



River Valley Current

May 3, 2016 No. 444

"The fool doth think he is wise, but the wise man knows himself to be a fool."

- - William Shakespeare, As You Like It

School Calendar

This Week

Tuesday, May 3

Visiting HS Series in the Garden 3:30 pm

Friday, May 6

Grandparent's Day

Saturday, May 7

Mayfaire 11:00 am - 3:00 pm

Looking Ahead

Tuesday, May 10

Visiting HS Series in the Garden 3:30 pm

Wednesday, May 11

Parent Council High School Round-up 6:30-8:00 pm

Thursday, May 12

School Tour 9:00 am - 11:30 pm

EC Parent Enrichment Evening 6:30 pm

6th grade class play, Robin Hood 10:50 am & 6:30 pm

Friday, May 13

No School - Faculty In-service - Records Day

Saturday, May 14

EC Workday

Wednesday, May 18

8th grade Community Service Projects 6:30 pm

September, 2016 1st grade Class Meeting 6:30 pm

Thursday, May 19

Diversi-Tea 8:15 am

How to Contact Us

info@rivervalleyschool.org

lc@rivervalleyschool.org

bot@rivervalleyschool.org

pc@rivervalleyschool.org

See Inside for wonderful pictures from
Parent Stage!

Parent Council Corner:

Next PC meeting 5/18, 2:00 pm
in the Garden



Mayfaire - This Saturday May 7, 2016

The following items are needed from each family:

1. 20 Pocket fairy items (collection box in lobby)
 2. Colorful bright & pastel acrylic yarn (collection box in lobby)
 3. 2-3 bouquets of flowers (collected the day before Mayfaire)
- Please see your classroom coordinator if you have any questions.

Also, we are looking for entertainment, which includes singing, music, poetry reading & dancing from grades 3rd - 8th.

If your child is interested please have them sign up on the sheet located outside their classroom. Interested adults may contact Kira Willey (kira@kira.net) or Noah Jarrett (noah@noahjarrett.com)

Grandparents and Special Friends Day

In Early Childhood the celebration begins at 11:30 am with a picnic on the back playground.

In the Grade School guests are invited to arrive at 12:45 pm for a reception followed at 1:15 by an assembly for parents, grandparents and special friends. **Early Childhood families are welcome.** Please join us if you can.

Grade school students are expected to wear Concert Attire as described in the Parent Handbook.

RIVER VALLEY AUCTION GALA - SATURDAY, JUNE 4, 5:30pm BBQ, BLUEGRASS and FUN

This is the biggest night of our school year and this year promises to be a blockbuster!
Fantastic Auction Items and Great Friendship!
See Inside for more information.

From Administration

SNOWDAY IN MAY?!

Yes friends, River Valley is having a snow day in May. There will be no school on May 31, 2016.

The calendar for this school year had several days in reserve for emergency closures, most of which were not used due to our relatively mild winter. The faculty proposed adding a second Records Day to our calendar; both the LC and the AT have approved this request.

This additional Records Day will help make the remaining weeks of school a bit easier for all as teachers will not feel the pressure to take time away to work on year end reports and still be able to get them in, in a timely fashion.

For the 2016-17 school year, we will take the opposite approach – include 2 Records Days in the calendar, but remove one as a snow make-up day if we go over our allotted number of emergency closures. (Speaking of the 2016-17 school year, you will be happy to know that the calendar is in the final stages of refinement and approval and will be made public very soon!)

In the meantime, we wish you a wonderful, extra-long Memorial Day weekend (May 28, 29, 30 and 31)! We have pre-ordered sunshine, blue skies and pleasant temperatures for your enjoyment.

Courtyard Mowing Needed

The grass in the courtyard needs to be mowed before Mayfaire this Saturday. We have a lawn mower but could use a weed wacker as well. This is something that needs to be done periodically so if you are available, please let the office know.

Diversity Committee

We're happy to announce that a group of parents, faculty and administration have started a committee to explore issues of race, culture and diversity in our school.

We invite parents to join us on Thursday, May 19th for an informational, gathering of interest "Diversi-Tea" during morning drop-off.

Some questions we're contemplating and share with the community are:

- What has brought us to this committee? Why are we interested in this work?
- What experiences in our own biographies have affected our view of oppression, privilege, or inequality?
- What have been our experiences with issues of cultural competence, privilege, oppression, or inclusiveness at the school?
- What are our goals?

We look forward to beginning a community wide conversation around these questions, and using these questions as the mortar that will develop a strong foundation as the committee grows and supports the community.

This group's initial focus is race and we'd like to broaden our scope in the future. We've been working from a study of American Waldorf Schools called Paths Toward Racial Diversity by Vernon Dewey. One of our guiding quotes from the study has been by Michael Soule' who reminds us that "it is clear that when a school puts its intention for diversity into action, the results are positive. The schools that enjoy the greatest diversity are the ones that have paid attention to it in their development."

If you have questions, please contact any of us who have initiated this committee: Alison Goodman, Holly Low, Cindy Schretlen, TreeAnne McEnery, Molly MacDonald, Carol Diven, Laura Birdsall



RVWS Summer Camp

It's time to register for Summer Camp. There are four programs to choose from depending on the age of your child. Descriptions and registration forms are on the front desk and available on our website.

www.rivervalleyschool.org



The time is now!
Order your
2016
Yearbook

Pre-Order by **May 13th** for only **\$32**
After May 13th the price will increase **\$10**,
so drop your form
in the folder on the office door today!

Help us Find the Right People

Needed: An energetic cleaning team to keep our school clean. During the school year, 5-6 man hours, 5 evenings a week. During summer and breaks, 15-20 hours per week. Pay: \$12-\$14 per hour, must be able to pass background checks. Know of anyone? Call Lynne Allbaugh 610-955-5405.

Please Help Spread the Word

We have posters and postcards on the front desk for the Mayfaire. Please mail them, hang them in local stores, and share with friends. If you need a digital version contact me: rgoodyear@rivervalleysschool.org.

VISITING HIGH SCHOOL SERIES

RVWS is excited to present the first in a series of visitors from area high schools. The series is expected to continue this spring and into the fall. Be sure to watch the CURRENT for additional dates, as they are confirmed. If you'd like to learn more about what options are available to students when they leave RVWS, plan to stop by! Please RSVP to Cindy: stop in the office, call or email: cschretlen@rivervalleysschool.org

Tuesday, May 3, 2016 3:30pm, RVWS Alumni-Dad, Pete Ryan will introduce The Lotus School of Liberal Arts, Ottsville, PA. Tincum Art and Science is closing in June. The organization is restructuring and The Lotus School of Liberal Arts will open in September, 2016. The outlook is bright and full of promise here in Ottsville! TAS may be closing, but we're maintaining its best elements, and adding a complement of exciting new features that have been hand-picked by students, parents, faculty, administration, and thought leaders in education. We're putting it all together, and creating a brand new high school: The Lotus School of Liberal Arts.

Tuesday, May 17th, 3:30, Solebury School, Solebury School is a place where young people can explore the intellectual world and grow as students and as thinkers, where they can think creatively and be creative, and where all students have the chance to participate in all facets of the school – academics, athletics, clubs, and the arts. It is a place where students find the confidence to be who they are and to let their talents and personality enhance the school. It is a place where each individual is known and where faculty mentor students in and out of the classroom so that they become not only the best students, but the best people, possible. We have been fortunate to watch many River Valley graduates thrive here, and are excited to continue to work with you and your children.

What's Next? - School after River Valley - May 11, 2016

Many of us have questions or would like to hear about what's next after River Valley in our child's educational career. For instance: Public, or private? What high schools are out there to choose from? What financial aid options exist? How is the transition from here to there?

Parent Council is hosting a roundtable discussion on this very topic at RVWS on Wednesday, May 11, 2016 from 6:30-8:00 pm. We are inviting alumni parents (and alumni themselves, if they're available) who have experience with both public and private high schools. We plan to gather some literature from various schools to have on hand that evening. Please send us questions that you have on this subject so that we can make sure we have answers for you. email to pc@rivervalleysschool.org

From the Faculty

What the Children are Learning:

First Grade – Language Arts

Second Grade – Language Arts

Third Grade – Social Studies/Shelter Building

Fourth Grade – Local History & Geography

Fifth Grade – Ancient Greece

Sixth Grade – English/Class Play

Seventh Grade –Renaissance

Eighth Grade – Meteorology

8th Grade 5K Run

Perhaps you have noticed the 8th Grade gearing up for our weekly training runs after drop-off or before pick-up? Wondering what we're up to? We are training to run the Finish the Fight 5K on Saturday May 14 at 8:30-9:45 am at Dimmick Park in Hellertown, PA. It's the same race Miss Hummel's former class ran in 7th grade a couple of years ago and it is a small, fun run to raise money for the American Cancer Society as part of their Relay for Life event. There is a \$25 registration fee per runner (price increases after April 30) which includes a free tech running T-shirt commemorating the race. We would LOVE to have as many River Valley families as possible join us! Here is the link to register: <https://runsignup.com/Race/PA/Hellertown/FinishTheFight5K>. Email Renell (renell@rcn.com) with questions or to let us know to look for you there!

From the Board

RIVER VALLEY AUCTION GALA - SATURDAY, JUNE 4, 5:30pm

BBQ, BLUEGRASS and FUN

This is the biggest night of our school year and this year promises to be a blockbuster!
Fantastic Auction Items and Great Friendship!

Did you love the First Grade Bluegrass Band at Parent Stage? Then Come On Home on Saturday, June 4 for more!
Great Food by Grandy's Kitchen, Nellie Rae's and a Parent BBQ Cookoff between John Wesp, Tony Stuart and Paul Smith! That's HOT! Chicken, Brisket, Steak Tacos, Pork, Salmon!

Tickets can be purchased online at https://rvws.ejoinme.org/Auction_Tickets. We need your donations in the days ahead. Please bring your auction items to the school lobby no later than Wednesday May 18 and please be sure to fill out your donation form completely. Forms are available at the front desk. For reservations or questions about the Auction Gala, email auction@rivervalleyschool.org. See you on the 4th!

From Parent Council

Parent Council Meeting with Other Area Waldorf Schools

Rebecca Brown and I had the opportunity to attend the first meeting of Regional Waldorf Schools Parent Associations held at the Philadelphia Waldorf school on Saturday April 16th 11:00-4:00. First let me say what a beautiful school! This is their first year in their new location in the Germantown area of Philadelphia. Their school is in an old Episcopal church that has been renovated so beautifully and shows what a school community can accomplish for their facility.

Schools in attendance included Kimberton, Baltimore, Susquehanna, Philadelphia and Princeton Waldorf schools. We spent the afternoon sharing how Parent Councils work in each school, what projects they take on and their relationships with other leadership bodies. We found many similarities and also have learned some really great ways other schools handle things like communication and community building. We hope to implement some things we have learned and will support annual meetings of our parent groups. We look forward to hosting a meeting at River Valley. Please email pc@rivervalleyschool with any questions or to get more involved with PC here at RVWS.

Clare Brunell

From Development

Our Annual Fund Giving Tree is Growing!

Thank you to the following individuals for generously supporting the Annual Appeal!

Jennifer and Paul Kovach
Alfred Bader
Friends of Bridgeton School
Violetta and Matthew Goedtel
Microsoft Matching Gifts Program
Mary (Tertia) Gale and Elan Leibner
Sally Rich Designs
Gene Fox
Judith B. and Wayne Huey

Jill Welch and Ross Welch
Kristyn Lederer
Joan Yax-Fox
Cindy and Rick Eberts
Richard Kroth
Lyn and Tom Shields
Jeffrey and Charlene Chapman
Rebecca and Alex DiCandia
Tracy and Brian Fly

Edward George
MaryBeth Healy
Nichols Martial Arts, Inc.
Clare Wargaski-Brunell and Carl Brunell
Alison and Ben Goodman
Beverly and Italo Sessegolo
Stephanie Spencer
Julia and Joseph Thomas

A leaf has been placed on the Giving Tree for each of these donations. Each class, Grandparents, friends, faculty and staff have their own leaf color. Watch our tree bloom, from the roots to the canopy, as our Annual Fund grows!
Did you know that your tuition only accounts for a portion of the funds needed to operate our beloved school? Because we are a tuition-based school, we are not eligible for most grants and subsidies that other schools may qualify for. Additionally, we offer financial assistance for many of our families. Our ability to invest in our programming, support our faculty, serve our students, and maintain our facilities depends upon additional funding from events, gifts and sponsorships. This is why we ask our community to support the Annual Fund each year. In the next several weeks, you may receive a letter, note, email or call asking for your support of the Annual Fund. Please give what you are able so we may provide all the wonderful things that enrich your children's education in a way that no other school can. Thank you for your continued support and generosity!

-- Development Committee

From the Capital Campaign Committee

The 5 W'S of our "Building Our Future" Capital Campaign

WHAT: Right-Size Our Building

- 8 full-size grade classrooms & 4 full-size Early Childhood classrooms
- Double size of All-Purpose Room
- Space for full complement of Waldorf specialty classes (music, arts, Eurythmy, etc)

WHY: Increase Enrollment for Financial Sustainability

- 20 years of running down our mortgage-free, gifted facility without adequate reinvestment and structural maintenance
- Underpaying/under-supporting our highly valued, highly gifted, devoted faculty
- Without increased enrollment we continue deficit spending from purposefully "low" tuition to promote economic diversity and (allowed but undesirable) under - enrollment to launch the middle school
- Simple math: need tuition revenue of fully-enrolled classes — 24 students per 8 grades classes and 16 children per 4 EC classes — to fund a budget that covers our daily operating expenses

WHEN: Now — We Are Out of Space and Out of Time

- Annually shuffling under-enrolled classes into undersized classrooms
- All-Purpose Room insufficient space for community-wide events
- New roof and Middle school bathroom renovations already completed with campaign funds

WHO: You — We Can Only Move This Mountain Together

- 20-years "young" with no endowment, no alumni network of donors, geographically "centrally-isolated" with few established relationships to outside community
- Stretch donations spread out over time multiplied by many families in our community amount to sizable sums of money
- Seeking additional outside support but must demonstrate that we have "skin in the game" (100% participation goal)
- River Valley exists for us today only because of the hard work and generosity of our predecessors. It is our turn to pay it forward to serve the next generation of families.

WHERE: ...Do I Get a Pledge Form?

- Robbie's desk in the lobby
- Pledge forms allow for gifts over a 3 to 5 year period
- Pledges can begin immediately or anytime between 3 - 5 years
- Completed pledge forms can be mailed to "RVWS Attn: Capital Campaign" or placed in Charlene's mailbox in the office

Building & Grounds

School Work Days

Below is the calendar of the upcoming workdays. Please note that some changes have been made from the school calendar. Please RSVP to Mary K. Till (mtill@rivervalleysschool.org), to let us know if you will attend. This way we can plan what projects can be undertaken. Mary K. Till and Lynne Allbaugh - Building and Grounds

2015-2016 Work Days

May 14 - Early Childhood and 5th grade

From the Community

River Town Radio Theatre Teen

Summer Workshop July 2016

- Always wondered what it would be like to perform on the radio?
- Looking for something different to do this summer?
- Join RTRT for a Radio Theater Summer Workshop.

When: Tuesday and Thursday evenings July 5, 7, 12, 14 and 19 at The Book Garden in Frenchtown from 6:00pm to 8:00pm. THEN on July 21 st – a LIVE performance on WDVR!

Who: Teens interested in discovering the world of radio theater! Cost: \$125 per student

A portion of the tuition will go to support WDVR radio.

Ask Caroline or Robert for details. Space is limited.

caroline@bookgarden.biz robert@bookgarden.biz

Register Today!

At Yoga Loka

Yoga for Healthy Aging

Thursdays 8:30 am-9:30 am with Deb Kline

Begins 5/5 for 4 weeks, \$55

Calm Stress and Anxiety Through Hypnosis

Thursday 5/12 with Judy Consentino. 6:30 pm- 8:30 pm.

\$35

TRE (Trauma and Tension Releasing Exercises) and Meditation

with Bonnie, Wednesdays 5/18 and 5/25, 11:00 am-12:00 pm. \$15 per session

[www. Yoga-Loka.com](http://www.Yoga-Loka.com) to register

Special offer for River Valley Families:

I recently completed a training in a therapy called Craniolsacral Fascial Therapy. You can read about it on founder Barry Gillespie's website:

<http://gillespieapproach.com/>.

This approach is similar to TRE, which I have been working with for more than 2 years. I am particularly excited about CFT due the success rate it has had with targeting chronically tight and often painful places in the body, healing concussions and sinus issues and TMJ, helping with headaches and traumatic injuries and regaining range of motion that is compromised from surgeries and scarring. Children benefit immensely from this work. Barry specializes in treating children and has seen a lot of positive results.

As this is still a relatively new modality for me I am offering a limited number of first sessions at half price, \$42 for a session that will run about 45 minutes.

If you are interested in scheduling a session please send me an email at: Bonnie@yoga-loka.com

Muck and Gold Camp Homebody - for ages 8-11

A creative movement, physical theater and visual art extravaganza! Run by Christine Bodwich, (mother of Loie Gallagher, G-3). June 27 - July 1, July 5 – 8. Stockton, NJ.

For details and registration: muckandgold.com

Eggs for Sale

Sustainably raised, Pastured, GMO free eggs. Chicken \$5, Jumbo duck \$8. Durham Glen Farm 6200 Durham Rd Pipersville Shawn (973)207-0848.

Roxey Ballet Fundraiser

Help our school raise money while supporting the arts in our community. Purchase one or more tickets to Roxey Ballet's production of the classic stories, The Pied Piper of Hamelin & Carnival of the Animals. Performances May 6th at 10 am, May 7th at 1pm, May 8th at 1pm, held at The College of NJ (2000 Pennington Rd. Ewing, NJ)

www.roxeyballet.org -- Use code RVWS16 when purchasing.

MUSIC for your Child

RVWS alumnus and currently Berklee College of Music student, Kris Ramakrishna, is offering Guitar lessons (beginners to advanced, all styles), Music theory and music history, Introduction to composition, song writing with professional software. From mid May to mid August at your house or ours in Riegelsville. Reasonable rates! For more information please email stramak@aol.com or call 610 217 6942

La Leche Leagues of Hunterdon County, NJ and Hillsborough/Bridgewater present:

"Portraits of Motherhood" Mini Session Fundraiser Saturday, May 14 from 9 am - 4pm **Additional times may be added.**

20 minute mini session for Mothers & Children

\$150 Sitting Fee includes 3-4 digital images

LLLHC/LLLHB Member Price: \$125 with 5-6 digital images

Photographer Hilary Murphy is donating her time & talent to support this fundraiser. Sessions held on

location at her private & peaceful 30 acre farm in

Pittstown, Hunterdon County, NJ.

www.hilarymurphyphotography.com

REGISTER TODAY:

<http://www.signupgenius.com/go/30e0a48a9ab2ea2fb6-breastfeeding>

Proceeds from this fundraiser will benefit two local LLL groups in their support of breastfeeding mamas.

Ottsville Traditional Arts Center

Every Wednesday

Open Jam with Richard Finch

6:00-8:00 pm • \$5 suggested donation

More at ottsvilletradarts.weebly.com • 250 Durham Rd. Ottsville Pa.

For Sale

2006 Mini Cooper, Original Owner, Charcoal Grey, Sun Roof and Moon Roof, New Tires, Inspected, mileage 105,000. Great Car! \$4,000.00 Plug-in Refrigerator and Bike Rack available too. Call (610)847-2178

The Art of Equitation

Jen Diedrich (mom of Addison in 4th grade) is offering a lesson program individually designed for each rider's expectations, goals and dreams. With attention needed to be safe and have FUN. Safety is always the first priority.

Jen is a lifelong equestrian with a passion for teaching that brings out the best in beginning and developing young riders. Students focused on the show arena as well as those who simply love riding and understanding horses are very welcome. Lessons, trail rides, horse shows and camp offered. Ages 5 and up. Reach Jen anytime at 215-603-9999.

Housing Needed

We are looking for a 2 bedroom house, cottage or barn apartment to rent as early as mid-May, beginning of June. Sunlight and space to grow a garden are welcome! We have great credit, personal and work references, and ability to do work on the house in addition to (or as part of) the rent. Any leads are welcome!! Thanks so much for your help, Dayana, Sofia & Valentina Henwood. Please contact us at 917-297-2733 and jazziando@gmail.com

Rummage and Bake Sale

Thursday and Friday, May 5 & 6 10 am-8 pm and Saturday, May 7 Bag Sale All Day - 9 am-4pm Sponsored by St Luke's U.C.C. in Ottsville, located at building at the intersection of Routes 412 & 611.

Donations are welcome. Drop items off at the building at the intersection of Routes 412 & 611 from April 12-30. Any other days, drop off items on the porch at the schoolhouse of St. Luke's U.C.C. Church on Durham Road in Ottsville. Clothing, jewelry, books, housewares, plants, toys, and small furniture. No computers or TV's accepted. For more information call: 484-357-5274 or 215-479-2724.

House for Rent

For the School Year 2016-17 (September-June) Partly furnished 2-story 19th century house right on the Delaware Canal in Upper Black Eddy. 2 bedrooms and a study upstairs, 1 bath, kitchen and living room downstairs, powder room, fireplace. 1 acre lot. No smokers, no dogs. Asking \$1300/month, may be negotiable. Contact Neysa Garrett 925-254-3054 - home, 510-828-5018 - mobile.

Spring cleaning and ready to pass on old baby items?

I'm In search for boy baby clothing and accessories especially anything wool specifically, wool soakers! Our little one is due in early June and we would love to give your old baby items a new home. I'm minutes from River Valley and I am happy to come to the school to pick anything up. You can reach me at Theadringus@gmail.com. Gratefully, Thea Dringus

Costa Rica Rental

Casa de Iguana is a private home built and designed by Ivy Giacchino-Berrocal and her husband Mauricio Berrocal (parents of Lila in the Moon Room). The home is located in Herradura, Costa Rica and is all family owned. It is a two story home with a large comfortable sitting area on first floor with wrought iron spiral staircase leading to a 2nd floor and wraparound porch with views of the mountains, 2 large fully equipped stone tiled bathrooms on both floors, open kitchen layout! The home sleeps 10, possibly more.

For more information or to schedule time at Casa de Iguana, email karunagoddess@gmail.com or call 201-694-5166.

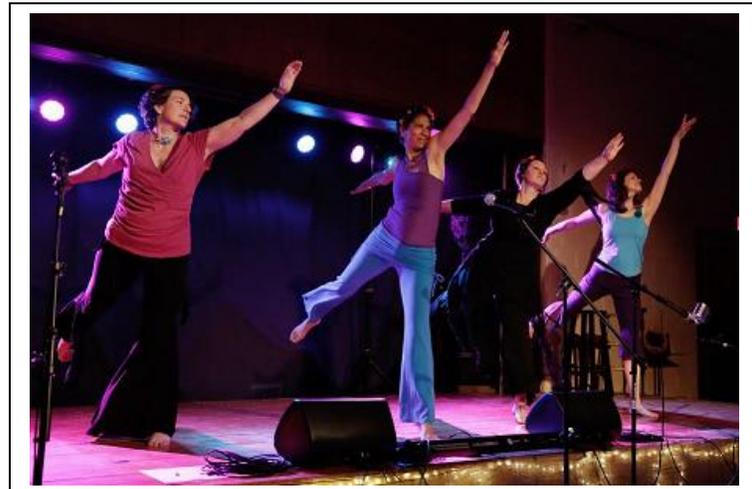
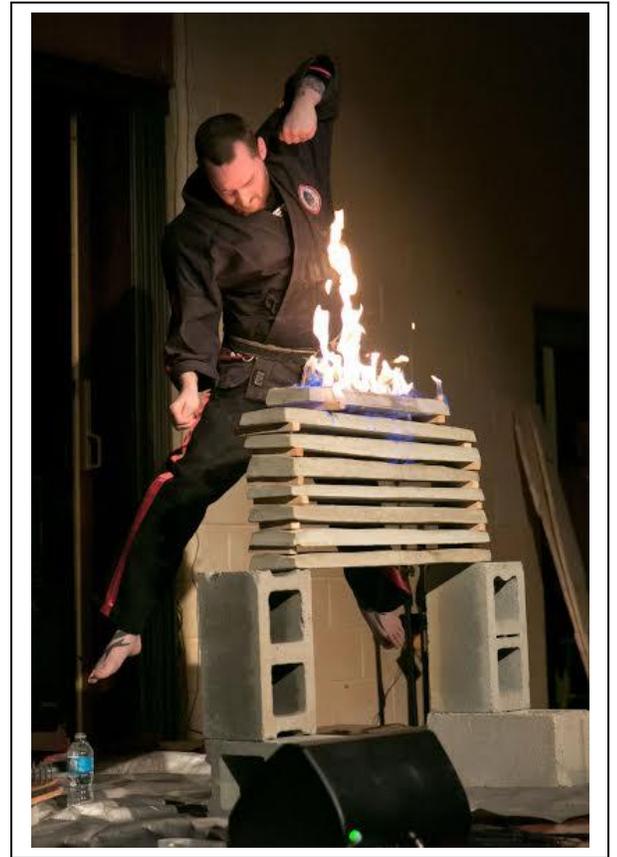
You can view pictures here:

<http://www.thekarunashala.com/Casa-de-Iguana.html>

Join Youth Orchestra of Bucks County

Audition for placement in a YOBC ensemble!
8 large ensembles (3 bands, 3 strings, 2 full orchestras)
8+ chamber ensembles: string quartet, woodwinds, brass & percussion Open to students in grades 3-12.
Auditions May 14-15, 2016 at Bucks County Community College, Newtown
Special Events: Winds coaching from US Coast Guard Wind Quintet, Master class with composer/musician Chris Brubeck, Philadelphia Orchestra field trips
Special Gala Celebration and Performance with Chris Brubeck and Triple Play ...and more Now Scheduling Auditions for all instruments, all levels, all ensembles.
REGISTER ONLINE WWW.YOBC.ORG
Questions? info.yobc@gmail.com 215.945.5105

Parent Stage 2016





Knife Care

by McCaslin Miles

A knife is the most important tool in your kitchen, so taking care of it is just as important. With proper maintenance a knife will stay sharp and last much longer than if the knife is handled incorrectly. Here are six ways to keep your knife sharp:

1. Never put your knife in the dishwasher. The hot water can cause the knife to lose its hardness and refuse to keep an edge.
2. Always wash your knife right after you use it. Keeping your knife in water will rust the blade although at first it may not seem obvious. Clean your knife with warm soapy water and then dry it with a soft clean cloth.
3. Do not keep your knife in a drawer unless it is in a sheath, otherwise it could get damaged and chipped.
4. The most common mistake people make with knives is using cutting boards made of glass, ceramic, marble, etc. This dulls the blade on the first cut, and makes your knife unusable. Boards made of wood and plastic are much better for cutting as they are much softer on the edge of the knife.
5. Steeling the knife. Most knife sets come with a long steel rod used for steeling the knife. To use the steel simply slide the knife in a sweeping motion against the steel at about a 15 degree angle five to ten times on each side.
6. A dull knife is much more dangerous than a sharp one. That's why having your knives sharpened professionally will save your fingers and make cooking much easier.

McCaslin Miles is in the sixth grade at RVWS and operates his own knife-sharpening business. For information on his sharpening please see the flyer on the bulletin board or email him at edgesharp2003@gmail.com.

From: medixpress.com

The importance of Keeping a Beat: Researchers link ability to keep a beat to reading, language skills

The findings of a Northwestern University study of more than 100 high school students lend proof to the surprising link between music, rhythmic abilities and language skills.

The study—the first to provide biological evidence linking the ability to keep a beat to the neural encoding of speech sounds—has significant implications for reading, according to Nina Kraus, director of Northwestern's Auditory Neuroscience Laboratory.

Previous investigations found a link between reading ability and beat-keeping, says Kraus in a study published in the Sept. 18 issue of the *Journal of Neuroscience*. Previous research has established a link between reading ability and neural response consistency. "By directly linking auditory responses with beat-keeping ability, we have closed the triangle," Kraus says.

The study demonstrates that accurate beat-keeping involves synchronization between the parts of the brain responsible for hearing as well as movement. Where previous research investigations focused on the motor half of the equation, Kraus and co-author Adam Tierney focused on the auditory component.

Because hearing sounds of speech and associating them with the letters comprising written words is crucial to learning to read, the Northwestern researchers reasoned that the association between reading and beat synchronization likely has a common basis in the auditory system.

To investigate the relationship between beat-keeping and auditory processing, 124 Chicago high school students visited Kraus's lab and were given two tests. In the first, they were asked to listen to a metronome and tap their finger along to it on a special tapping pad. Tapping accuracy was computed based on how closely their taps aligned in time to the tick-tock of the metronome.

In a "brainwave test," the students were fitted with electrodes measuring the consistency of their brain response to a repeated syllable. Across the population, the more accurate the adolescents were at tapping along to the beat, the more consistent their brain response was to the speech syllable.

"This is supported biologically," Kraus says. "The brainwaves we measured originate from a biological hub of auditory processing with reciprocal connections with the motor-movement centers. An activity that requires coordination of hearing and movement is likely to rely on solid and accurate communication across brain regions."

Accurate beat-keeping's implications for reading and language skills simply make sense, according to the co-authors. "Rhythm is an integral part of both music and language," Kraus says. "And the rhythm of spoken language is a crucial cue to understanding."

For example, you might slow down your speech or stress one syllable more than another to emphasize a particular point. And minute timing differences distinguish consonants, such as "b" and "p." Hearing that timing distinction is necessary to identify the sounds with the letters that represent them.

"Musicians have highly consistent auditory-neural responses," says Kraus. "It may be that musical training—with its emphasis on rhythmic skills—can exercise the auditory-system, leading to less neural jitter and stronger sound-to-meaning associations that are so essential to learning to read."

Kraus, who is the Knowles Chair in Northwestern's School of Communication and professor of neurobiology in Weinberg College of Arts and Sciences, is conducting longitudinal investigations that look directly at the effects of music training by measuring beat synchronization, response consistency, reading and other language skills in children as they progress through music instruction from year to year.