

November 2011

INSIDE THE WOODS

Here's what happening on our big birthday celebration

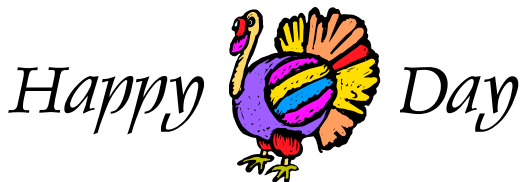
Led by Chairs Ju Wotring and Patty Keys, the Big To-Do Gala Team is gathering up auction items and planning an extra-special event to commemorate 50 years of learning at School of the Woods.



Here are a few auction item highlights:

- WOW!** Hand Made Chess Table by Wayne Wilkerson
- WOW!** Wine, Dine and Cooking class with Gary Eaton (he's Academic Dean with the Culinary Arts Institute)
- WOW!** Fly to Brenham for Burgers
- WOW!** SlimRitas
- WOW!** Aurora Picture Show – Asteroid Membership

Join us for a great evening of fun, friendship and fundraising on March 3, 2012. For more information visit: www.schoolofthewoods/gala.



Montessori Up Close

We wrote about these two November events – getting acquainted with Woods High School and Woods Middle School – in the October issue. These sessions are very important if your child is close to the time of making a big school transition. Monday, November 7 – Woods Middle School; Tuesday November 8 – Woods High School. 7 PM.

Have a Happy Thanksgiving and Holiday

The Thanksgiving holiday is November 23-25 and teachers, students and parent volunteers from the elementary grades are making their usual elegant plans for the Thanksgiving feast.

That will take place on Tuesday, the 22nd, on the main campus. The lunch schedule makes it possible for the older students (high school and middle school) and the elementary and upper elementary classes to share this Thanksgiving feast.

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Eloise Rochelle, Editor

The Importance of Self-Regulation

by Elizabeth Stepankiw

When work has become a habit, the intellectual level rises rapidly, and organized order causes good conduct to become a habit...Freedom in intellectual work is found to be the basis of internal discipline.

--Maria Montessori (1917/1965)

Most of us have been lead to believe that intelligence as measured on IQ tests is the primary factor leading to success in academic settings. Recent research conducted at the Pennsylvania State University published in *Child Development Journal* indicates the ability to self-regulate is more crucial than intelligence in determining academic success in all subject areas.

Planning, problem solving, and goal-directed behavior were found to be strongly predictive of all academic outcomes but were particularly associated with early ability in math. Researchers have found "all aspects of children's self-regulation are uniquely related to their academic abilities, over and above their intelligence" (*ScienceDaily*, 2007).

Focused attention, inhibitory control, attention shifting, and impulsivity levels have been correlated to parent, teacher, and peer ratings on a child's perceived warmth, generosity, and ability to cooperate as well. Being able to pay attention means a person is able to self-regulate (Angeline Stoll Lillard, 2005, p. 103).

"At-risk children who can self-regulate have higher test scores than their peers" reported

a study conducted by Oregon State University graduate student Michaela Sektnan and Megan McClelland (April 27, 2010). It supports the other studies, reiterating that self-regulation, or children's ability to control their behavior and impulses, is directly related to academic performance.

The self-regulation skills are often called executive functions. These executive functions "allow us to organize our behavior over time and override immediate demands in favor of long-term goals" (Peg Dawson & Richard Guare). Executive functions include the ability to plan and organize activities, to complete tasks, attend to what is most important, handle emotions, and to understand our own thought processes.

Parents and teachers can help children practice these skills in several ways. Keep regular daily routines and use calendars or schedules as visual supports so children are aware of upcoming changes in routine and are able to learn to understand the history of events in their lives.

Limit TV watching and computer games that just require the pushing of a button (these short-circuit your child's ability to participate in ways that build self-regulation

skills). Work on building home activities that allow the child to plan and organize, cooperate with others, and/or actively manipulate materials.

Stories and cartoons may be used as a springboard for discussions about behaviors that you value. Talking about emotions helps your child learn to identify her/his own feelings and thus gain more control over them as time passes. Discussing motives helps your child learn to think about thinking.

Meditation has been shown to help develop those parts of the brain involved in self-regulation--the task of attending fully to the here and now. It can be seen as an exercise in attention-training (Angeline Stoll Lillard, 2005).

Games and activities that keep your child engaged for increasingly longer periods of time, which for younger children often means things they can use with their hands, help build the ability to concentrate.

The current literature suggests self-regulation and attention can be trained with practice and will lead to good social skills, higher academic performance, increased happiness, and even improved immune response (Angeline Stoll Lillard, 2005, p. 105). In Spontaneous Activity in Education: The Advanced Montessori Method, Dr. Montessori describes the process: "Each time that such a polarization of attention took place, the child began to be completely transformed, to become calmer, more intelligent, and more expansive" (p. 68).

Good Question: Why are students asked to attend elementary, middle, and high school conferences?

The parent, teacher, and student conference is an important opportunity to establish trusting and cooperative relationships and benefits the student in multiple ways:

- ❶ *The mutual goal-setting orients the students toward learning goals.*
- ❷ *Because the students are part of the conversation, rather than the ones being talked about, they gain a sense of ownership and responsibility for their education.*
- ❸ *The students obtain experience in their ability to lead the conference as well as planning and organizing.*
- ❹ *The conference is an opportunity for parents to see the work of their student and note areas of growth, identify strengths, and emphasize the value of working hard.*
- ❺ *The conference gives the students a chance to reflect on what they have learned.*
- ❻ *If there are any problems to be solved, it gives all those concerned a time to brainstorm possible solutions.*
- ❼ *Parents, teachers, and students are able to talk about any situations where information has been lost in the translation.*
- ❽ *The conference gives students a time to voice their own ideas and concerns.*
- ❾ *Conferences give the parents and teachers a time to mutually convey their support for the student's success and future plans.*
- ❿ *Conferences in which students participate allow the students to play an active role in all aspects of their school experience.*

How to support your child in math

By Elizabeth Stepankiw

Our society has a tendency to judge everything by the bottom line: Is the answer right? And how quickly did you get to the answer? Montessori is going against the grain in its approach to mathematics (and education in general). If you choose Montessori for your child, then you need to be willing to go against the grain yourself and support your child's Montessori way of learning.

—Michael Duffy (Math Works, 2008, p.67).

In the book *Math Works*, Michael Duffy tells us it is the process of working on math materials that is most important, not just obtaining the right answer. In her developmental approach to math, Montessori was aware of the child's need foremost to develop what she called a "mathematical mind," the ability to understand the logic and reason of math and think with precision and clarity.

The materials are designed to give the child a concrete representation of math and move one step at a time to the abstract with many opportunities for self discovery along the way. Traditional math teaching begins at an abstract level and focuses on memorization of facts and techniques—a method that prevents the child from discovering for herself the patterns and concepts in the numbers. This often makes math seem tedious and, in the end, only gives the child a superficial understanding of math.

The materials begin in early childhood with one-to-one correspondence work, matching quantity to number, counting, and move to the representation of the

decimal system with the golden beads, which are used to add, subtract multiply, and divide. The child continues on to a number of other materials--stamp game, bead frames, checkerboard, and test tubes to name just a few.

Parallel to the materials in operations are the materials designed not only to help the child practice and memorize facts, but also to self-discover the relationships and patterns in numbers. Montessori has an extensive sequence of lessons and materials covering the span from three to 12 years for geometry and fractions as well. Children see in the concrete materials what it means to square or cube a number, find square and cube roots, the idea of negative numbers and decimals as well as have exposure to some of the rules of algebra.

The brain consists of two hemispheres controlling different capacities and four main lobes-- the occipital, parietal, temporal, and frontal-- each responsible for various functions. More than 100 billion neurons are in the brain at birth, but it is not the number of neurons that determines the strength of the brain, it is

the network of connections the brain builds when they are activated.

Because the Montessori math materials are concrete representations of math, and are multisensory, and promote active discovery learning through manipulation.

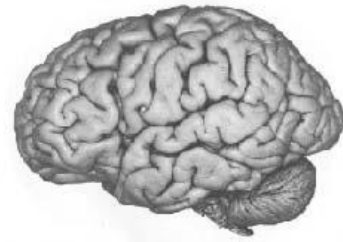
“They simultaneously engage multiple areas of your child’s brain, including all four lobes of her cerebrum. Her occipital lobe sees the colors and shapes of the materials. Her temporal lobe takes in the auditory cues that accompany their use and triggers memory associations. Her parietal lobe is engaged in the purposeful movement of the materials. And her frontal lobe provides the problem-solving processing to put all the sensory input together and find a solution to the problem. The simultaneous activation of all four lobes creates a multiplicity of neural connections and builds a network in your child’s brain.”

-- Michael Duffy, (2008, p. 55)

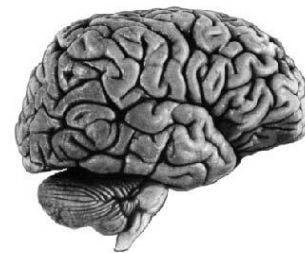
During this process, the brain is also building connections between the right and left hemispheres (Duffy, p. 56). Math development is sensitive to the child’s age. A spurt in the formation of neural connections occurs in the right hemisphere of the brain between the ages of 4 and 7.

Between the ages of 9 and 12, the growth is most active in the left hemisphere and the full maturation of the bridge between them occurs by the age of 13 (Duffy, p.53).

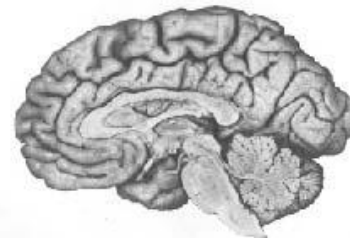
Left Hemisphere Lateral View (from the side)



Right Hemisphere Lateral View (from the side)



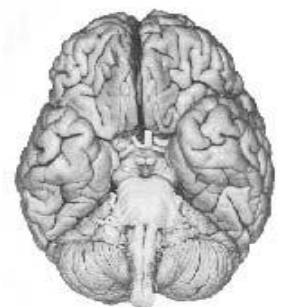
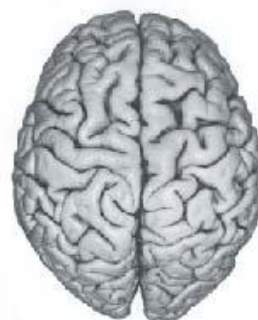
Midsagittal View of Right Hemisphere (cross-section through middle of head)



Top View

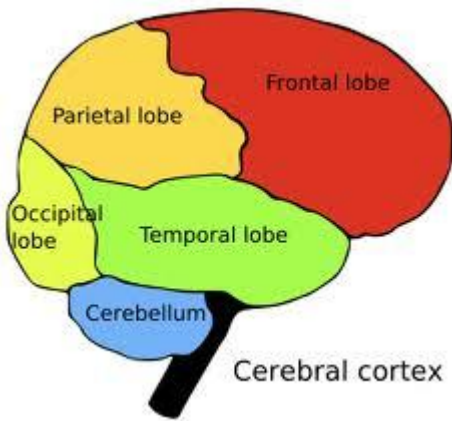
Bottom View

Front



Back

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In contrast, the typical math learning that depends solely on memorization mostly uses only one of the lobes of the brain—the temporal lobe (Duffy, p. 50). Eric Jensen, an internationally known educator, recognizes that, “it doesn’t matter to the brain whether it ever comes up with the answer. The neural growth happens because of the process, not the solution” (Duffy, p.57).

The Montessori math materials will produce a much deeper kind of learning that will stretch the brain to its fullest potential

—Michael Duffy (2008, p. 57).

If your child is four or under, research has shown that you can influence math success at school by simply counting objects (making sets of four to ten objects) with them *ScienceDaily (June 15, 2011)*.

Understanding the value of the Montessori math materials is your first step in supporting your child’s efforts at school. Take opportunities to have your child show you what he is working on in class. It is not possible for your child to

practice with the materials at home, so if you want to help your child, wait until her teacher tells you it is time to work on pure memorization of facts.

Having your child memorize facts and formulas before she has completed the sequence with the concrete materials is tempting because it may temporarily raise test scores and feel more familiar to you, but it will rob your child of the deeper understanding of math that comes with the use of the materials.

Be aware that your child’s teachers are watching to make sure the children are growing in their math knowledge when using materials in the classroom. There are situations where making corrections in simple counting would distract your child from the main focus of the work.

Do not expect your child to perform on little mini tests at home or be overly concerned with achievement test scores. The test is largely dependent on the memorization that is typical of other methods and does not align well with the depth of the Montessori materials.

Memorization is usually the easy part of math; the more difficult work your child does in the classroom is worth the time it takes!

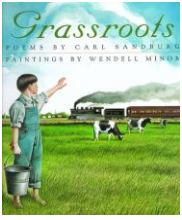
Quote; unquote:

An intimate acquaintance with some of the structural features of the human brain is thus seen to be not only necessary to the physician, but also to the psychologist, the educationalist, and the social worker.

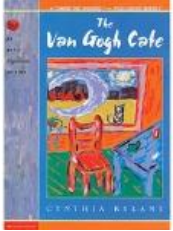
R.J.A. Berry,
Brain and Mind; The Nervous System of Man, 1928

More recommended books for special purposes

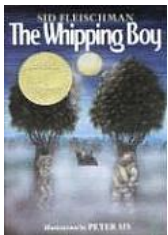
These are considered highly visual books but of longer length. The longest is 367 pages.



A painter's deeply felt images match a poet's timeless observations about the heart of America in this profound evocation of the texture of life in the Midwest. A sophisticated and beautiful book for all ages, *Grassroots* is Wendell Minor's tribute to Carl Sandburg's work and to the Midwest upbringing they both share. Poetry, 40 pages.



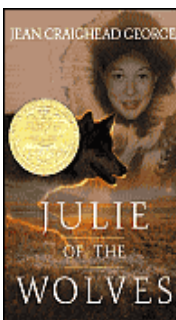
At *The Van Gogh Cafe*, "anything" can happen. Clara's dad owns the cafe, and she's seen it all--from food that cooks by itself to poems that foretell the future. This award-winning collection of vignettes by Newbery medalist Cynthia Rylant is a treat to be relished. So bring your appetite for the unexpected, because at the Van Gogh Cafe, your order of tea and toast comes with a side of magic; 53 pages.



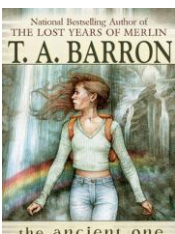
The Whipping Boy is a briskly told tale of high adventure, taut with suspense and rich with colorful characters. The whipping boy (who takes the Prince's punishments for him) and Prince Brat must at last confront each other. The bratty prince and his whipping boy have many adventures when they inadvertently trade places after becoming involved with dangerous outlaws. By Sid Fleischman; 89 pages



In *Because of Winn Dixie*, ten-year old Opal has just moved to Florida with her preacher father. At the grocery store Opal finds a large, ugly, homeless dog. Opal names him Winn Dixie after the grocery store. Together they make friends with Otis, an ex-convict who runs the local pet store; Miss Fanny, the librarian; and Gloria Dump, the lady the local children think of as a witch because of her jungle-like yard. By Kate DiCamillo; 182 pages.



Set in Arctic Alaska, *Julie of the Wolves* features wolves as main characters and how a 13 year old Eskimo girl, Miyax/ Julie gets lost on the tundra and interacts with them. A compelling adventure story, the book also teaches about wolf behavior and social structure. For upper elementary and middle school, and as a read-aloud for younger children. The wealth of tundra and Eskimo vocabulary is valuable for a science unit on the tundra or wolves or a social studies unit on Native Americans. By Jean Craighead George; 170 pages.



The central theme of *The Ancient One* is connections: among people, across time and cultures, and within the natural world. Barron develops this theme not only through telling two stories linked across time and culture, but also by the interesting and diverse characters he creates. In this extraordinary quest, combining high adventure and heroic drama, By Thomas A. Barron; 367 pages.

Just a mess of potage?

What is your net worth?

Have you ever wondered just what it is that makes up the bag of skin and bones we lug around every day?

In case you have, you will be pleased to know that the U.S. Bureau of Chemistry and Soils has anticipated the question and provided the answer.

They calculated the chemical and mineral composition of the human body and it breaks down like this:

65% Oxygen
18% Carbon
10% Hydrogen
3% Nitrogen
1.5% Calcium
1% Phosphorous
0.35% Potassium
0.25% Sulfur
0.15% Sodium
0.15% Chlorine
0.05% Magnesium
0.0004% Iron
0.00004% Iodine

Additionally, we have trace quantities of even more elements – fluorine, silicon, manganese, zinc, copper, aluminum, and arsenic.

Not too impressive a list, but the scheme seems to work pretty well.

One popular dollar figure used in evaluating these components is \$4.72.

