



River Valley Current

October 24, 2017 No. 489

"Autumn is a second spring when every leaf is a flower."
~ Albert Camus

School Calendar

This Week

Tuesday, Oct 24

6th Grade to Lost River Caverns

Wednesday, Oct 25

School Dentist Visit

Friday, Oct 27

Fall Assembly

6:30 pm

Saturday-Sunday, Oct 28-29

Undoing Racism Workshop at RVWS

Looking Ahead

Tuesday, Oct 31

Grades 1-3 – Halloween Harvest Festival

Grades 4-8 – Ancestor's Day

Wednesday, Nov 1

Día de Los Muertos Grade School Celebration

Thursday, Nov 2

Middle School Reading Group

7-8:00 pm

Saturday, Nov 4

5th Grade workday

How to Contact Us

info@rivervalleysschool.org

lc@rivervalleysschool.org

bot@rivervalleysschool.org

pc@rivervalleysschool.org

November Lunch Menu

The November lunch menu is attached to this week's Current.

Deadline for orders is: October 26th.

Our New Look

As you can see above, River Valley has a fresh, new look.

Many, many thanks to parent Kristian Summerer and Machinery Philly, who worked their magic to give us our new look, guiding us through a branding and identity process and creating the visual representation of our school for the future. Also thank you to David Lovely, Charlie Kelly, and Alex DiCandia for giving our website a fresh face, with a thank you in advance for the complete re-design to come!

Fall Assembly this Friday, October 27, 6:30 pm

Our Fall Assembly is coming up this Friday with students from grades 2-8 performing.

Parents and families from EC and 1st grade are welcome to attend to get a preview of what's in store. Hope to see you there!

Students are asked to be at school by 6 pm wearing Festive Attire, described in the Parent Handbook as:

For assemblies and other special occasions when faculty refer to Festive Attire, the intent is neat, clean and special; in general clothing that is "nicer than everyday school clothes" and reflective of the care and effort which has led up to the occasion.

Preferred attire includes dress slacks, khakis, skirts or dresses (no more than 4" above the knee), dress shirts/blouses, button-down shirts.

Specifically, no jeans or cargo pants, no torn clothing, no pictures on clothing, no text, no glitter, no sneakers, and please be mindful of high heels vis-à-vis performance requirements.

Lantern Walk – Friday, November 10th, 4:45 pm

On Friday, November 10th, Early Childhood, First and Second grade children will be celebrating Martinmas with an annual Lantern Walk.

Celebrating St. Martin's Day (Martinmas), or Laternelaufen, is a tradition preserved in Waldorf schools everywhere. Tied to the legend of St. Martin, a French soldier who gave half his coat to warm a beggar in need, the event includes walking through the school grounds along a path lit by luminaries, singing songs and carrying lanterns the children have made in school.

The Lantern Walk is hushed (aside from the singing), and reverent, but not at all somber. It is a beautiful procession of lights at dusk symbolizing the turn of the season and the carrying of inner light into the darker months of the year.

Martinmas Coat Drive

As part of River Valley's celebration of the legend of Saint Martin we will once again be sponsoring our Annual Martinmas Coat Drive. Please consider donating your gently used coats and jackets. Our art teacher Sharon Ferguson is organizing the drive through the not-for-profit organization, One Warm Coat. The coats received will benefit Community Services for Children in Allentown (<http://www.cscinc.org>).

New or gently used women's, men's and children's coats are all welcome. **Children's sizes 0-5 are especially needed.**

A drop box will be located in the school lobby from **November 1st - 18th to receive your generous donations!**

Thank you Sharon for helping to create this wonderful way for RVWS to support to our greater community!

RVWS Open House – Saturday, November 11th

Our Fall All-School Open House is on Saturday, November 11th at 10 am. This is an important outreach event, and we are hoping to show off our supportive community to prospective families. Here are answers to some questions which may arise in considering your attendance:

My child already attends River Valley- why should I come to the Open House?

The annual Open House at River Valley is a wonderful opportunity to see the school from a new perspective. The entire faculty will be there to show their classrooms and speak about the Waldorf curriculum. You will also see and hear from some of our amazing alumni and their parents about how Waldorf education has influenced their lives.

If you are a parent of a young child, the Open House gives you a chance to learn more about what happens in the grades, speak with grade school faculty members, and share experiences with parents of older children.

If your child is in the grade school, the Open House is a great way to learn about what is ahead in future years: learn about how science is taught in the middle school, inquire about literature in the higher grades, or find out about fine arts.

If your child is in middle school, the Open House is a great time to speak to parents with high schoolers about how their Waldorf child adjusted to a mainstream school or find out which of the surrounding private high schools have best suited other Waldorf families.

Ok, that sounds interesting; I'll attend the Open House. Why are you asking me to bring a friend?

90% of families who choose Waldorf education for their children do so because they learned about Waldorf from a friend or family member. The recommendations of our community members are the best resource we have to grow a strong school. Attending the Open House is a wonderful way to show your support for River Valley. Bringing a friend is icing on the (vegan, gluten-free, all-organic) cake!

Will there be snacks?

Of course! What better way to mingle than with a cup of coffee and a cookie?

We hope to see you there!

Sincerely,

River Valley Waldorf School Admin Team

RVWS SKI CLUB

Last chance to sign up for Ski Club. Sign up deadline is this Saturday, October 28th!!

Come join us this winter for a great time on the slopes at Blue Mountain Ski Resort. The Ski (and Snowboard) Club is a great way to enjoy 6 weekend night visits to the mountain. You can go any weekend night, Friday, Saturday, or Sunday from 4 pm to 10 pm. There are different packages that include rentals and/or lessons.

Prices are as follows:

Lift only \$150

Lift and Rental \$215

Lift and Lessons \$215

Lift, Rental, Lessons \$260

Helmet Rental \$30

The dates for lessons are set for - Jan 5, 12, 19, Feb 2, 9, 16.

Children any age can sign up but they must be at least 8 years old to participate in the group lessons. Parents are responsible for their children's transportation to and from the mountain and for supervision while at the mountain.

For those of you who are ready to hit the slopes, please use this link to join the RVWS Ski Club:

<https://webstoreski bluemt.com/?groupid=cc2c5834-2c63-44ee-b7d5-a484e7795673>

Any questions, please contact Christine or Mary Aherne 267-614-5021 or cmaherne@epix.net, or Ed George 908-884-7029

Kim John Payne

If you attended our evening on "Social Inclusion" with the wise and brilliant Kim John Payne last Saturday and have a moment, please send a general understanding, response or powerful message that you gathered from the talk and model presented. We can publish some in the Current next week so all can benefit.

Please email responses to info@rivervalleysschool.org.

This evening arose from the hearts of servant leaders in our community with the hope that RVWS would touch many lives and for this we are grateful.

From Administration

Safety at Dismissal Time

When you pick up your children at dismissal time please make sure you keep them with you. If you would like to visit with other families and have the children play, go to the front playground or the lawn in front of the garden and enjoy yourselves. The area in front of the school is not the spot for socializing at this time of day. Buses and cars are pulling in and out. Adults milling about, children playing, climbing and running creates a sense of chaos and the bus drivers feel very unsafe. Even one accident would be too many! We love our vibrant community and all of the fun that goes along with it, so please make sure the fun takes place in a safe location. Thank you.

Calendar Update

The evening performance of the Shepherds Play has been moved from Tuesday, 12/19 to Monday 12/18. The two performances will be on Monday, December 18th at 7:30 pm and Wednesday, December 20th at 11:30 am.

Open House Lawn Signs

Open House lawn signs are available in the lobby. Take one home to let your neighbors know about our school! Postcards and flyers are also available if you would like to leave one at your local coffee shop, yoga studio, lunch spot, etc.

Waldorf in Puerto Rico: Escuela Micael

AWSNA is asking each family in an accredited AWSNA school to give a small donation (\$10 or less) simply to help Escuela Micael keep its doors open and continue to offer Waldorf education until such time that their communities can stabilize. Imagine all the good...
<https://www.gofundme.com/shym9p-escuela-micael-hurricane-maria>

A Test of our Emergency Broadcasting System

Later this week we will be testing our emergency phone call system that we use in inclement weather. If school is either delayed or closed because of snow you will receive a phone call as well as an email between 5:30 and 6 am.

In the next few days we will send out an email followed by a test call. If you receive the call on a number you do not want us to use or don't receive a call on a number you do want us to use, please let us know.

Fall High School Open Houses

The following is a list of upcoming open houses hosted by schools where RVWS alums have enrolled after graduating.

Abington Friends School

Our Fall Open House will be on Tuesday, November 7th at 9:00a.m. (Election Day) Attend an Open House to meet your admission representative, hear from Head of School, Rich Nourie, and interact with current students, parents and faculty. The Saturday event is more robust in information. The Weekday event is so that you can also see classes in action. Register for one or both events.

George School

Sun Oct 29, 1:30 PM - 4:00 PM

Meet teachers and students and take a close look into what George School offers for students who value academic rigor, enjoy collaboration and creativity, relish athletic and artistic pursuits, and appreciate the ideals of service, social justice, and diversity. *The program will begin promptly at 2:00 p.m. Please allow time to register at the George School Meetinghouse; registration will open at 1:30 p.m. Parking is available at the Fitness and Athletic Center on Farm Drive, across from the Meetinghouse.*

(Continued on next page.)

Lehigh Valley Charter Arts

Tuesday, October 24, 2017

Doors open at 5:30pm for tours. Open House Presentation in Charter Arts Theatre begins promptly at 6:30pm. (Please be sure to arrive before 6:30pm!)

Kimberton Waldorf School

Wednesday, November 8, 2017, 8:30 to 10:30am

Discover the High School: The High School at Kimberton provides a rich, rigorous, academic experience for students in grades 9 through 12. We will visit each grade during main lesson to experience a bit of our academically diverse high school curriculum. We will have an opportunity to hear about some of the unique experiences that our students participate in, including international exchange, outdoor education, social service, college counseling, vocational practicum and electives. Please contact admissions@kimberton.org

The Lotus School of Liberal Arts

November 7, 2017 @ 5:30-7:30 pm (Re-scheduled)

Come visit our unique high school and see what a mindfulness-based education looks like.

So many of our clients and students have difficulty listening with kindness to those they disagree with. They even have difficulty listening to themselves! Find out how a brief and daily practice in yoga, martial arts, or mindfulness help all of us settle down and listen with an open mind and heart. In these contentious times, a little extra listening can make a big difference.

The Lotus School of Liberal Arts invites you join in this interesting and important discussion with its principal, Peter Ryan, M.Sc, a longtime teacher and psychotherapist. Peter holds three black belts in Zen Sword and brings a wealth of practical skill to the challenges of working with young people.

From the Faculty

What the Children are Learning:

First Grade – Language Arts

Second Grade – Language Arts

Third Grade – Math

Fourth Grade – Norse Myths

Fifth Grade –Geometry

Sixth Grade – Minerology

Seventh Grade – Age of Exploration

Eighth Grade – Geometry

Marigold Update

Upon reflection, we have decided to ask families to bring in fresh cut marigolds Tuesday Oct. 31st (Halloween) to decorate our alter. This way, we will avoid disrupting the plants with a transplant at this point in their growth. The marigolds can be picked now before the frost, placed in freeze bags and thrown in the freezer to be kept fresh for Nov. 1st. We can't have too many marigolds! We're hoping to make a grand mosaic of fresh marigolds to decorate our alter this year.

Children are also welcome to bring a picture, drawing and/ or favorite fruit of a deceased loved one to display on the alter on Nov 1st.

Thank you!

Profesora Workman and Mrs. Goldstein

Last Chance to Donate - We're almost there - \$6,280 of \$6,500 has been raised.

Dear Friends of the Santiago Family and Friends of Puerto Rico,

Almost three weeks have passed since Hurricane Maria's rampage over Puerto Rico, and because so many roads remain impassable, too many Puerto Ricans, young and old, remain cut off from the aid arriving in San Juan.

Euclides Santiago's eighty-nine year old mother, Luz Alicia Ortiz, and his brother, Wilfredo Santiago, along with Wilfredo's family, live in Juana Diaz, a town in the south of the island. Living alone, Mrs. Ortiz remains in her home of 50 plus years since Maria. As is true for everyone living in and around Juana Diaz, she is without electricity; she has no refrigeration or air conditioning, and, even more difficult, no access to her well water. Water supply in this area is sporadic. She is dependent on others to bring her potable water every day. Complete darkness at night is also a significant problem and potentially dangerous for an eighty-nine year old woman who must find her way from bedroom to bathroom multiple times each night. Euclides' brother and family are able to look in on her each day, but they, too, lack electricity, refrigeration and dependable water supply. Procuring and delivering water for the two households each day is a cumbersome, time-consuming job for son Wilfredo.

Friends of Euclides Santiago have encouraged him to seek a broader base of financial support for his family in Puerto Rico than he alone is able to provide. We friends are, therefore, seeking to raise \$6500 that will cover the cost of two small generators, necessary supplies (lanterns, batteries, etc.) and shipping fees. These purchases will make an enormous difference in the daily lives of Euclides' family in Juana Diaz. Without this support, we fear it will be months before their difficult circumstances will be relieved.

Euclides has found a way of shipping the generators through a family member in the military that will assure their safe arrival. 100% of the donations will be applied to the \$6500 goal; no donation is too small. When the \$6500 is raised, we will remove our request from this GoFundMe site. Let's join together to reach our goal quickly.

On behalf of Euclides, wife Kris, and friends of the Santiagos, a heartfelt thanks!
Laura Birdsall

<https://www.gofundme.com/santiagohurricanefund>



From Parent Council

Winter Fair

River Valley's Parent Artisan Market

At this year's Winter Fair we would like to host an artisan market featuring the parents and families of River Valley. If you are a crafter/artist with inventory or believe you would like to participate with 10+ items, please contact ivy Berrocal at: 201-694-5166 Karunagoddess@gmail.com

More Winter Fair Info

Parent Choir

Rehearsals for our Winter Fair performance begin this Sunday!

The full schedule is below. All are welcome—no experience necessary. Really. Please join us!!

To be added to the mailing list, email andywander@yahoo.com. Questions? Look for Kira Willey or email kirawilley@rcn.com.

Sunday, Oct 29, 3 PM

****the 10/29 rehearsal ONLY will be at the Bader's: 165 Geigel Hill Rd, Erwinna, PA: look for the thatched roof, but we're in the barn. Please squinch together when you park! All other rehearsals are at school****

Sunday, Nov. 5, 3 PM

Sunday, Nov. 12, 3 PM

(tentative) Saturday, Nov. 18, 3 PM

Sunday, Dec. 3, 3 PM

From the Community

Show Your Love for Frenchtown Park!

The Borough of Frenchtown is asking its extended community - all who love and enjoy "creek" park - to consider making a donation towards our improvement project. The community has put together a wonderful design that updates our park and keeps some of our favorite older playground pieces. Thanks to a generous matching grant from the Fargo Family Foundation, your gift will be doubled. If we can raise \$7,500 by the end of October, they will give us \$7,500!

Can you make a gift today? Donations of all sizes are needed and appreciated. Gifts of \$1,000+ will receive a bench plaque. Just four benches remain for this special recognition for your family or loved one! Give online: <https://www.youcaring.com/boroughoffrenchtown-920009>

Or send a check payable to "Borough of Frenchtown" with "Park Fundraiser" in the memo to:
Borough of Frenchtown, 29 Second St, Frenchtown, NJ 08825

Questions? Contact Holly Low at holly.k.low@gmail.com or 732-233-4136.

Spiritual Science and Technology Retreat

December 1-3, 2017, Threefold Educational Center, Chestnut Ridge, NY

This event is for anyone with a strong connection to anthroposophy who is actively engaged inwardly or outwardly with the issue of technology. The retreat's objectives are:

- Deepening our understanding of Rudolf Steiner's spiritual scientific ideas about technology and human and earthly evolution.
- Sharing perspectives, experiences, and research questions concerning technology with each other.
- Considering how individuals in the various practical fields of anthroposophy can collaborate together, and with other like-minded people from various backgrounds to contribute to the ethical use and development of technology for the betterment of humanity.
- Sharing ideas and plans for future technology related activities and events.

Schedule: The retreat begins with registration at 4:00pm on Friday, December 1, and ends at 12:30pm on Sunday, December 3. A pre-retreat meeting for First Class members of the School of Spiritual Science on the topic of technology will take place at 2:00pm on Friday, December 1.

Fee: Sliding scale, \$75 to \$125 (includes dinner on Friday, lunch and dinner on Saturday, and snacks).

REGISTRATION DEADLINE: NOVEMBER 15. For a full description of the retreat, and to register, please go to:

<http://www.threefold.org/events/tickets.aspx>

Looking for an Apartment in UBE?

A 1.5 bedroom apartment is available on River Road in Upper Black Eddy, PA, with access to tow path and hard wood floors. No dogs. \$1050 month includes heat. For more information call Clover Michini's (Grade 2) Aunt Kelly at 908-392-5653.

Agatha Christie's "The Hollow" – at Solebury School

RVWS Alumni in the cast: Teva Skovronek (2014), Safwa Ozair (2016), Ava Smith (2016), Dominique Wander (2016)
November 2, 3, 4 & 5 – tickets on sale now: <https://solebury-school.ticketleap.com/>

These shows sell out quickly! Check your calendar and purchase your tickets.

An unhappy game of romantic follow-the-leader explodes into murder one weekend at The Hollow, home of Sir Henry and Lucy Angkatell, arguably Christie's finest comic grande dame. Dr. Cristow, the Harley Street lothario, is at the center of the trouble when, assembled in one place, we find his dull but devoted wife Gerda, his mistress and prominent sculptor Henrietta and his former lover and Hollywood film star Veronica. Also visiting are Edward and Midge whose romantic assertions are likewise thrown into the mix. As the list of romantic associations grow so does the list of potential suspects when Cristow is shot dead. Nearly everyone has a motive but only one of them did the deed. (The play was adapted by Agatha Christie from her novel of the same title, The Hollow.)

Lenape Chamber Ensemble Concert in the Round

For children ages 4-12, featuring music by Bach, Telemann and Couperin. Refreshments and Instruments demonstrations.

Saturday, November 4th, 10-11 am at Delaware Valley University Life Sciences Auditorium, 700 Butler Avenue at State Street and Rt. 611, Doylestown, PA 18901.
Children: \$2, Adults Free.

Lenape Chamber Ensemble

Friday, November 3, 8:15 pm, Upper Tinicum Lutheran Church, 188 Upper Tinicum Church Rd., UBE

Sunday, November 5th, 3 pm, Delaware Valley University Life Sciences Auditorium (See above for address.) Music by Bach, Telemann, Vivaldi, and Couperin

Adults \$18, Students and Seniors \$15, Children \$5

For information: 610-294-9361 or www.lenapechamberensemble.org

From the Artyard in Frenchtown

Saturday, Nov. 4th, 8:00 PM -An Evening with Photojournalist, Cinematographer, and Survivor, Jared Moosy. Screening of his films Witness: Libya, A Lucky Man, and Chester, PA. Conversation with Moosy after the screenings

Saturday, Nov 11th - Sunday, Nov 12th, Price: \$75 for both days (Price does not include meals)

Music Workshop in the Art of Improvisation with Karl Berger and Ingrid Sertso. A hands-on two-day event.

For more information go to: artyard.org.
Artyard, 62A Trenton Ave. Frenchtown, NJ 08825

Two European Tours with Waldorf/ Anthroposophical Themes

Offered by Sarnia Guiton of Sophia Services

In Search of Knights Templar in Portugal - 4/21-5/5

The Knights Templar are well known for their activities in Jerusalem and the Holy Land in the Middle Ages following the First Crusade. Their demise in 1307 is also well known. What is not so well known is the belief that their activities in Portugal, working with Bernard of Clairvaux and Portuguese Templar Kings over several generations, formed a Kingdom of Conscience with laws that are echoed in Rudolf Steiner's Threefold Social Order.

In Search of the Future in Hungary, Romania & Bulgaria 7/28-8/20

Anthroposophy was planted in these Eastern European countries early in the last century. Communism kept it underground prompting it to grow strong roots. At the end of that era, it grew strong and firm above ground and blossomed with joy that it could now be free. We have known none of that in the West. On this tour we will explore what has been happening anthroposophically in Eastern Europe in the last 25 years, and if we have anything to contribute or to bring back home from our experience.

For more information, see the school bulletin board.

The Lotus School of Liberal Arts Open House and BRAINsmART Therapies, a free workshop led by Dr. Nancy Lubow

85 Sherman Rd Ottsville PA 18077

Tuesday, November 7th 5:30-7:30 pm – Re-scheduled

A 'cross modal' Creative Arts Problem-Solving Approach for Students and Educators, BRAINsmART is an arts-based approach to learning and healing the mind, emotions and body. The principles of a cross modal creative arts approach are organized around the principle that 'creativity integrates the brain and heals the mind'.

This workshop will help participants link the four different perceptual modalities: auditory, visual, kinesthetic and verbal to couple the learning experience with creative-receptive states of being. These skills are the tools students need to redirect scattered attention and chaotic emotions into the visual-spatial world of the right brain. This process not only improves attention and focus, but increases cognitive ability, emotion regulation, and distress tolerance. RSVP:484-312-0011 pete@lotusla.org

From: KQED News

Why Kids Need to Move, Touch and Experience to Learn

By Katrina Schwartz

When students use their bodies in the learning process, it can have a big effect, even if it seems silly or unconnected to the learning goal at hand. Researchers have found that when students use their bodies while doing mathematical storytelling (like with word problems, for example), it changes the way they think about math. "We understand language in a richer, fuller way if we can connect it to the actions we perform," said Sian Beilock, professor of psychology at the University of Chicago.

Consider this word problem:

Two hippos and two alligators are at the zoo. Pete the zookeeper feeds them at the same time. Pete gives each hippo seven fish. He gives four to the alligators.

In an experiment on third graders, students were divided into two groups. One group read through the problem twice. The other group acted out the story as they read it, physically pretending to feed fish to the hippos and alligators as they read the problem. Both groups of students were asked how many fish the zookeeper fed to the animals.

The answer:

"Kids who acted out the story did better on this problem," Beilock said. The kids who read the problem often got "eleven" as a solution. They had missed the word "each" in the problem. But because the acting kids had physically mimed giving each hippo seven fish before moving on, the difference was ingrained.

"What was important was matching the words with specific action; that led to enhanced learning," Beilock said. "And after they'd acted it out they could actually do it in their head and get some of the same benefits."

THE BODY AND THE BRAIN

Scholarly study goes back a long time in history, but in terms of human evolution, many of the academic skills now required for successful functioning in the world are fairly new to the human brain. As neuroscientists investigate how humans learn, they often find that newer skills and aptitudes are mapped onto areas of the brain that also control basic body functions. Increasingly, this work is helping to illuminate neurological connections between the human body, its environment and the process of learning.

"In order to really engage our students and help them perform at their best we have to move beyond what's happening in the head," said Beilock at a Learning and the Brain conference. "We have to go beyond that." This area of study, called "embodied learning," is not new to many educators. Maria Montessori highlighted the connection between minds and bodies in her 1936 book *The Secret of Childhood*: "Movement, or physical activity, is thus an essential factor in intellectual growth, which depends upon the impressions received from outside. Through movement we come in contact with external reality, and it is through these contacts that we eventually acquire even abstract ideas."

Increasingly scientists are proving Montessori right. Researchers are studying the body movements of children as young as four-to-six months old and have found earlier and more frequent movement correlates with academic learning down the road. Kids who could sit up, sustain "tummy time" longer and walk were all correlated with future academic success, even when researchers controlled for socioeconomic, family education and type of future education, among other mitigating factors.

"A very strong predictor of academic achievement was how early kids were moving, exploring their world," Beilock said. "When kids can explore their surroundings, all of a sudden, things change." Once kids are on the move the adults in their lives use directives and other more complicated language forms. As kids are coached by their parents, they begin to understand the directions and change behaviors. And once a child can do something on her own, she's more likely to internalize what's happening with others. "There is evidence that our ability to use our hands affects the structure and functioning of the brain," Beilock said.

"Encouraging kids to use their hands brings out unsaid, and often correct ideas, which then makes them more open to instruction and more likely to learn."

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As young children move and explore their worlds, they are learning through touch. Early bimanual training correlates with the robustness of the corpus callosum, a part of the brain that facilitates quick communication between the left and right brain hemispheres, Beilock said. This connection between using one's hands and swift communication in the brain may be part of the reason learning to play music is often correlated with math ability.

"Math is a very recent cultural invention," Beilock said. The part of the brain responsible for numerical representation also controls finger motion. Many children first learn to count on their fingers, a physical manifestation of the connection. The studies of very young learners have solidified Beilock's conviction that academic learning is inherently connected to the body.

GESTURING TO LEARN

A colleague of Beilock's at the University of Chicago, Susan Goldin-Meadow has done extensive research into how student gestures can indicate a more nuanced understanding of math than students are often able to articulate verbally. Goldin-Meadow did a lot of work around problems of equivalence, which children often struggle to understand. She found that often students gesture in ways that indicate they understand how to solve the problem even if they are simultaneously describing an incorrect solution.

"It's particularly helpful for teachers because it may give you insight into things students may not be able to express," said Goldin-Meadow at the same conference. Not only could gestures be a good clue for teachers, but when students produce what Goldin-Meadow calls "mismatches," meaning they are saying one thing and gesturing a different understanding, it indicates they are primed to learn. And, when teachers produce "mismatches" in their own speech and gestures, it helps students already in that primed state to learn by offering several strategies.

"Encouraging kids to use their hands brings out unsaid, and often correct ideas, which then makes them more open to instruction and more likely to learn," Goldin-Meadow said. She also found that showing two ways of doing a problem with speech had very little effect on learning, but showing two methods when one was in gesture helped learners.

And the connection between bodies and learning doesn't stop with the younger grades. Beilock studies how well students comprehend abstract concepts in high school physics. Many classes focus on listening to lecture, reading a textbook and doing physics problems. Beilock hypothesized that if students could feel an abstract concept like angular momentum on their bodies, they would both understand and remember it better.

She and her colleagues used a rod with two bicycle wheels attached to test their ideas. Students spun the wheels and then tilted the rod in different directions. As they changed the angle, the force they felt changed dramatically. In her experiment, one set of students got to hold and experience the wheel. Another group just watched the first group and observed the effects they were feeling. They were all quizzed on the material a week later.

"Those students who had more motor activation did better on the test," Beilock said. "And those students were the ones who got the experience." But what if one set of students was just better at physics? Researchers at DePaul University have replicated this experiment, strengthening the scientific link between hands-on experimentation and powerful learning.

ENVIRONMENT MATTERS

Just as body movement and involvement can have a huge impact on learning, so too can the spaces where we learn. While neuroscientists are starting to be able to prove this link with their experiments, this concept is nothing new. Philosophers, writers and practitioners of Eastern religions have long made the same connection between the power of nature to relax the mind and readiness to take on the world.

"When we are in nature, our directed attention has time to rest and replenish," Beilock said. That's important because focus is like a muscle that gets tired. One researcher asked students to take a walk through the downtown of a college town. They weren't asked to do anything in particular, but they naturally encountered a lot of stimuli. The other group took a walk in a natural setting. The nature walkers were better able to focus when they returned.

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Visual distractions apply to the classroom as well. Carnegie Mellon researchers recently found that when students learn in highly decorated classrooms, their gazes tend to wander, they get off task and their test scores suffer. Limiting visual stimulus is particularly important for very young learners who are still learning how to focus, and yet kindergarten classrooms are often the most brightly and densely decorated in an effort to make institutional buildings feel more cheerful.

THE BODY AND ANXIETY

One way to help students reduce test anxiety is to let them work it out through their bodies beforehand. Beilock did an experiment with freshmen high school students before their first final. She asked them to write down concerns about the test and connect to other times when they felt similar. They were told to be as open as they wanted and that their writing would be confidential. A control group of kids were told to think about what wouldn't be on the test.

This activity had little effect on kids who didn't experience much test anxiety. But students experiencing high levels of anxiety saw a six percentage point gain on their test scores. And, when Beilock analyzed those students' writing, she found the strategy was particularly effective for students whose writing revealed an eventual acceptance that the test was a minor hurdle, not the big scary all-consuming event they'd been worried about.

"We can start leveraging the power of our bodies to help us learn, think and perform at our best," Beilock said. Too often students are cooped up inside for six or more hours, sometimes without an adequate recess, and more likely than not, with little attention paid to how their bodies could be powerful learning tools in the classroom.