Saticoy Elementary School in Ventura, California, over the 1998-1999 school year.

Twelve teachers of grades K, 2, 3, 4 and 5 were given Brain Gym instruction every Monday after school for one hour throughout the school year. In these sessions they learned how to determine which Brain Gym movements and activities were called for in relation to various academic situations and how to guide the students in doing them.

The teachers then taught the children in their classes how to determine for themselves which Brain Gym movements they would benefit from at any time. The children became quite self-sufficient in the use of Brain Gym movements to help them be more productive in any of their academic subjects. Each participating classroom did a minimum of 15 minutes of Brain Gym per day. Cecilia and Joyce also did classroom presentations as well as one-to-one instruction (October through January) with children who were having the most difficulties in school.

The study was based on the children's reading scores on the Stanford 9 test, a standardized achievement test given to all children in grades 2 through 11 in California. It compared the children's reading percentile scores from May '98 (the end of the previous school year), to those of May '99 (the end of the "Brain Gym" school year). A percentile score shows "relative standing" and works this way: A child scoring in the 30th percentile for reading scored higher than only 30% of the other children at his/her grade level (in schools across the country) and lower than the other 70%.

For the purposes of this study, scores of the 90 grade 3-4-5 children from "control" classes were compared with those of randomly-selected grade 3-4-5 children from the "Brain Gym classes."

The results were nothing short of phenomenal. During

that year, the reading scores of the "Brain Gym group" improved 55-89 percentile points, while the scores of the control group that received no Brain Gym support improved 0 to 16 percentile points.

Cecilia is quick to point out that gaining percentile points on reading scores is only one indicator of the improvement that the children made through their use of Brain Gym (albeit the most easily measured one).

Not so easy to measure, but clearly evident to the participating teachers, children, parents and school administrators, was the shift in self-esteem and attitude toward school that came along with the children's developing abilities. One portion of the soon-to-be published study is filled with comments from children who were amazed to be learning more easily, teachers who were more energized and effective in the classroom, and parents who were grateful and delighted in the growth they were seeing in their children.

Perhaps the greatest legacy of this project is reflected by an experience that Cecilia had recently when she visited the school, almost a year after her last student contacts there. As she arrived she saw children here and there doing Brain Gym movements as a spontaneous and natural support for their learning process. As children integrate Brain Gym throughout their days, they take on the experience of personal wholeness and self-esteem that will support them throughout their lives.

*Copies of this study are available for \$20.00 plus postage.
www.BrainGym.org
Contact info: Cecilia Freeman Koester, M.Ed
www.movementbasedlearning.com*

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Find Your PACE

Everyone has a unique rhythm and timing—a self-initiated pace—for optimal learning. In Edu-K, the acronym PACE stands for the four learning-readiness qualities shown below.



Hook-ups

POSITIVE



The Cross Crawl

ACTIVE



Brain Buttons

CLEAR



Sipping Water

ENERGETIC

Brain Gym® Readiness Routine—PACE

What are the four states necessary for self-directed, whole-brain learning?

Hook Ups

Part One: While sitting or standing, cross the left ankle over the right. Extend arms, with thumbs down, cross the left wrist over the right, then interlace your fingers and draw them up toward your chest. Hold position and relax for a least a minute, breathing deeply. Part Two: When ready, uncross legs and touch your fingertips of both hands together continuing to breathe deeply for about another minute.

The Cross Crawl

Touch one hand to the opposite knee; alternate moving one arm and opposite leg. Do for 1-2 minutes. Variation—touch opposite knee to elbow.

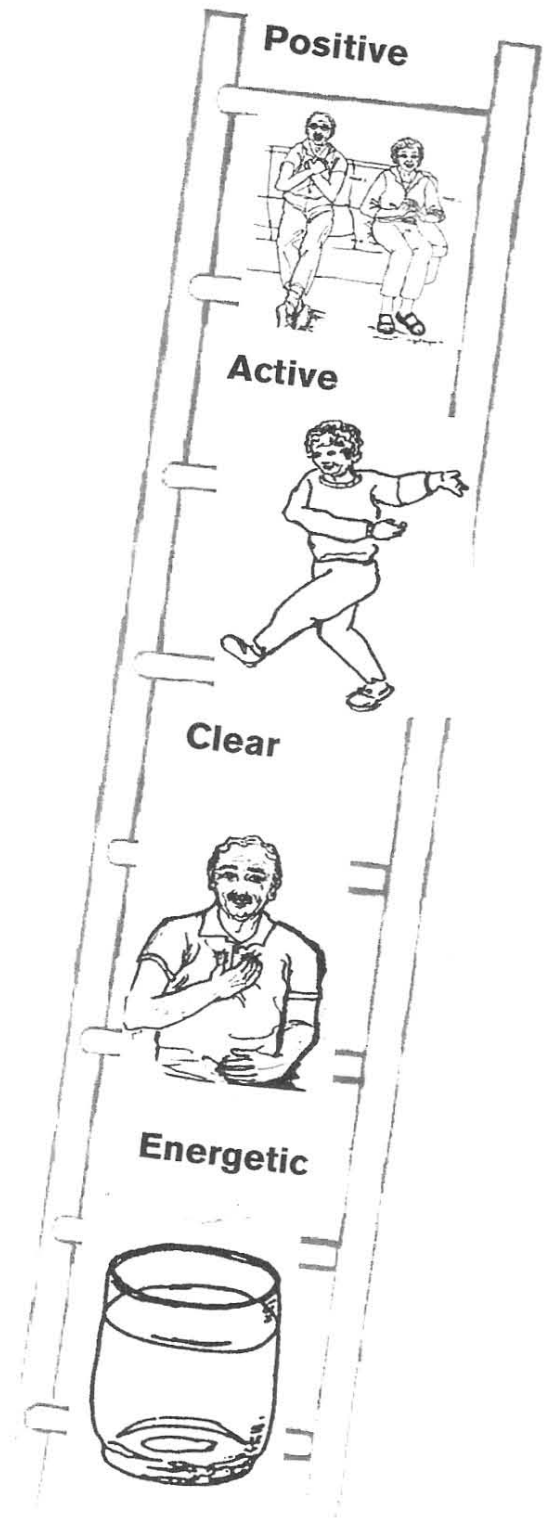
Brain Buttons

While holding the navel area with one hand, rub the hollow area below the collar bone between the first and second rib with the thumb and finger of the other hand. The fingers of the hand rubbing this area should be 1-2 inches apart (chin width). Rub for 20-30 seconds with one hand, then switch.

Water

Drink water regularly all day. Water increases electrical potential across cell membranes, which is essential for nerve net function.

Start with water and work your way up the ladder 



Source: Illustrations ©1988 Gail Dennison. Text: *Brain Gym*, (©1989) Paul & Gail Dennison. <www.BrainGym.com>
PACE Bookmarks ©1993, Edu-Kinesthetics, Inc. Brain Gym® is a registered trademark of Brain Gym® International/
The Educational Kinesiology Foundation. Page layout by Brenda Irvin.

The Theory Behind the PACE Process



Every individual has a unique pace—an optimal rhythm, timing, and flow for learning. When we can relax into that rhythm and timing, we can become self-initiating learners, able to recognize our own next appropriate learning step. Finding our PACE gives us access to the integrated high-gear (*Got it!*) and integrated low-gear (*I'm getting it*) learning states of doing our best.

We begin each balance with finding your PACE. In the PACE process, we start from the “e” (for the quality “Energetic”) and work in backward sequence (ECAP) as each of the four activities prepares us to do the next.

Energetic - Sipping Water helps to restore hydration, especially when we let the water be absorbed in our mouth, rather than gulping it. The body is made up of about 70 percent water, the conductive medium. Water supplies the electrolytes that carry electrical potential across cell membranes, and this electrical exchange is essential to the functioning of the new neural networks being created as we learn. Sipping Water prepares us to benefit from doing Brain Buttons, which activates our electrical system.

Clear - The Brain Buttons are electrical reflex points for the eyes. Stimulating these points is like a mini balance for crossing the midline. By moving our eyes right and left into the periphery while holding points in the kinesthetic midfield, we restore our centralized vision as we satisfy the scanning-reflex impulse to look away from the midline. The Brain Buttons activity also offers a primary vertical and horizontal reference in terms of the breastbone and collarbone of the skeletal system, helping us to find our visual center (the foundation of binocularity). Doing Brain Buttons prepares us to benefit from doing the Cross Crawl, which requires our crossing the midline.

Active - Doing the Cross Crawl movement simultaneously activates both sides of the body, firing neural pathways in the left and right cerebral hemispheres. The motion also helps to stabilize the pelvis, while also mobilizing and stabilizing the shoulders, thus supporting the walking-gait reflexes. This stable and coordinated gross-motor activity provides a comfortable movement pattern that we can maintain as we later sit and do tasks involving fine-motor control. Doing the Cross Crawl prepares us to benefit from doing Hook-ups, which requires our having moved and released tension so that we can slow down and relax. PACE moves us from the whole-body activity of the Cross Crawl to the whole-body relaxation of Hook-ups.

Positive – Doing Part I of Hook-ups activates the vestibular system and balance-related muscles, supporting us in restoring equilibrium after emotional or environmental stress. It draws blood and attention away from the body's periphery and fight-or-flight reflexes and back to the body's midfield, inhibiting reflexive behavior and supporting higher-order thinking and decision making. Part II of Hook-ups offers a metaphor for the connection of the cerebral hemispheres through the corpus callosum.

We begin each balance with finding our PACE. If staying in PACE is challenging, consider other options such as rethinking the goal.

What Inhibits Learning

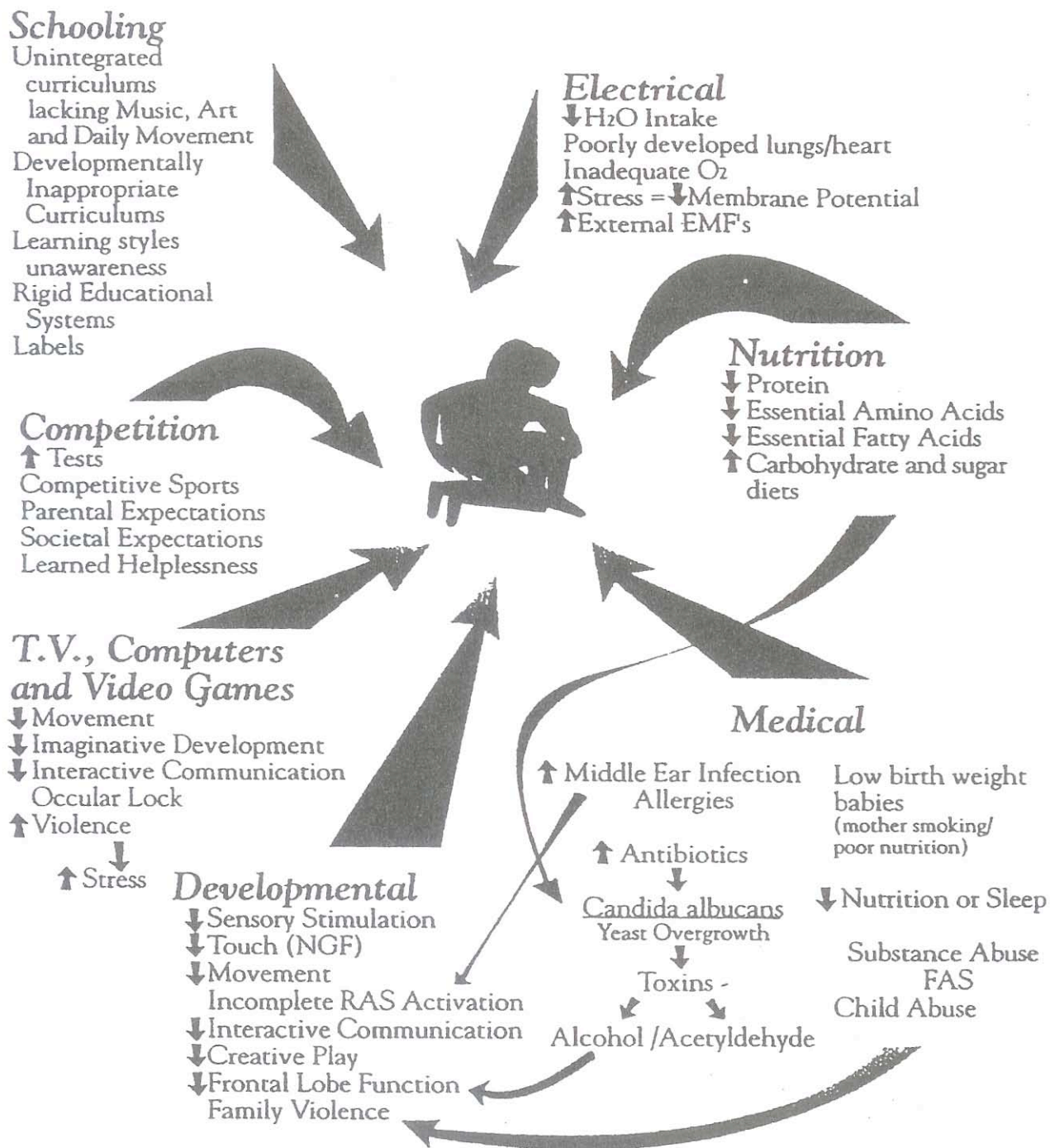


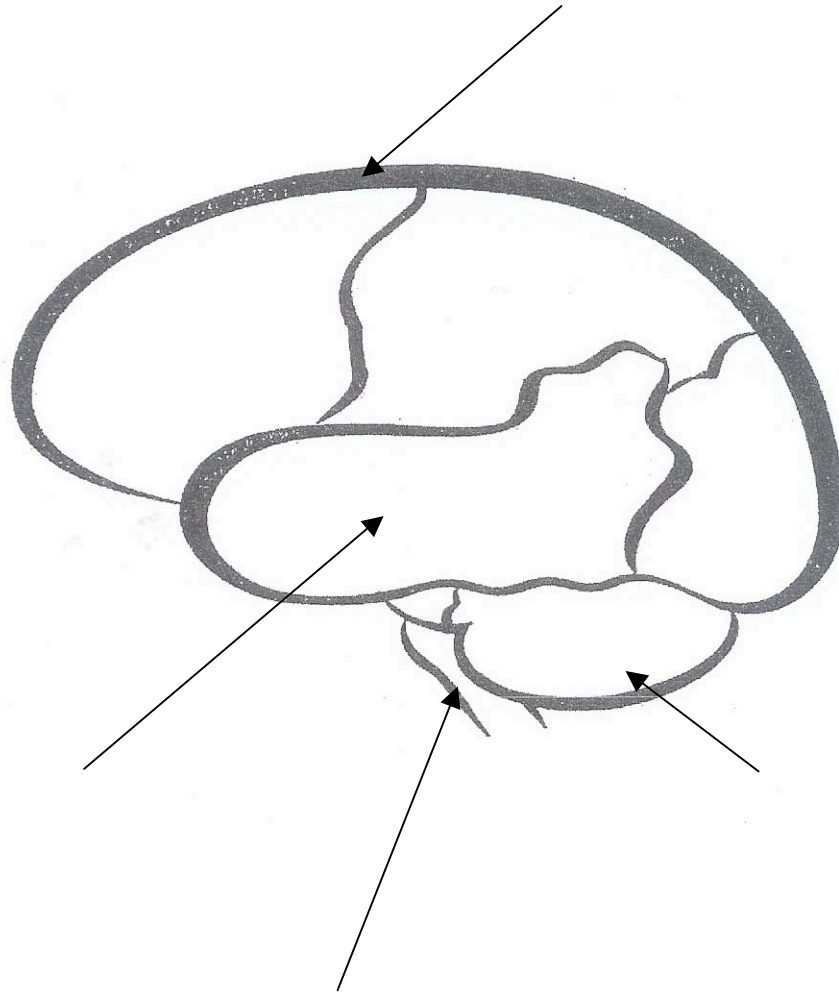
Figure 8.1: What Inhibits Learning

From *Smart Moves: - Why Learning is*

Not All in Your Head Carla Hannaford, Ph.D

WHAT GOES WRONG? ~

Your Amazing Whole Brain



The Triune Brain

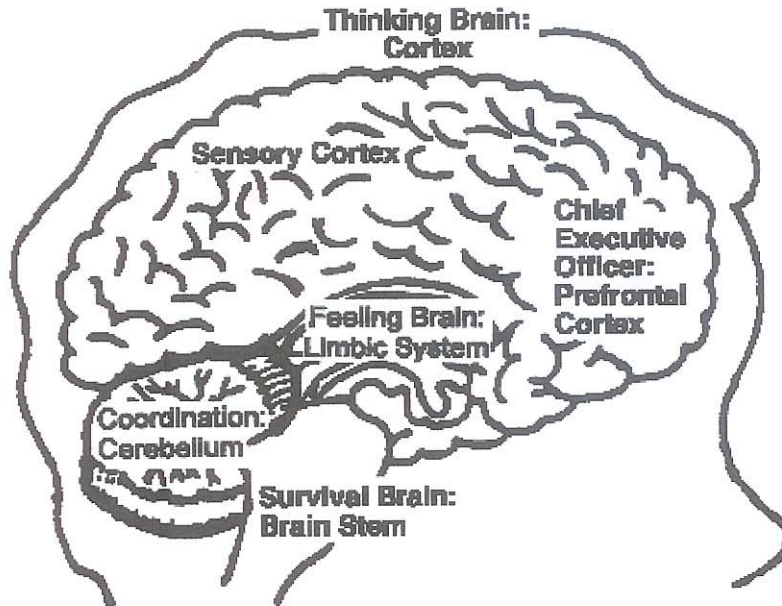
Neocortex: Home of creativity and rational thinking; right/left brain; logical processes; speech, writing, math, communication; laterality dimension, the human brain.

Limbic System: Home of emotions, memory, relationships, organizing skills, centering dimension, sometimes called the mammalian brain.

Brain Stem and Cerebellum: Home of the reptilian brain which monitors automatic functions like breathing, heart rate, digestion, body temperature, and other internal organ functions; comprehension, focus dimension.

Layers of the Brain

The brain is divided top to bottom in four layers. Each layer is like a separate brain with different jobs to do. It is important that they all work together as a team.



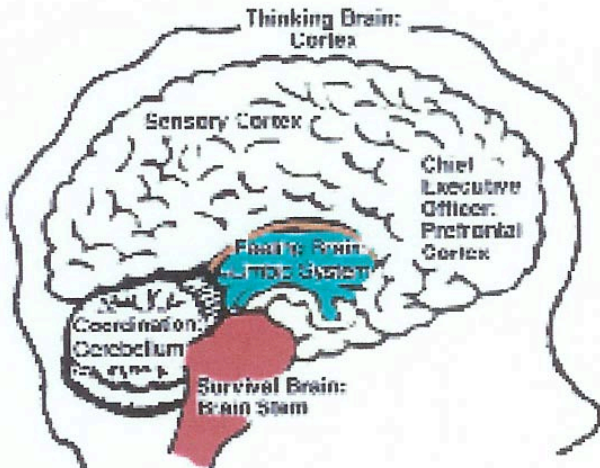
Thinking Brain: The thinking brain is in charge of how you experience the world through your senses. The CEO is the boss of the brain. It allows you to reason and imagine.

Feeling Brain: The feeling brain sends and receives emotional signals to and from the body.

Coordination Brain: The coordination brain helps your muscles work together. It also organizes your brain to help you think.

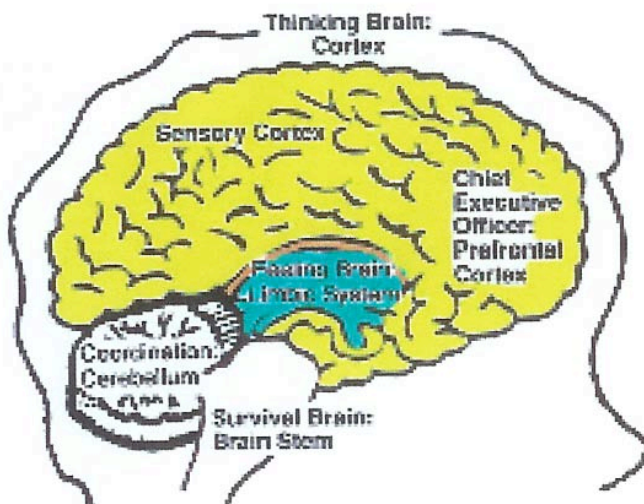
Survival Brain: The survival brain runs and protects the body without your having to think about it.

Which Brain is in Charge?



Stressed Brain?

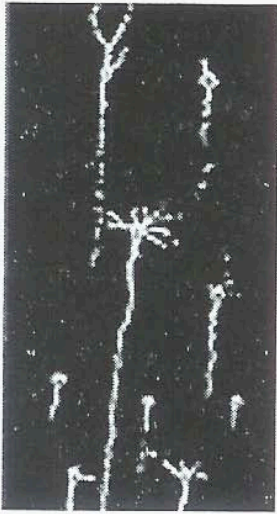
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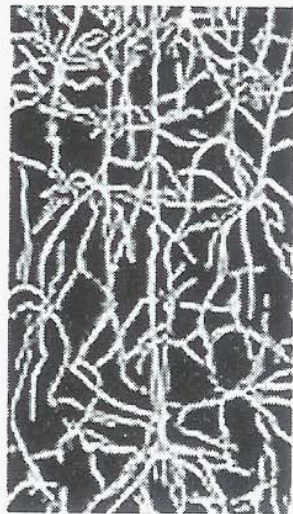
Calm Brain?

How We Learn

(Development of Neural Pathways)



Brand New



I'm Learning ...



Getting Better



I Know How!

The Three Dimensions of Learning

Focus Dimension

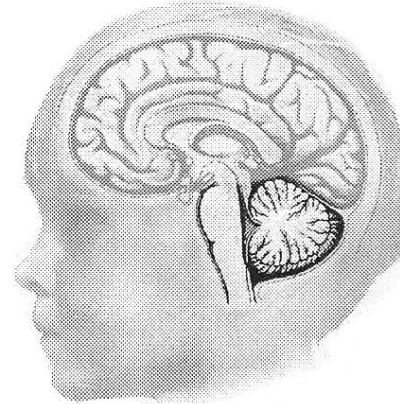
Attentional Intelligence

Where am I in space?

It will dominate the entire brain to get its needs met.

- First to develop
- Seeing, participating, anticipating, comprehending
- Controls automatic functions such as breathing and heart rate
- Facilitates visual skills
- Connected to vestibular system
- Opens and shuts access to higher reasoning centers
- Freeze, fight (survival: aggressive/violent), or flight
- Receives all information from senses (receptive)

I am safe.



Cerebellum - Reticular Activating System (RAS) - Brain Stem

Centering Dimension

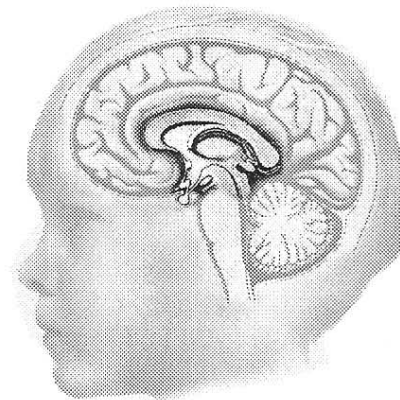
Emotional Intelligence

Where am I in relationship to people, places and objects?

All information is relayed through here.

- Second to develop
- Feeling, stabilizing, organizing
- Assists in converting short term memory to long term
- Generates pleasure/anxiety responses
- Releases hormones
- Fight or flight (defensive posture)
- Interactions learning about love and play

I connect.



Thalamus - Hypothalamus - Amygdala - Pineal gland - Pituitary gland - Basal ganglia - Hippocampus

Laterality Dimension

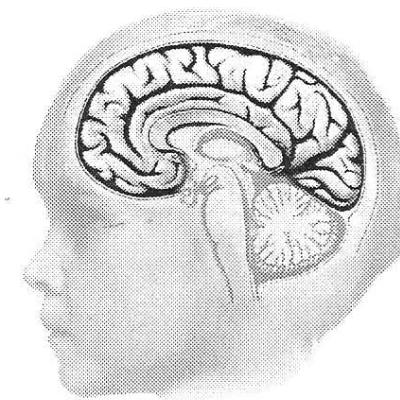
Informational Intelligence

Who am I? What is it?

All information is relayed through here.

- Third to develop, not fully developed until 8 years old
- Thinking, processing, communicating
- Interprets all senses
- Allows us to form complex memory/thought/reason
- Language acquisition
- Expression (verbal, non-verbal, written)
- Gestalt (whole picture) and logic (details) centers

I know who I am.



Cerebral cortex - Corpus callosum

Sources: Information gathered from the works of Paul E. Dennison, Ph.D., Gail Dennison, and Kari Swanson, MAT, Brain Gym® Consultant

Interfacing Brain Gym® With Children Who Have Special Needs

Stages of Brain Development

The Back Brain

Age: Conception – 15 months

Basic Survival needs - Food, shelter, security and safety

Sensory development stages - Vestibular system, hearing, tactile, smell, taste, seeing

Motor development states - Reflexes/core muscle activation, Neck muscles
Arms and legs lead to rolling over, sitting, crawling, walking, Motor exploration

The Midbrain

Age: 15 months – 4.5 years

Understanding: Of self/others, of self/emotions/ of self/language

Emotional Exploration – Language exploration/communication, Imagination, Gross Motor proficiency
Memory development, social development

The Neocortex

Age: 4.5 – 7 years - Gestalt Hemisphere Elaboration

Whole picture processing/cognition
Image movement/rhythm/emotion/intuition
Outer speech/integrative thought

Age: 7-9 years – Logic Hemisphere Elaboration

Detail and linear processing/cognition, Refinement of elements of language
Reading and writing skills development
Linear math processing

Age: 8 years – Frontal Lobe Elaboration

Fine motor development, skills refinement
Inner speech, control of social behavior
Fine motor eye teaming for tracking and foveal focus (2 dimensional focus)

Age: 9-12 years – Increased Corpus Callosum Elaboration and Myelination

Whole brain processing
Foreign languages are easiest learned prior to age 10
Complex patterns, grammar, spelling, technical nature of music

Age: 12 – 16 years - Hormonal Emphasis

Age: 16-21 years – Refining Cognitive Skills

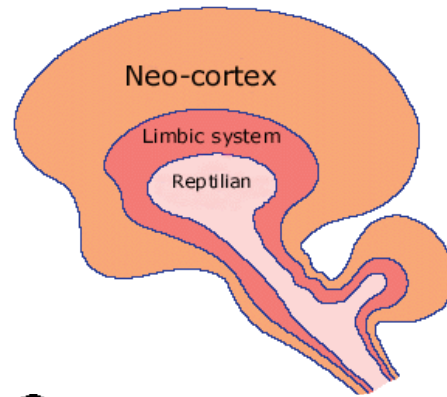
Age 21+ - Elaboration & Refinement of the Frontal Lobe

Source: *Smart Moves: Why Learning is Not All in Your Head* by Carla Hannaford, Ph.D.

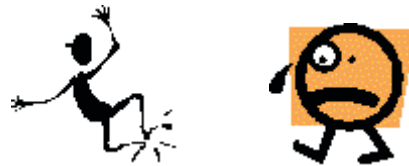
Our Brain

Learning can be quite a strain
If we don't understand our brain
It's made in parts, one two and three
Each making up what's you and me

The first, deep down, is very old
Been there since dinosaurs we're told
It's there to guarantee survival
Breathing, hunting, flee from rivals
Only if we're safe and sound
Will our thoughts shift to higher ground

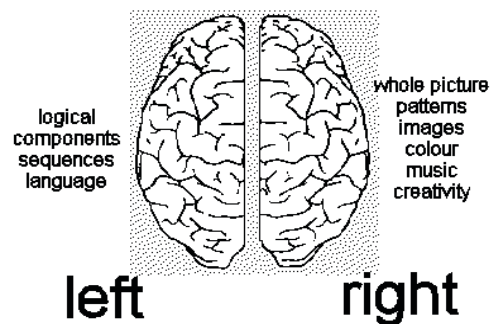


The second, wrapped around the first
Controls emotions, best and worst
Happy, sad, upset or calm
If too disturbed our learning's harmed

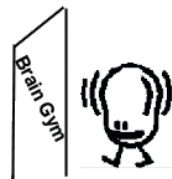


The third part runs our higher thoughts
It's where we process what we're taught
Cells link up, memories created
Tricky problems negotiated
This bit's divided into two

Strong left, strong right, which one are you?
The left likes words and smaller bites
The right – whole picture, patterns, sights
If all goes well both halves are used
The cells connect, no one's confused
And then while we are fast asleep
The memories are passed down deep



To sum up – this fantastic tool
Will serve us well at home or school
To keep it at its best we oughta
Give it exercise and rest and water



© Bryn Evans 2001

Learning-Style Summaries of the Edu-K Brain Organization Profile



Uniform Dominance

This profile shows dominance of one side of the brain (either the left or the right) and the dominance of the eye, ear, and hand on the opposite side.

This profile is most commonly associated with the person who does well in the classroom but may learn to inhibit one side instead of using the brain as a dynamic whole, thus not realizing how much of his or her creative potential is not accessed.

right / left



left / right



Mixed Dominance

This profile shows dominance of one hemisphere (either the left or the right) with one or two of the dominant functions for vision, audition, or fine-motor movement on the same side and one or two of the dominant functions on the opposite side.

This profile is found in a large percentage of the population of students who experience learning difficulties. Handedness and directionality are often inconsistent, and integration of sensory channels may be incomplete. The individual is often unaware that he or she is achieving much less than full capability.

right / left



left / right



One-Sided Dominance (formerly called "Blocked Dominance")

This profile shows dominance of one hemisphere and all sensory channels on the same side. To access the dominant eye, hand, or ear the learner must "switch off" the dominant brain and often the corresponding part of the personality that feels most authentic.

People with this profile may feel that they can't access who they really are, especially when doing near-point skills. The skills typically associated with this person's dominant hemisphere may be well developed, but it may be difficult for this individual to connect with a sense of self or personal meaning.

right / left



left / right

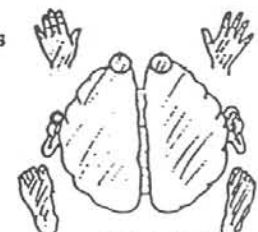


Whole-Brain Access

A profile in which both cerebral hemispheres and all sensory channels are "switched on" and connected. The student has the ability to access all modalities for any type of learning. This pattern is frequently available through the use of Edu-K balances and Brain Gym.

Learned patterns of visual and auditory homolaterality (low gear) give way to visual and auditory fusion. Learned patterns of one-sided motor coordination become more available for the other side to learn and use. Kinesthetic homolaterality gives way to a preference for bilateral movement.

right / left



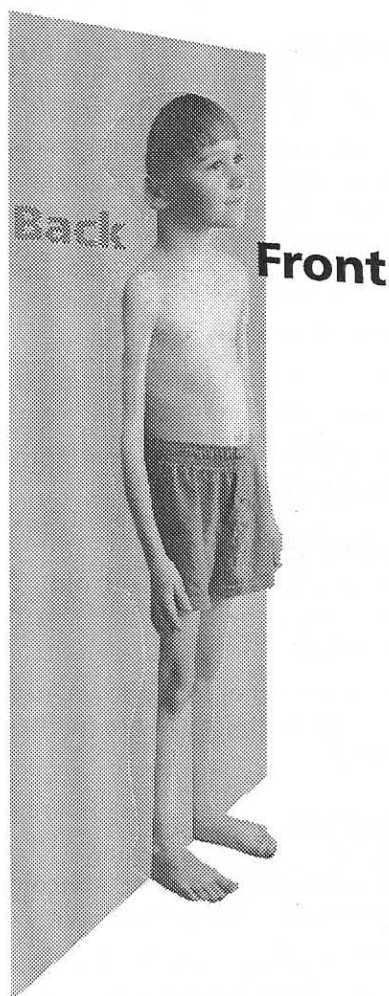
left / right

Note: these profiles sometimes change according to the task. For in-depth information see *The Dominance Factor* by Carla Hannaford (1997) and *Personalized Whole Brain Integration* by Dennison and Dennison (1984).
Brain Organization Profiles Manual Page 25

07/31/01

Three Dimensions of Movement

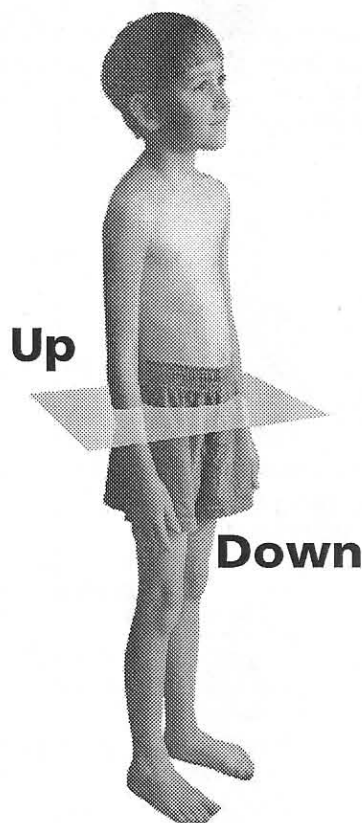
Focus
Comprehension



back-and-front
Spinal movement

Lengthening Activities
Participation

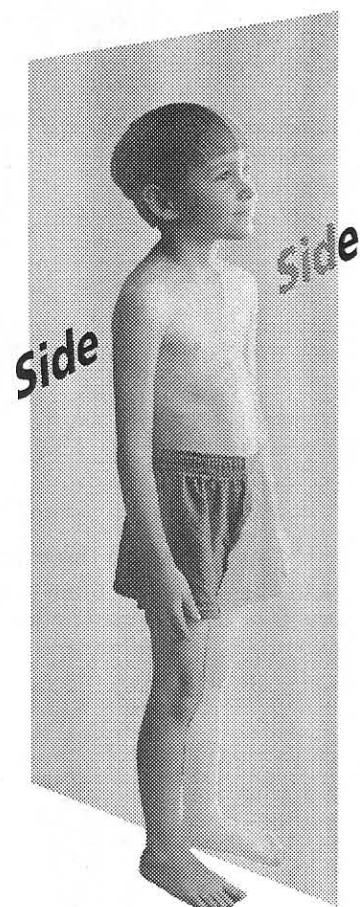
Centering
Organization



up-and-down
Homologous movement

Energy Exercises
Stabilization

Laterality
Communication



side-to-side
Homolateral movement

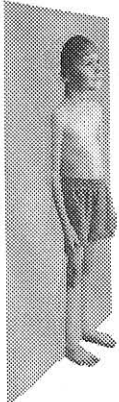
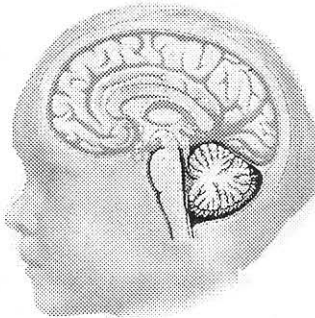
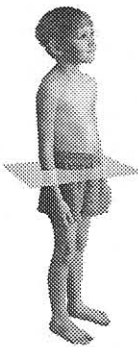
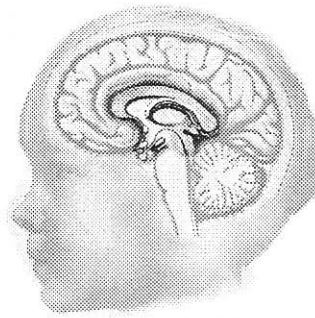
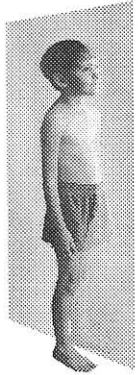
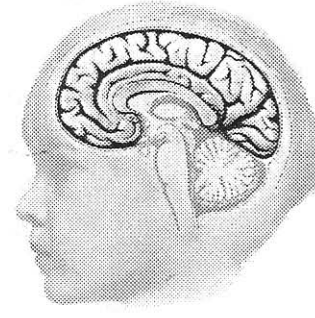
Midline Movements
Processing

Sources: *Kinesiology: The Scientific Basis of Human Motion*, 4th Edition, (1966) by Katherine Wells, Ph.D.; *Brain Gym Handbook*, Revised (1997) by Paul E. Dennison, Ph.D. and Gail E. Dennison. Brain Gym® is a registered trademark of Brain Gym International/Educational Kinesiology Foundation. <www.braingym.org>

Interfacing Brain Gym® With Children Who Have Special Needs

The Three Dimensions of the Brain/Body System

The following provides a conceptual overview of brain/body integration. Physical posture and body language are correlates for whole-brain learning. Brain Gym® movements were developed to either stimulate, relax, stabilize or release the brain/body system, to facilitate learning with ease.

The Body	The Brain/Body System	The Brain
 <p data-bbox="203 863 407 898">Front and back</p>	<p data-bbox="623 470 854 501">Focus Dimension</p> <p data-bbox="599 520 891 552">Key Word: Comprehension</p> <p data-bbox="618 554 943 585">Midline: Participation Midline</p> <p data-bbox="477 588 954 619">Brain Gym Activities: Lengthening activities</p> <p data-bbox="602 621 951 653">Question: Where am I in space?</p> <p data-bbox="514 655 997 711">Primary Learning: Front/back differentiation; the ability to attend</p> <p data-bbox="498 714 964 770">Movement Pattern: Spinal movement from head to tailbone</p> <p data-bbox="548 772 969 829">Responsive to: Survival, safety, getting needs met</p>	 <p data-bbox="1089 800 1430 877">Front lobes of neocortex to back of brain</p>
 <p data-bbox="203 1283 407 1325">Up and down</p>	<p data-bbox="599 911 886 942">Centering Dimension</p> <p data-bbox="599 961 867 993">Key Word: Organization</p> <p data-bbox="618 995 943 1026">Midline: Stabilization Midline</p> <p data-bbox="477 1029 899 1060">Brain Gym Activities: Energy activities</p> <p data-bbox="602 1062 987 1119">Question: Where am I in relation to people and objects?</p> <p data-bbox="514 1121 1013 1178">Primary Learning: Top/bottom differentiation; ability to take action</p> <p data-bbox="498 1180 980 1278">Movement Pattern: Homologous movement of both hands or feet together</p> <p data-bbox="548 1281 943 1310">Responsive to: Emotion, interaction</p>	 <p data-bbox="1089 1247 1321 1289">Top and Bottom</p>
 <p data-bbox="203 1730 407 1766">Side to side</p>	<p data-bbox="602 1352 886 1383">Laterality Dimension</p> <p data-bbox="602 1402 899 1434">Key Word: Communication</p> <p data-bbox="618 1436 930 1467">Midline: Processing Midline</p> <p data-bbox="477 1470 911 1501">Brain Gym Activities: Midline activities</p> <p data-bbox="602 1503 964 1535">Question: Who am I? What is it?</p> <p data-bbox="514 1537 992 1593">Primary Learning: Left/right differentiation; ability to intend</p> <p data-bbox="498 1596 997 1715">Movement Pattern: Homolateral movement of arm, leg, hip and shoulder on same side of the body</p> <p data-bbox="548 1717 1002 1751">Responsive to: Expression, interpretation</p>	 <p data-bbox="1089 1688 1419 1751">Left/right hemispheres of the neocortex</p>

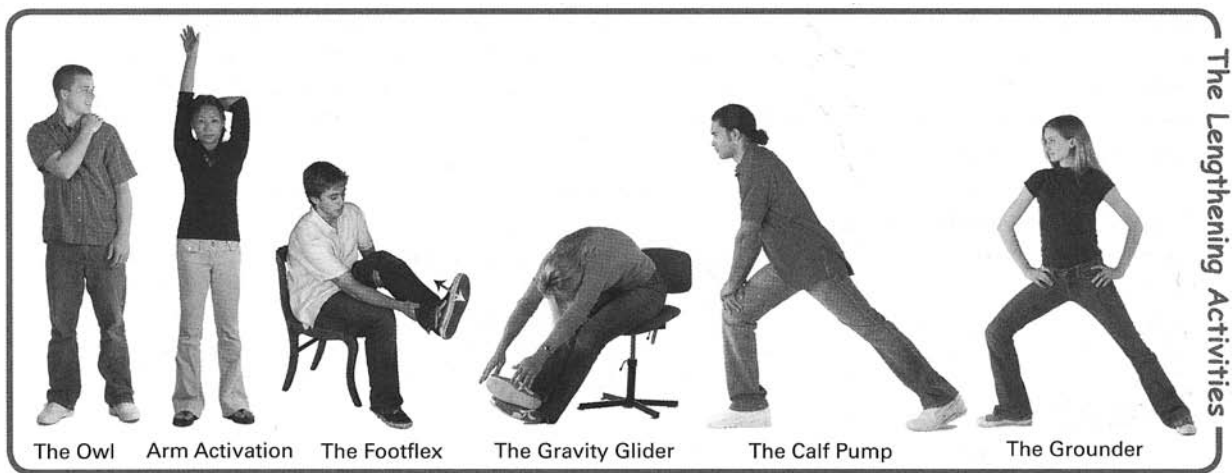
Sources: Information gathered from the works of Paul E. Dennison, Ph.D., Gail Dennison, and Kari Swanson, MAT, Brain Gym® Consultant

Cecilia Koester, M.Ed.

Lengthening Activities for Focus (Brain Stem and Cerebellum)

Lengthening Activities help the student to develop and reinforce those neural pathways that enable them to make connections between what they already know in the back of the brain and the ability to express and process information in the front of the brain.

The front portion of the brain is involved in comprehension, motor control and rational behaviors necessary for participation in social situations. These activities have been found to relax those muscles and tendons that tighten and shorten by brainstem reflex when we are in unfamiliar learning situations. This resets the proprioceptors, the "brain cells in muscles" that give us information about where we are in space, enabling us to have better access to the whole brain-body system.

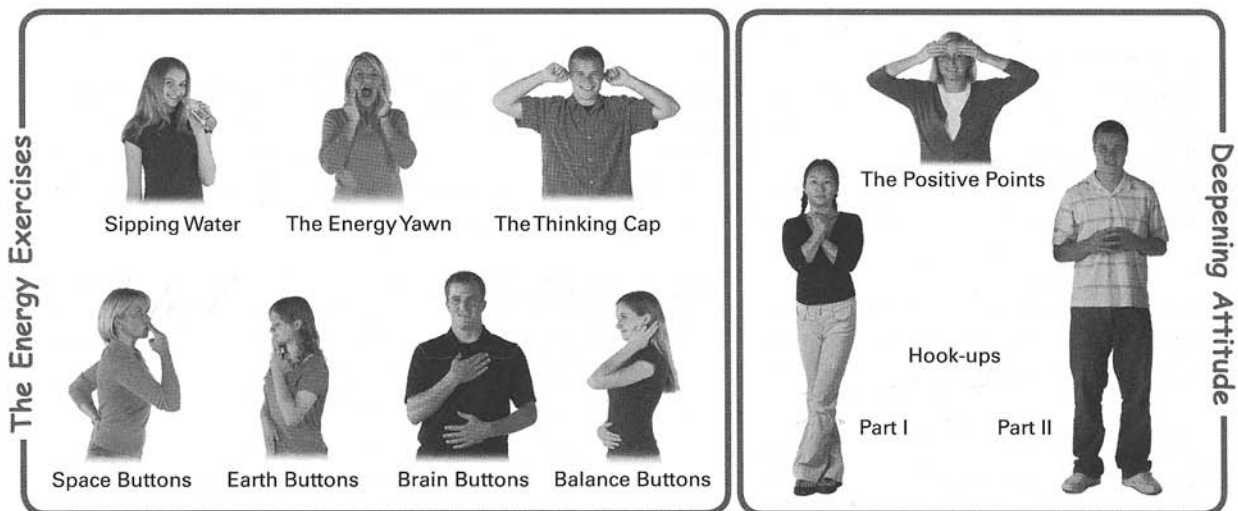


Energy Exercises for Centering (Limbic System)

Energy Exercises help to re-establish neural connections between the body and the brain, thus facilitating the flow of electromagnetic energy throughout the body. These activities support electrical and chemical changes that occur during all mental and physical events.

Left-to-right/right-to-left, head-to-foot/foot-to-head, and back-to-front/front-to-back circuitries establish and support our sense of direction, of side preference, feeling centered, focus, and our awareness of where we are in space and in relation to objects in our environment.

When visual skills are built on this proprioception foundation, a match is easily made between what is seen and what is experienced. Without this congruency, conflict among the sensory channels makes learning difficult.



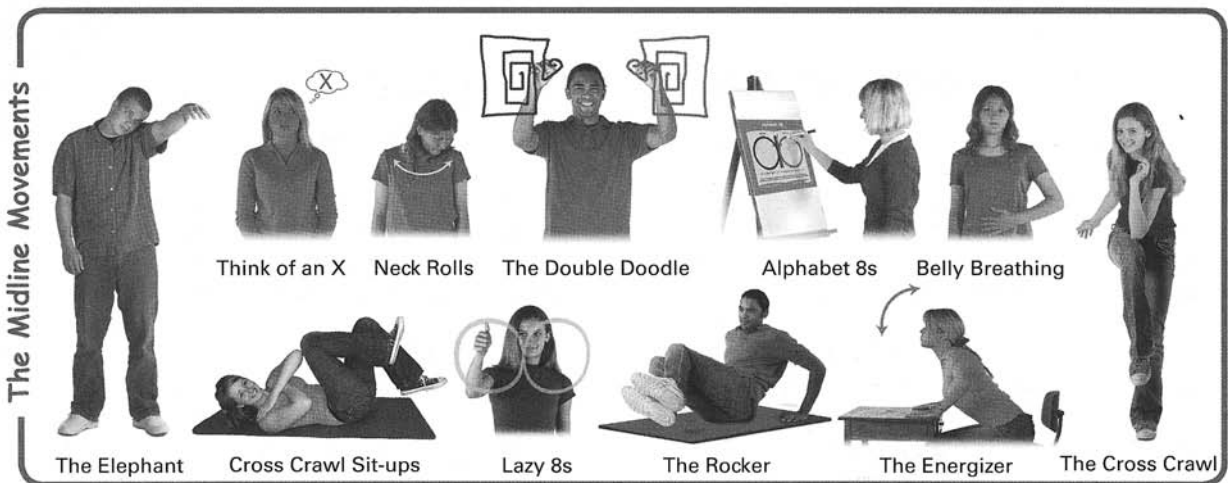
Deepening Attitudes

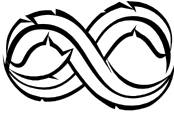
Two additional movements that connect the body's circuitry. This allows for a shift in electrical energy from the survival centers in the hind brain to the reasoning centers in the mid brain and neocortex. This activates integration of both hemispheres of the brain, thus increasing fine-motor coordination, and enhanced formal reasoning.

Midline Movements for Laterality (Left/Right Hemispheres)

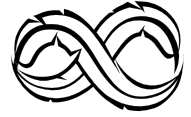
The Midline Movements focus on the skills necessary for easy two-sided (left-right) movement across the midline of the body. The vertical midline of the body is the necessary reference for all bilateral skills. The midline is the area where the left and right visual fields overlap, requiring the paired eyes and all of their reciprocating muscles to work so well as a team that the two eyes function as one.

Development of bilateral movement skills for crawling, walking, or seeing depth is essential to the child's growing sense of autonomy. It is also a prerequisite for whole-body coordination and ease of learning in the near-visual area. The Midline Movements help to integrate binocular vision, binaural hearing, and the left and right sides of the brain and body.





Creative Ways to Play with Lazy 8s



Ribbons!

Hot Wheels Race Track or Train tracks

Wooden Lazy 8 board (available at www.braingym.com or www.turnzwood2.com)

Metal frame:

Gyrobix Infinity - Google the name to find the best price - costs around \$15

Blue plastic 8 "Jakob's Figure 8" - www.Abilitations.com, 800-850-8603, #026619, \$21.95

3D Lazy 8s (behind your back with a dowel or pipe insulation)

Snapping your fingers around the 8 with eyes closed (Auditory 8s)

Do them BIG - Draw in the air... Or on a carpet

In the sand

On a Whiteboard

Hula Hoops (on the floor)

Magnadoodle!

Do them with your BODY

Eyes (Open and closed)

Nose

Neck

Shoulders

Ribs

Elbows

Wrists

Fingers

Hips

Knees

Ankles

Toes in the sand

Draw them on someone else's back with your finger or your whole hand (stimulates production of Nerve Growth Factor NGF)

Challenge: Stand on one foot and trace the shape while keeping your balance. Close your eyes if you're ready for another challenge!

Come up with your own - play and have fun with them!

For inexpensive materials to make Lazy 8s, visit the Scrap Box, 734-994-4420, 581 State Circle, Ann Arbor, MI 48108.

Reference List for Brain Gym®

Amen, Daniel G., M.D. *Change Your Brain, Change Your Life.* www.brainplace.com (web site includes brain SPECT scans of brains on drugs and alcohol – and after rehab – amazing)

Batmanghelidj, Dr. F. *Your Body's Many Cries for Water.*

Cohen, Isabel and Goldsmith, Marcelle Sharman. *Hands On: How to Use Brain Gym in the Classroom and Beyond.*

Dennison, Paul Ph.D. and Dennison, Gail. *Brain Gym Teacher's Edition.* Revised 2009.

Emoto, Masaru. *The Hidden Messages in Water.*

Hallowell, Edward M., M.D. *A Walk in the Rain with a Brain.*

Hannaford, Carla, Ph.D. *Smart Moves: Why Learning Is Not All in Your Head.*

Hannaford, Carla, Ph.D. *Playing in the Unified Field: Raising & Becoming Conscious, Creative Beings.*

Hannaford, Carla, Ph.D. *The Dominance Factor: How Knowing Your Dominant Eye, Ear, Brain, Hand, and Foot Can Improve Your Learning.*

Hubert, Bill. *Bal-A-Vis-X.* <http://www.bal-a-vis-x.com> or www.amazon.com

(Freeman) Koester, Cecilia. *I Am The Child: Using Brain Gym® for Children with Special Needs.* www.iamthechild.com

Koester, Cecilia. *Movement Based Learning for Children of All Abilities.* www.movementbasedlearning.com

Medina, John. *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School..*

Moorman, Chick. *Talk Sense to Yourself: The Language of Personal Power.*

Ratey, John, M.D. *Spark: The Revolutionary New Science of Exercise and the Brain.*

Brain Gym® Web sites and Information:

Brain Gym® International
1575 Spinnaker Drive, Suite 204B, Ventura, CA 93001
1-800-356-2109, www.braingym.org

Free **Research Chronology** available to download at www.braingym.org

To order Brain Gym books: Edu-Kinesthetics 1-888-388-9898 www.braingym.com

Music List for Brain Gym® (Mostly for Elementary Students)

Music with Brain Gym verbal cues:

- 1) Brain Gym CD, available at <http://www.braingym.com>
- 2) Movement and Learning, Brendan O'Hara. Booklet and CD (pink)., <http://www.braingym.com>.
- 3) Wombat and His Mates, Brendan O'Hara. Booklet and CD (green), <http://www.braingym.com>.
- 4) Catch a Brain Wave, Fitness Fun by RONNO and Liz Jones-Twomey, www.kimboed.com
- 5) Rappin' on the Reflexes, Eve Kodiak. <http://www.cdbaby.com/cd/evekodiak> Songs, raps and music narrations for teachers, parents and kids. Includes manual and CD. \$38.00

Songs Used in Class:

1. Kalimba, African Playground, Putamayo World Music.
2. Common Threads, Medicine Man, Bobby McFerrin.
3. Breathe, The Heart of Healing, Karen Drucker. www.karendrucker.com
4. All in One, Music for Creative Dance: Contrast and Continuum, Vol. 1, Eric Chappelle. <http://www.aventurinemusic.com/mcd-volume1.html#track-samples>
5. Beethoven's Wig, Beethoven's Wig: Sing Along Symphonies, Rounder Records, 1-800-ROUNDER (1-800-768-6337).

Other Good Selections

South Pacific Islands, Putamayo World Music.

Dreamland, Putamayo World Music

"Finger Tapping," Moving with Mozart, Kimbo Educational. www.amazon.com

Hear and Gone in 60 Seconds., Various Artists, Rounder Records, 1-800-ROUNDER (1-800-768-6337).

Music for The Mozart Effect, Don Campbell. Various editions: Rest, Motion, Daydream and Draw.








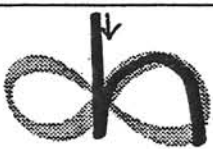


















Bridge on the River Kwai

"Nutcracker Ballet," Tchaikovsky

"The Stars and Stripes Forever," John Phillip Sousa

Check out **Education Through Music**, another wonderful program that uses songs and song games to help kids feel stable and safe and blends beautifully with Brain Gym <http://www.richardsinstitute.org>

****Fabulous** web page with a chapter on using music in the classroom, along with specific musical selections: <http://www.newhorizons.org/strategies/arts/brewer.htm>

		Alphabet 8's	
			
			
			
			
			
			

Design by Kari Swanson, M.A.T., 805-653-1532
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BRAIN GYM® ACTIVITIES EASY REFERENCE CHART

	Cross Crawl (p. 4)	Lazy 8's (p. 5)	Double Doodle (p. 6)	Alphabet 8's (p. 7)	Elephant (p. 8)	Neck Rolls (p. 9)	Rocker (p. 11)	Belly Breathing (p. 12)	Cross Crawl Sit-ups (p. 13)	Energizer (p. 14)	Owl (p. 17)	Arm Activation (p. 18)	Footflex (p. 19)	Call Pump (p. 20)	Gravity Glider (p. 21)	Water (p. 22)	Brain Buttons (p. 24)	Earth Buttons (p. 25)	Balance Buttons (p. 26)	Space Buttons (p. 27)	Energy Yawn (p. 28)	Thinking Cap (p. 29)	Cook's Hook-ups (p. 31)	Positive Points (p. 32)	
Balance/harmony (inner)	X																								
Balance (body)		X																							
Body Coordination	X	X	X	X																					
Concentration					X																				
Depth Perception		X																							
Dyslexia		X	X																						
Emotions																									
Energy																									
Eye/hand Coordination			X	X	X																				
Hyperactivity																									
Left/right Directions	X	X	X	X																					
Listening/hearing		X																							
Listening Comprehension																									
Math					X																				
Memory																									
Posture																									
Organization																									
Reading	X	X																							
Reading Comprehension	X																								
Self-esteem																									
Social Behavior																									
Spatial Awareness					X																				
Speech	X																								
Spelling	X																								
Vision	X																								
Writing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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Midline Movements

Lengthening Activities

Energy Exercises

Deepening Attitudes

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HOW TO USE THIS CHART

1. Choose the situation or task in which you would like to improve your ability.
2. Follow that line across the chart. "X" indicates the Brain Gym activity listed at the top of that column which will improve your ability to perform that task.
3. Do all or some of the indicated Brain Gym activities as needed or just before performing the task.
4. Page numbers after the Brain Gym activities indicate the reference page for that activity in the Brain Gym Teacher's Edition.

This chart was created
and published by



An-Ra-Nae Meders
Certified Brain Gym Instructor
PO Box 942 Sedona, AZ 86339
(520) 204-2911