Puget Sound Council of Teachers of Mathematics

December 19, 2018







Ethnomathematics: Pushing Back Against K-12 Traditional **School Mathematics** Winter Dinner - February 11, 2019 Saraswati Noel, UW Math Ed. Doctoral Candidate

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Calendar

<u>February 11, 2019</u> Bishop Blanchet HS Saraswati Noel
<u>May 20, 2019</u> Bishop Blanchet HS
Tacoma Convention Center/Murano Hotel



President -Jane Bissonnette Presidentelect/Social Media - Traci Cotton

Joyce Frost- Program/ Newsletter, Sharon Young-Secretary, Art Mabbott- Treasurer/ NCTM Rep, Joe Frost- Web Page, Kim Schjelderup, Saraswati Noel, Angela Ensmingers, Lynn Adsit - Membership.

Editor: Joyce Frost (frostjoycee@gmail.com) President's Letter - Jane Bissonnette

We are very fortunate to have board members that are committed math educators and also actively involved in promoting math in our community. Here are a just a few things our board members have been doing the past few months.

Joe and Joyce Frost, Sharon Young and the rest of the conference committee have been busy working on the 2019 NW Math Conference to make it the best conference ever. The theme is We All Count. Besides many publicity materials, Joyce created a clever geometric advertisement puzzle. Sharon has been corralling volunteers and spearheading planning and Joe built the website: nwmathconf.org/2019. Save the Date! October 10-12, 2019.

Angela Ensminger coached the Unified Robotics teams at St. Madeline Sophie. Students with disabilities pair up with other students to build a robot that fights in robot sumo battles. At the State championships in November, her teams won 2nd and 3rd place as well as several other awards.

Traci Cotton hosted another successful Math Night Celebration at her school. With 330 students attending her elementary school, a whopping 180 adults and children participated in the event. One parent told her, "Math Night is a tradition. We wouldn't miss it!" Enjoy her tips for hosting math night celebrations.

Lynn Adsit, Art Mabbott and Kim Schjelderup offer TI User Groups at Mercer Island High School once a month to talk curriculum, pedagogy and technology. These sessions are tailored to the interests of the attendees - give them a visit in the new year! Art Mabbott has continued his work with the Department of Defense Education Activities. Lynn Adsit has also been presenting at NCTM conferences this school year and is an AP Reader/Grader for Statistics.

I am so grateful for all the work the board does to promote math education. Hopefully their extracurricular activities will spark some inspiration for you. If there is some way we can help, please let us know.

- - - Jane Bissonnette, (jbissonnette@bishopblanchet.org)



PSCTM Winter Dinner, February 11, 2019 Ethnomathematics: Pushing Back Against K-12 Traditional School Mathematics - - - Saraswati Noel, UW Ph.D. candidate

This workshop aims to push back against current US schools eurocentric forms of mathematics as well as exploring the concept of ethnomathematics, the relationship between math and culture.

Participants will engage in mathematical activities that center family, community, indigenous and ancestral knowledge and learn about current efforts to bring Ethnic Studies curriculum to mathematics classrooms in Seattle Public Schools to connect and improve academic success for all students. Saraswati Noel is a former math educator at Seattle World School, which primarily serves recent immigrants to the US. She currently is getting her Ph.D. in Math Education at the University of Washington. Saraswati is passionate about immigrant rights and is committed to diversifying educational materials to create a space where all voices are able to contribute to the growth and development of public pedagogy.





"Notice & Wonder Woman" Button courtesy of Annie Fetter at NCTM Seattle

"Are You Cold" seen on PSCTM Facebook page!

Participants will engage in mathematical activities that center family, community, indigenous and **58th NWMC - October 10-12, 2019 WE All COUNT**

As the Program Chair for the conference, I have been working with some fabulous PSCTM members to start the process of selecting Keynote, Featured, and regular speakers for the conference. In this work, I am extremely grateful for the help of Dr. Gini Stimpson, Dr. Sharon Young, Art Mabbott, Angela Ensminger, and Jane Hunter (who is also our Publicity Chair). Gini Stimpson and I sat down with Dr. Elham Kazemi, from the University of Washington, Seattle Campus recently for additional help. She sent me two great blog posts in preparation for our conversation. Enjoy these two thoughtprovoking articles. I think they will inspire you as well.

Marian Dingle: On Being Welcoming https://t.co/6GCspYI2mh?amp=1

Meriah Nichols: 3 Reasons to Say "Disability" Instead of "Special Needs"

https://www.meriahnichols.com/3reasons-say-disability-instead-specialneeds/?fbclid=IwAR3jE1qNKjDk5kyhWt eel2PG3BvSoUvkGaMmUxA14p1bZlQs 4NdBxfZ2DLM

Joyce Frost; Program/Newsletter Editor

PSCTM Newsletter

Math Fun!

Here's a fun math trick. Take any three-digit number and multiply it by 7. Then take your result and multiple it by 11. Take your final result and multiple it by 13. You will get your original three-digit number back repeated. Magic?! Right! Why doesn't this trick work with two-digit numbers or fourdigit numbers? It is all about place value! Look at the pattern of numbers you get when you multiple 7 x 11 x 13 and see if you can figure out how the trick works. What would you have to multiply your random two or four-digit number by to get the same repeating pattern? Jane Bissonnette, President

Another related math trick involves division! Take any three-digit number such as 543. Create a six-digit number by repeating the digits, as in 543,543. Divide 543,543 by 7. Don't worry about the remainder - there won't be one! Divide this answer by 11 and again, don't worry about the remainder which will be zero. Finally, divide this answer by 13. If you have correctly done your division, the answer should be 543 that you started with. Why does this work? This is a great way to get students working with division and they love the lack of remainders! **Joyce Frost**

Math Night Celebration!

Last week I was given a great compliment! My friend told me, in front of several colleagues, how successful my school's Math Night Celebration was. As the organizer, and hostess, I was so glad to receive that compliment!

I have been asked to share some ideas of what makes our event a success. Here are five things that I think serve me well.

- Know your purpose. I like to call our event a celebration, and we focus on our shared love of mathematics. I have rented a kit from the *Imagine Children's Museum* the past several years. A docent brings all the materials needed to play and explore with math concepts at 10 learning stations. Staff, students, and guests are encouraged to wear math themed clothing (with patterns, numbers and shapes) to our celebration. This is a great way for all participants to feel part of the fun.
- 2. Feed them, and they will come. People are so busy! Make attending your event easier by providing snacks or dinner. This will "free" up time needed for fast food, or to make a meal.
- 3. Advertise the event. I create flyers to send home in our weekly communication folders. Typically, the flyer is sent home on two occasions. I'll send the note home to save the date, about 3 weeks out, and then send it again the week before the event. We utilize our school reader board, we send an automated call to all families, and an announcement is made at our school wide assembly. I request a spot on a PTA meeting agenda so I can share my purpose with the PTA members. Our PTA members kindly offer to help, but I remind the parents and caretakers that I really want them to come and have fun with their children.
- 4. Get great help! In my district, teachers have a number of "call backs" to attend per our teacher contract. I offer a sign-up as soon as possible to find out if I will need more volunteers. I also invite former staff members and teacher friends. Side note: Retired teachers are simply awesome volunteers! At our Math Night Celebration, I like our families to play and explore the mathematics together. I like to walk around and welcome families during the event and support the volunteers.
- 5. Have fun! Celebrate your success! After the event, I review the stats by checking sign in sheets, pulling names for door prize winners, and checking volunteer feedback. I make notes about things that were successful, and things to change for next year.

This resource from OSPI might be helpful too. http://www.k12.wa.us/TitleI/ParentFamilyEngagement/

Traci Cotton, Elementary Math Coach PSCTM President-Elect, Social Media





Are you ready for a dynamic conference where you can learn the newest and best teaching ideas for mathematics K-16? Then put October 8-10, 2019 on your calendar now so that you can reserve those days to attend the Northwest **Mathematics Conference in Tacoma** at the Tacoma **Convention Center and** nearby Murano Hotel. There will be dynamic speakers, STEMfocused sessions, miniconferences within the conference, and even a day for 3-hour workshops. Clock hours and STEM clock hours will be available.

Sharon L. Young, Ph. D. 2019 NWMC Chair

• What role would you like to help with on the planning committee?



Another great post was shared on the **PSCTM Facebook page & Twitter feed!**

For lesson ideas, learning opportunities, and more please follow us on Facebook and Twitter. Spread the word and invite your fellow educators to follow us! --- Traci Cotton, PSCTM Social Media

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NCTM Seattle Regional Conference, November 28-30, 2018 Highlights! Enjoy my take-aways from the conference!

Dan Meyer: Designing for Mathematical Surprise (blog.mrmeyer.com or @ddmeyer). Dan had two great quotes by Nitsa Movshovitz-Hadar, "Every mathematics theorem is surprising. If the claim stated in the theorem were trivial it would be of no interest to establish it." "It is the mathematics teacher's responsibility to recover the surprise embedded in each theorem." As an example of how text books share theorems or 'key concepts', he referenced Star Wars and shared how we might have learned a key concept. "The Empire Strikes Back -Key Concept: Darth Vader is Luke Skywalker's father." Below is a problem that he shared with us to 'work on' while he pulled up the next set of slides for his presentation (sneaky). See if you can discover why we did not all get the same answers!



Small triangles have altitudes of 10 m. and upper triangle has an altitude of 15 m. Upper triangle base is 24 m; the bottom numbers are both 5 m.

Dan Finkel & Katherine Cook: Making and Breaking Conjectures: Using Counterexamples to Supercharge the Thinking Process

They shared with us the following statements: Making and breaking conjectures is at the heart of thinking mathematically. It also leads us to robust, connected experiences of mathematics, by: 1) Forcing us to clarify our previous understanding and 2) Moving us from our old understanding into exploring new ideas and territory.

We then happily spent an hour learning to understand how this works in the classroom.

OP	PORTUNITIES FOR THINKING	OPTIMAL PRACTICES FOR THINKING
1	problems	begin lessons with road problems
2	how we give the problem	use verbal instructions
	how we answer questions	answer only keen thinking mustice
4	room organization	defront the classroom
5	how groups are formed	form visibly random groups
6	student work space	use vertical pon-permapent surfaces
7	autonomy	foster autonomous activos
8	how we give notes	have students do meaningful notes
9	what homework looks like	use check your understanding quantities
10	hints and extensions	manage flow
11	how we consolidate	consolidate from the batters
12	formative assessment	consolidate from the bottom
12	cumpating assessment	show where they are and where they are going
15	summative assessment	evaluate what you value
_14	reporting out	report out based on data (not points)

Peter Liljedahl: *Building Thinking Classrooms* (@pgliljedahl #vnps #thinkingclassroom)

Judy Larson: Contributing and Belonging to the MTBoS: Enhancing the Professional Learning Network. This workshop focused on various ways to use social media to enhance teaching and to share effective mathematics teaching practices and resources. I learned about their highly successful Twitter Math Camp - TMP. (Judy.Larsen@ufv.ca @JudytaLarsen)



WHAT IS PLAY GOOD FOR?

Transforming students' relationship with mathematics

	In School	In play
How do I know what to do?	SOMEONE TELLS ME	I DECIDE BASED ON RULES, TOOLS, AND GOALS
How do I know when something's right?	SOMEONE TELLS ME	I DECIDE BASED ON WHETHER IT WORKS, LOOKS GOOD, APPEALS TO OTHERS
How do I fix my mistakes?	SOMEONE TELLS ME	I FIX IT, TINKER WITH IT. OR REVISE MY GOAL
What relationship do I develop with mathematics?	PASSIVE, RECEPTIVE	ACTIVE, EMPOWERED, CURIOUS

Christopher Danielson and Melissa Gresalfi gave the opening Keynote for the NCTM Seattle Regional Conference: Play is the Ninth Mathematical Practice.

STEM Clock Hours: (http://www.k12.wa.us/STEM/ClockHours.aspx)

Beginning on September 1, 2019, renewal applications for residency, professional, and continuing teacher and CTE certificates must document completion of at least 15 clock hours, or at least one goal from an annual professional growth plan (PGP), with an emphasis on STEM integration to meet this renewal requirement. STEM integration is the authentic combination of at least two of the STEM components (science, technology, engineering, mathematics). The requirement applies to the following endorsement areas: Elementary education, Early childhood education, Middle level mathematics and science, Secondary mathematics, Secondary science, Designated sciences, and Career and Technical Education.

Providers of STEM-related continuing education should design workshops/ course offerings to ensure educators will meet the renewal requirement by answering "YES" to all of the following questions.

Will the STEM activity have an impact on STEM experiences for students?
Does the STEM activity provide examples or resources to use with students or with other educators?
Does the STEM activity provide examples or resources about STEM-related career choices to use with students?

Please check out the above OSPI website for more information and clarification.

Department of Defense Education Activities (DODEA)

The past four summers I have had the privilege to work with Pre-K - High school teachers of Mathematics on military bases, camps and forts around the world. The Department of Defense Education Activities (DODEA) has adopted their own version of the CCSS - Mathematics. DODEA is the worldwide organization that runs the schools that support the children of our military personnel in Europe, the Pacific, and the East Coast of the US. Because the parent(s) move or get reassigned throughout the year, maintaining consistency in learning and teaching is a real challenge for these teachers. The importance of consistency led their director to push for consistent standards - The Career and College Readiness Standards for Mathematics - 5 years ago. These standards as well as The Mathematical Practices were introduced and incorporated into their practice over the past three years.

Each summer, teachers spent two days with facilitators (like me) learning a subset of the practices and standards to use the next academic year, followed by a day each quarter with just-in-time activities and units from their new curriculum. DODEA also established an online community so teachers could work with others in similar positions from around the world. As a lone geometry teacher, you could chat virtually with other geometry teachers who might also be struggling with the same concept/lesson/activity. This virtual community was monitored and staffed 24/7 by resource folks from DODEA and The Dana Center, so help was available when needed.

I spent my first summer with 28 PreK -5th grade teachers, a principal and an assistant superintendent at Fort Bragg, NC. They were so excited and ready to start their journey. The following three summers, I worked with middle school and high school teams at Osan Airbase in South Korea, Spangdahlem Airbase in Germany, and Sasebo Naval Base in Japan. I went in with some trepidation - I was one of *them* - a middle/high school teacher. We know all of the answers...we are the experts. But, each of these teams came in ready to grow together as a team. The conversations each summer were very deep and rich, centered around what the kids should know when they arrive, what they need to learn during that year, and where their learning was heading, always focusing on the standards, the practices, and the progressions. The Dana center created a number of tools that helped with the work, but it was our job to help the teachers implement them along with their other work. The part I enjoyed the most was doing real mathematics, pushing the envelope of understanding and knowledge. It was a truly wonderful experience.

Anytime you can become a resource for our mathematical teaching community, you need to do that. Whether traveling overseas to work with teams of elementary, middle school, or high school teachers or presenting at our regional NW Math Conference next fall in Tacoma, you should get involved and support all of our learning.

Art Mabbott, PSCTM NCTM Representative