


## Learn to Play, Play to Learn Mikaela Wingard-Phillips - Zoom Presentation

Renew your PSCTM membership online here!

## PSCTM Winter Presentation!

## Monday, February 8th 5-6:30pm

Play has the magical quality of transforming our perspectives as well as that of our students. Did you know that all different types of play release positive neurochemicals such as Dopamine, Oxytocin, Endorphins, and Serotonin? That's what I like to call a daily DOSE of play; and it can do some other great things for us as a learning community too, increasing curiosity, creativity, communication, and cooperation. Great tools to cultivate in the quest for growth mindset and honestly helping each person find their inner mathematician.

## Mikaela Wingard-Phillips,

 MIT Secondary Mathematics, Math 'n Stuff General Manager, Certified Play Expert, Founder of Playing on Purpose
## President's Letter - Traci Cotton

Season's greetings PSCTM members,
Have you heard about the planets aligning on December $21^{\text {st }}$ ? The same day as our Winter Solstice, Saturn and Jupiter will be visibly closer in our sky than they have been since medieval times in 1226 . Astronomers calculate that the two planets will be only 0.1 degree apart and will look like an elongated star in the sky. During these trying times, and dark months in the Pacific Northwest, this isn't the only light I look forward to. I love the way I see the light of the "I get it!" moment from my students. I love the light I see when a colleague shares a teaching success with me. I love the light I see when a family member tells me about the connection a student made about our lesson from the day.

As we continue to teach and learn during these uncertain times, I hope you will look for the light that brightens your day. Thank you for being a member of the Puget Sound Council of Teachers of Mathematics.
We hope you find some great ideas and inspiration in this edition of Puget Soundings that will illuminate your days.
Wishing you joy and good health,
Traci Cotton


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## PSCTM Fall Zoom Presentation - October 19, 2020 Summary Unpacking Assumptions \& Defining your Principles in Equity Oriented Math Teaching

"Equity work in any field is principled work. When one does work committed to equity, they are guided by a set of principles, such as normalizing discomfort and sitting with tension and uncertainty.
We believe it is crucial to explicitly state our commitments and name how they guide our work in unpacking and disrupting injustices in our classrooms. "
Saraswati and Starlie began by challenging and reframing some common assumptions about mathematics.
They had me right there, as these are some of the most prevalent and harmful assumptions which I spent many years trying to disprove and fight against. Do some of these bring out the same reaction in you?
Here is a subset of these assumptions:

- Some people are "math people," and some aren't
- You need to learn the basic skills before you can engage in complex and conceptual work.
- Math is unbiased.
- Math problems only have 1 answer/solution.
- Math is independent work.
- "Smart" students can't learn from "low" kids.
- Some math classes are more important than others (Calculus vs Statistics, Algebra vs Geometry)
- School math doesn't relate to life.
- Students that are struggling should only be shown ONE way to do something.

They allowed us time in small group chat rooms to discuss these and identify ones that resonated with us. Then, we were encouraged to 'Brainstorm our commitments' to equity in relation to teaching \& learning math. And we were encouraged to remember that this is an on-going process.
They closed with some offers for extra resources which I know that you will enjoy checking out.
Rochelle Gutiérrez's talk on Rehumanizing Mathematics, Frances Su's talk on Mathematics is for Human Flourishing, Danny Martin's talk on Mathematics of African American Children, and Kaneka Turner's talk on Invitations to the Math Party. - - Joyce Frost


Presented by:
UW College of Education Doctoral Students Saraswati Noel and Starlie Chinen
 oval shows the new data used to generate the dotted line.
I believe with a very, very high probability, that the vote count today will put Biden ahead in Pennsylvania. Then further ahead.

Bowen is a Park City Math Institute Instructor and friend. I watched his statistical analysis in real time following the election. Math (Statistics) definitely played a starring role in this election. - Joyce Frost

In New Hampshire, before the state's four electors voted for Biden at the State House in Concord, 13 -year-old Brayden Harrington led the group in the Pledge of Allegiance. He had delivered a moving speech at the Democratic National Convention in August about the struggle with stuttering he shares with Biden.

Priya Frank, UW Communications, '04, American Ethnic Studies, '04, and a Master of Arts in Cultural Studies, 'll has had a sixyear career at the Seattle Art Museum (SAM). She has a brand-new job - Director of Equity, Diversity and Inclusion, something only a few museums around the country have.

A Kids' Guide to Coping with the Pandemic Here's a resource that might make a difference for a kid in your life.

## Membership Scholarship Awards!

Congrats are in order! PSCTM awarded the Diane Lustyk Elementary Education Membership Scholarship to Dani Gray, a ${ }^{\text {st }}$ grade teacher, from Jackson Elementary School in Everett, WA.
PSCTM awarded the Reg Waddoups Secondary Education Membership Scholarship to Tyler Ulin, a MS math \& science teacher, from St Madeleine Sophie in Bellevue, WA.
We are so happy to celebrate the addition of these two new members!

I am truly so thankful and excited to be able to be a member PSCTM! I am excited for the opportunities to collaborate and continue to grow as a teacher through this program! Thank you so much for your kindness and for this opportunity! -Dani

Congratulations to Dani Gray (left) \& Tyler Ulin (right)


## Save the Date! James Stallworth will be our May 17, 2021 Spring PSCTMM Presenter!

## @StallworthPCMS

James Stallworth is the current 7th Grade Principal at Princeton Community Middle School and a recovering math geek that has been known to frequently relapse. Enjoy checking out his newsletters.

Kitchen Table Conversations \#1 https://www.smore.com/hwmik

Kitchen Table Conversations \#2 https://www.smore.com/557pk

Kitchen Table Conversations \#3 https://www.smore.com/p9g67

Kitchen Table Conversations \#4 https://www.smore.com/ux6q4


## Too bad 2020 is a Leap Year.

 Who would want it to be one second longer than it has to be? - - Joe FrostWe have leap years to keep the calendar year roughly tracking with the astronomical year so that Easter comes in Spring, Christmas comes in Winter, and the equinoxes come on roughly the same date every year.

Before Julius Caesar, the Roman calendar was something of a mess. It consisted originally of ten months, (later twelve,) starting in Spring in March (the month of the war god Mars), and had extra days added in February or between months as needed to keep it roughly synchronized with the seasons. The actual number of days between the start of the month (new moon, or kalends) and the middle of the month (the Ides) was traditionally kept consistent, but the days between the Ides and the next kalends could vary and the new month might not actually occur on a new moon. Political terms of office lasted for a year and the authorities could manipulate the calendar to help their friends. Caesar "reformed" the calendar to make his third year of consulship 446 days long! Caesar's new calendar averaged 365.25 days per year, counting an extra day at the end of February every fourth year. Augustus tweaked it by swapping a day from the end of the year to the sixth month and renaming the month "August."

After 1500 years, the calendar had drifted enough that Easter was no longer near the spring solstice, which created a problem. To solve it, Pope Gregory decreed that the calendar would skip 10 days starting October 5, 1582 and skip Leap Day on years divisible by 100 but not by 400 . That made the year average 365.2425 days long, which is very close to the solar year, in which the earth returns to each point in orbit every 365.2422 days.

Gregory's calendar correction was not universally recognized, at first, so historical records from the next few centuries can be confusing. A blatant example is Russia's 1917 October Revolution, which occurred at the end of September. Oktoberfest, which starts in September, is actually scheduled as ending on the first Sunday in October, so the name makes sense in the new calendar.

Thankfully, 2020 was not a year where we also needed a Leap Second, which are needed every few years to synchronize atomic clocks with the sun's noon position because the Earth's rotation isn't quite regular and is gradually slowing down. The interval for adding leap seconds is not regular nor easily predicted, so it really is luck that we don't need one this year. - - Joe Frost


## Dr. Kizzmekia Corbett

"Kizzmekia Corbett is a 34-year-old viral immunologist, and she might help save the world. She leads the coronavirus vaccine research at the National Institutes of Health, and the mRNA vaccine they've developed in collaboration with Moderna has reported an astounding 94.5\% efficacy."


Corbett addressed vaccine hesitancy while speaking with CNN's Dr. Sanjay Gupta on the December $10^{\text {th }}$ podcast "Coronavirus: Fact Vs. Fiction."

## Kami - The Online Math Tool We've Been Looking For! - Jane Hunter

As the holidays rapidly approach, I think we are all searching for any way we can to keep kids engaged as well as being able to demonstrate what they know to us. Desmos has been a godsend .... but there are days where I just want to use a simple worksheet and have the kids be able to write on the worksheet. Can't lesson planning be made a bit easier for all of us?
Kami may be that answer! It is a new program and many districts have bought licenses for it so that teachers and their students can use it free of cost. It is a simple program that allows you to open a pdf or a word document up so that students have tools to write on it and submit them to you! Here's how it works...

1. Take any worksheet you have in either pdf or digital form
2. Open it in Kami
3. Save it onto your Google Drive
4. Attach it to any assignment
5. Make sure you remind students to Open it with Kami


Simplify. Your answer should contain only positive exponents.

1) $4^{2} \cdot 4^{2}$
2) $4 \cdot 4^{2}$

Across the top of their worksheet it will say "Turn It In". The tools it allows the students to use are wonderful. They can use their mouse to Draw. They can also type with a regular textbox anywhere on the page or use an equation editor that is pretty user friendly to type answers.


There is even a section where students can leave you a video. I've had students do the work on their paper and take a video of their work - works for me! Student can use a line tool to create shapes if they please. You can even insert a short video clip you created right on the worksheet to illustrate how to do a particular problem. When I took the training, I was expecting a learning curve, but I have been pleasantly surprised with the ease that both my students and I have found with this product. I hope Kami can improve your class experience!
Best of wishes as we close the year down for the holidays.!---Jane Hunter


> Mickey's hands are at the same position at midnight. When is the next time in the day for that to happen? Be precise. -- Carl Cotton

Check out the solution on the next page!

Answer: advance the minutes just a bit* on the clock below.
*by just under 30 seconds


The solution occurs exactly when:

Solution: Convert the time to a decimal number of hours. 1:15 becomes 1.25 hours, 1:30 becomes 1.5 hours, etc.. Each hour the hour hand moves $1 / 12$ of a circle ( 30 degrees) and the minute hand sweeps the full circle ( 360 degrees). Thus, at any time $\mathbf{x}$, the hour hand is rotated $\mathbf{3 0 x}$ degrees, the minute hand is rotated $\mathbf{3 6 0 x}$ degrees. We're looking for the first occurrence after midnight. During the first hour, the minute hand is sweeping ahead of the hour hand, so the two hands don't overlap before 1:00. So, between 1:00 and 2:00, the minute hand overtakes the hour hand, and $\mathbf{1}<\mathbf{x}<\mathbf{2}$.
On a clock, the minute hand returns to the same point every hour. To find the position we can ignore the multiples of whole hours and only look at the decimal part of the time - the time minus the whole hours. The decimal part of the time $\mathbf{x}$ between 1:00 and 2:00 is $(\mathbf{x}-\mathbf{1})$.

$$
\begin{aligned}
& \frac{360(x-1)}{330 x=360}=30 x \\
& x=1.09090909 \ldots \quad \text { or, in fractions, } \quad[1 \text { and } 1 / 11] \text { o'clock }
\end{aligned}
$$

Specifically 1:05:27:16:21:49:54:32:etc [a.m.] (whew!), continuing until you tired of division equated to sixty parts per unit (for hours/minutes/seconds/etc).
Let's just say a smidge over 1:05 in the morning and return to sleep!!!
(If you can't sleep, when does the exact bell ring during the 2 o'clock hour. See if you are still awake then!!)
Nightee night - 晚 counting sheep is much better! - - Carl Cotton

## While PSCTM does not endorse this product, we do like to share opportunities with our members. Here is an opportunity for you:

Are you an Algebra 1 math teacher? WestEd, a non-profit educational research agency, would like to invite teachers of $8^{\text {th }}$ grade Algebra 1 to access FREE distance learning online software resources that may be able to support your students' in-class/at-home Algebra learning. The Graspable Mathematics (GM) software is a digital algebra notation tool that allows students to dynamically experiment with algebraic expressions. Using the GM algebra notation system, students can interactively move algebraic expressions on their screen, including symbols and numerals with drag and drop mouse or touch gestures, to solve algebraic equations. The program is designed specifically to scaffold students' understanding of algebra through perceptual-motor learning. The program also provides students with immediate process-level feedback to help them develop an intuitive understanding of algebraic rules and transformations.

Teachers can get FREE access to the Graspable Mathematics software in the course of a research study being conducted for approximately four weeks in Spring 2021. Participating teachers will receive access to the software for 1 full year and up to $\$ 550$ for completion of all study activities! While this is not an ideal time to participate in a research project, this study may be able to support your distance learning classroom by providing a learning platform that can be delivered remotely and automatically scaffold student learning, while simultaneously providing teacher visibility into remote math activities.

To receive more information, please fill out an interest survey: https://tinyurl.com/GraspableStudyIntake

-     - Traci Cotton


## Engagement Strategies: No tools required - - Maryke Haynes.

I would love to hear your creative ideas! mhaynes@everettsd.org
Disclaimer: I work at a school that utilizes Zoom and Canvas and has access to both Microsoft and Google products. Most of the ideas should be adaptable to your platforms and tools.
I am definitely someone that loves learning new things. In this current world I see the joy in new tools but then immediately get overwhelmed figuring out how to introduce it to students. I consider if the time spent learning the tool in our synchronous time will be worth our greatly limited time together. Lets not forget if a student is working asynchronously that day so missed directions. The barriers to new tools really make me think more strategically about what I will introduce. I want to spend our synchronous time doing things together, not troubleshooting tech.
To get by in the last few months, I have really focused on choosing just one tool (maybe two if it seems like it will be worth it) for the day and doing all that I can within that tool. Some of my go to's are Shared Google Products (especially Jamboard) and Desmos Activities. But the best moments have been when we don't even leave Zoom.
Here are few of the strategies I have enjoyed using with students and staff:
Chat Storm: The general idea is to get a bunch of things in the chat at once. The key here is to make sure the question is something everyone can answer. I have particularly loved using Chat Strom with the Estimation 180 routine. My high school students have really enjoyed playing with units in their "too high" and has led to really awesome unexpected discussions. This works well with all manner of Instructional Routines, Notice and Wonder, Which One Doesn't Belong. These routines with a Chat Storm have the highest engagement rate for my students.
This picture needs ... : This has students using annotation and you displaying a image... Throw a picture up of a city and ask them to draw a stick figure. Throw up a picture of underwater and ask them to draw a fish. Throw up a map and ask them where they want to go. Or do a word search together as a group! I particularly like to use this strategy to start the day if I have some annotation or "public writing" things planned to break the ice for the day.
Scavenger Hunt + Survey: Kind of like a Kahoot but within Zoom. I have done it with colored objects on the camera (also a nice trick to get cameras on) and with "reactions". My favorite moment was when one student "couldn't find" the colors of objects and showed images on his cell phone screen featuring that color. By the end, all the students were using that strategy and it created an unexpected leader in someone who was typically unengaged. Here is a sample of my lessons with colored objects and using reactions. Feel free to make a copy and adapt!
Fishbowl: One of my favorite things in a meeting is when I can turn my camera off and not worry about what I look like. If I feel that way, I can imagine the students feel this even more! So, give half of them permission to engage in a more comfortable way by turning their camera off. Have half of the students turn on their camera (they are "in the bowl"). Have other half turn their camera off. Post a polarizing question. The students in the bowl will engage verbally and the students outside the boal will engage in the chat. After a few minutes, stop the students in the bowl and read some questions or comments from the chat to give them a voice as well. You could then switch roles with a new question or do the activity again later and switch as many students as possible.
Would you rather math is a great routine to go with this engagement strategy, but I would definitely suggest a non-mathy question for the first couple times. Some "non mathy" questions I have had good luck with: Would you rather have peeps or candy corn for the rest of your life? Is a hotdog a sandwich? Would you rather not have the internet or not be able to drive? Here are a few more ideas (Lots of toilet paper opinions!) (continued on next page...)

Pick-A-Picture: I have used this strategy several times to make groups and have enjoyed it every time. It definitely takes a little bit of "on the fly" decision making about groups but it has also been fun to see trends in classes. I particularly love that it provides students choice right at the beginning of the day and opportunity to connect with each other over something they all chose. It has increased group participation in activities afterwards. Here are the main steps:

1. Upon entry, have students pick between two to four pictures that speaks to them for whatever reason
2. Have them rename themselves as Picture First Name (this is easiest for breakout room assigning) OR send their selection to you in the chat
3. Assign them to breakout rooms based on the picture they chose. I would recommend having them work on an entry task because it can definitely be a little interesting if many people picked the same picture. For example, with my staff 11 people picked the mountain picture. So I split them by the people that spelled "Mountain" and those that wrote "Mtn." Sometimes only one person picks a picture so I would put them in with another group and call it "Music \& Shark". PRO TIP: You can rename the Breakout rooms before you "open" them to make it a little easier to keep track.
4. When you have the groups ready send them to the breakout room and give them a task that has to do with the picture. (See samples below)
5. Return to regular programming and look for opportunities to return them to the same breakout room to work on something together.

| Entry <br> Pictures | Initial Breakout Prompt | Lesson activity |
| :--- | :--- | :--- |
| Mountain, <br> Friends, <br> Music, <br> Sharks | What does it mean to be SAFE here? <br> (Their picture) <br> What does it mean to be BRAVE here? | What does it mean to be safe <br> in the virtual classroom? <br> What does it mean to be <br> brave in the virtual classroom |
| Drone, Dog, <br> Bumble Bee | Write a three-word-story in the chat <br> about your picture. First person (I <br> suggest alphabetical) write three words <br> to start the story, next person writes <br> three, next writes three, and so on. <br> Share your adventures when you come <br> back. | How will we agree to work <br> together this year? (Norms) |
| Give students a graph and <br> ask them to write a story <br> about their picture that could <br> be represented by their <br> graph. |  |  |
| Ice Cream, <br> Oranges | "Yes, And" Party Planning. Person with <br> the nearest birthday starts by <br> suggesting something for the perfect <br> party. Next person say "Yes, and I <br> would have..." then next person say <br> "Yes, and I would have... " and so on <br> until you bring them back. | Create a scatterplot of Ice <br> Cream sold vs. Temperature <br> OR Oranges in box vs. <br> Weight. Then do appropriate <br> math with the scatterplot for <br> your students. |

## Maryke Haynes

## Math Fun - - Jane Bissonnette

In addition to math, I teach computer science. Here are a couple of fun games to take a break during computer science or math class.
The first is lightbot ${ }^{\mathrm{TM}}$. I love this game that you can play online: https://www.lightbot.com/flash.html or download the app to your mobile device.
In this game you give commands to a little robot to move around a game board and light up squares. The game is self-guided and very clear in its instructions.
As the robot follows your instructions, each instruction is highlighted so you can see where you need to make changes if you do not succeed the first time. Each level gets a little more complex. I love this game because it teaches the students logic as well as creating functions or methods. I have spent many hours playing this game. It never fails to delight.

Teaching binary is a great refresher for students to understand the importance of place value \& prepare for our programming world. A fun binary game is the Cisco binary game at:
https://learningnetwork.cisco.com/s/binary-game.
The game either provides the binary bits and the player must enter the decimal value or the player must select the bits for a particular decimal value. It is timed so new frames of bits are added periodically. If the screen fills up with frames the game is over. The game keeps score and players can advance to higher levels where the frames of bits appear at a faster pace. This game has been very popular with my students.
(This one cannot be downloaded on a mobile device.)


Has anyone else adopted Covid Pets? - adopted by Joe \& Joyce Frost \& Jane Bissonnette.


KJ (Katherine Johnson) \& Conway


Rosie


## How to Retain Your Heat \& Stay Upbeat While Socializing in Winter

With the right mindset and know-how, outdoor socializing can keep going all year long.

- Bring something to sit on
- Eat snacks high in fat, calories, \& protein
- Stay hydrated
- Dress like an onion
- Adopt the Friluftsliv (meaning, "free, outdoor life" in Norwegian ) mentality "In Norway, we have a saying: There is no such thing as bad weather. It's only if you have bad clothes," says Bentie Lier, secretary-general of Norsk Friluftsliv, a consortium of outdoor groups in Norway. -- - npr.org


10 Things to Feel Good About! https://magazine.washington.edu/

## Just in time for the holidays, the University of Washington has a GOOD list!

1. Infants are altruistic: According to a UW study, babies are happy to share their food!
2. Two baby orcas were born in September in the vulnerable J pod.
3. Eelgrass has a halo: it shades and camouflages young fish, anchors shorelines, provides food and habitat for many marine species, AND wards off toxin-producing algae.
4. Full-fat dairy is OK: Whole milk, heavy cream, cheese can be good for you! It is more filing and can keep blood sugar stable between meals. Acids in milk fat may crank up calorie burning.
5. Mosquitoes ' $n$ flowers: Mosquitoes are drawn to flowers as much as people, hopefully leading to the development of less toxic and more effective repellants.
6. Grads in pandemic: 18,000 UW students received degrees in June despite the pandemic!
7. Nature knows best: Going outside improves mental well-being and physical health. UW studies show it reduces anxiety, helps us sleep better, and benefits those with Type 2 diabetes, depression, and obesity.
8. Expanding canvases: A pandemic, protests, and plywood-covered storefronts have provided opportunities for artistic expression across Seattle.
9. More family time: Millions of Americans are staying home these days.
10. Bye, murder hornets: Using UW knowledge and technology, the Dept. of Agriculture attached tiny trackers and followed them to their nest in Blaine. 200 queens are no more!

## The Eigenvectors of Change

Matrices mathematically alter objects. Every matrix can be characterized by its eigenvectors and eigenvalues.

## Growth and Reflection

If you apply a certain matrix to the shape below, it will do two things.
First, it will reflect the object across a plane, as though the object were appearing in a mirror. And second, it will double the height of the object.
The matrix's eigenvectors describe the special directions along which the object doesn't change, except by scaling up and down. Its eigenvalues describe how much the object becomes rescaled along those eigenvectors.


ORIGINAL


MATRIX


TRANSFORMATION

EIGENVECTOR A: Runs along the vertical axis.
Its eigenvalue is 2 , because the object doubles in height.
EIGENVECTOR B: Runs along the plane of reflection.
Its eigenvalue is $\mathbf{1}$, because in this direction the object neither shrinks nor grows.
EIGENVECTOR C: Runs perpendicular to the plane of reflection.
Its eigenvalue is $\mathbf{- 1}$, which describes the flip across the plane.
(The comments in the illustration are true for square matrices with Real eigenvectors and eigen values. The formula in the associated article is based on Hermitian matrices which satisfy these conditions. Thanks to Dr. Millie Johnson, WWU, for catching that.)
Check out the article in Quanta magazine and read about a new discovery on the next page.

## Mathematical research is full of the "Why didn't I think of that?" moments.

This article in Quanta magazine describes a recent one. Here's a quick take on it:
Three physicists working on complicated motion equations for neutrinos happened upon a formula that simplifies the process of calculating eigenvectors from eigenvalues. They couldn't find any references to the new formula in textbooks or literature, so they reached out to Fields Medalist Terence Tao of UCLA to see if their insight had any merit.

The formula "looked too good to be true," said Tao, one of the world's leading mathematicians. "Something this short and simple - it should have been in textbooks already," he said. "So my first thought was, no, this can't be true."
The physicists - Stephen Parke of Fermi National Accelerator Laboratory, Xining Zhang of the University of Chicago and Peter Denton of Brookhaven National Laboratory - had arrived at the mathematical identity about two months earlier while grappling with the strange behavior of particles called neutrinos.
"To our surprise, he replied in under two hours saying he'd never seen this before," Parke said. Tao's reply also included three independent proofs of the identity.
"This is certainly both surprising and interesting," said Van Vu, a mathematician at Yale University. "I did not suspect that one can compute eigenvectors using only information about eigenvalues."
"In a way, it's not surprising that a new insight into centuries-old mathematical objects came from physicists. Nature has inspired mathematical thinking ever since humans started counting on 10 fingers. "For math to thrive, it has to connect to nature," Van Vu said. "There is no other way."
https://www.quantamagazine.org/neutrinos-lead-to-unexpected-discovery-in-basic-math-20191113/

| Thriving "I got this." | Surviving <br> "Something isn't right." | Struggling <br> "I can't keep this up." | In Crisis <br> "I can't survive this." |
| :---: | :---: | :---: | :---: |
| Calm and steady with minor mood fluctuations | Nervousness, sadness, increased mood fluctuations | Persistent fear, panic, anxiety, anger, pervasive sadness, hopelessness | Disabling distress and loss of function <br> Panic attacks |
| Able to take things in stride | Inconsistent performance | Exhaustion | Nightmares or flashbacks |
| Consistent performance | More easily overwhelmed or irritated | Poor performance and difficulty making decisions or concentrating | Unable to fall or stay asleep <br> Intrusive thoughts |
| Able to take feedback and to adjust to changes of plans | Increased need for control and difficulty adjusting to changes | Avoiding interaction with coworkers, family, and friends | Thoughts of self-harm or suicide Easily enraged or aggressive |
| Able to focus <br> Able to | Trouble sleeping or eating | Fatigue, aches and pains | Careless mistakes an inability to focus |
| communicate effectively | Activities and relationships you used to enjoy | Restless, disturbed sleep | Feeling numb, lost, or out of control |
| Normal sleep patterns and appetite | seem less interesting or even stressful | Self-medicating with substances, food, or other numbing activities | Withdrawl from relationships <br> Dependence on |
|  | Muscle tension, low energy, headaches |  | substances, food, or other numbing activities to cope |

[^1] Stress First Aid for Firefighters and Emergency Services Personnel. National Fallen Firefighters Foundation.


## High School Contest

WSMC High School "Regional" Competition March 10, 2021

## Twsuc <br> Washington State Mathematics Council

There will be a high school contest this year. It doesn't appear that by the March 10th date we will be able to hold regional site competitions but we have a plan. If your school is able to be in-person, your coach will be able to run the Team Problem and the Topical Problem competitions at your school. If you are not able to have in person competition, these two portions of the contest will be held virtually. Details on how that will work are being worked out and will probably involve Zoom. The Projects will be done completely virtually. The Project Question and Scoring Guide are posted at the WSMC website (wsmc.net). Knowdown for all schools will be done virtually.

All Participants at the regional level will receive an official certificate of participation however there will not be any regional awards, ribbons, or plaques. From the results from these competitions, top performing individuals and participants will be invited to State on April 17th. State will be held at CWU if COVID allows or it will be done virtually. The usual plaques, ribbons and medals will be awarded, however prizes will depend on the level of participation.

Because of the changes in the regional competition format, WSMC is expecting to reduce its expenses so registration fees will be cut. The fee schedule can be located on the pre-registration form on the website. We at WSMC hope that you will be able to participate and join in the fun doing mathematics. We hope all are well and staying safe.


Melinda has several things she would really like to recommend:
Pixar in a Box on Khan Academy : lessons that align with middle school and high school math
The Global Math Project and Exploding Dots
Melinda said this about her new experience with PSCTM. She said she is, "encouraging my colleagues to join! What a fun, relevant, inspiring group of colleagues in the Puget Sound! I look forward to digesting all the good info in the newsletter as well as joining more PD with you! Zooming at least makes it easier for me to join from the Peninsula."

Yes, in this crazy time of online everything, a bright spot is being able to include more math buddies from around the state and even other parts of the world!

## The Global Math Project: Check this out!

The story of the Global Math Project began when James, one of its cofounders, asked,"What are the joyous human stories behind school mathematics?"

James came to the United States in 1988 to pursue his PhD in mathematics from Princeton. He always had a strong passion for teaching and sharing the joy of math, and decided to commit to that passion by becoming a high-school teacher. He was challenged, however, when he was required to teach students polynomial division. "Why?" he thought, "To what meaningful end?" But he realized that exploring "base $x$ " provides the profound opportunity to deeply understand one of humankind's greatest intellectual achievements: the invention of place-value. Thus, the story of Exploding Dots was born. Under the instigation of his colleagues, the Global Math Project was founded in 2016 with the aim of providing remarkably accessible, powerful, and genuinely joyful entry points into mathematics.

Check out these videos on Exploding Dots
The Exploding Dots story comes in 12 short-and-swift explorations
Global Math Project Mission:
The Global Math Project is a worldwide movement committed to inspiring educators everywhere to ignite and sustain in their students a love for learning mathematics.


DISTRIBUTING THE VACCINE
BY JOHN DARKOW, COLUMBIA MISSOURIAN

## Kids returning to school after Corona.





[^0]:    Jane Bissonnette - Past President \& Secretary, Joyce Frost - Program \& Newsletter, Jane Hunter - Newsletter, Art Mabbott Treasurer/ NCTM Rep, Joe Frost - Web Page, Laura Beckett, Maryke Haynes - Equity, Angela Ensminger - Membership \& Social Media, Carl Cotton, Presentation Support

[^1]:    Adapted from: Watson, P., Gist, R., Taylor, V. Evlander, E., Leto, F., Martin, R., Vaught, D., Nash, W.P., Westphal, R., \& Litz, B. (2013).

