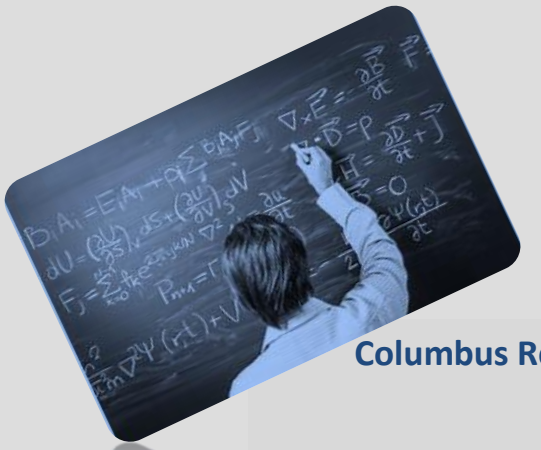
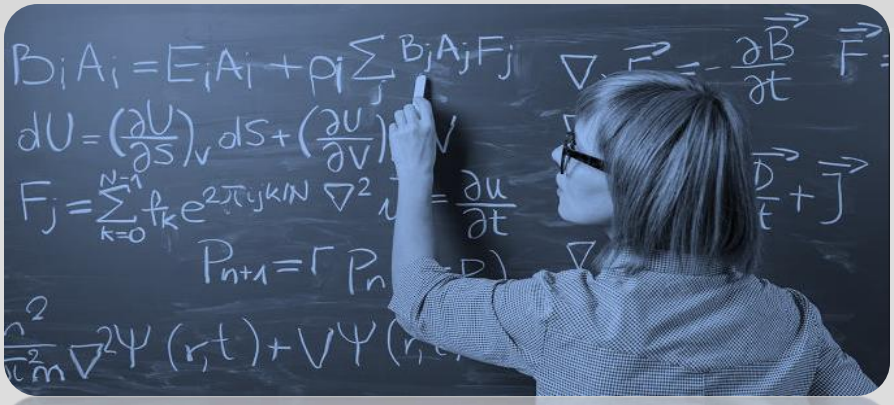


Columbus Regional Math Collaborative October 29, 2021

Notes to Nerds

Workshops | Director's Notes | News Items

Resource Teachers | Math Humor | CRMC Home Page



Face to Face High School Workshop – November 16th

Frank Brown Hall, Room 1010

A Dive into Resources for Engaging Students

We are excited to announce A Dive into Resources for Engaging Students in Mathematic – a day-long, face to face workshop for High School Mathematics teachers on November 16th! This exploration of engaging mathematical practices and resources will give you ideas that you can implement immediately.

Nancy Mims and Peter Anderson will create an atmosphere for you to experience activities firsthand, ask questions, and generate new ideas.

Sign up – Space is limited!

The USG continues to work closely with the Georgia Department of Public Health to prioritize the wellness and safety of CSU and all of its campus communities.
Data Source: https://www.columbusstate.edu/covid/

November and December Virtual Workshops

Workshops available to Chattahoochee County, Muscogee County, Russell County, and St. Anne Pacelli schools are **NO COST** to the teachers

After the workshop, you will receive an email to fill out an evaluation.
Note: It should take less than 10 minutes to respond
Upon completion, you will receive a Certificate of attendance for the workshop.

Elementary School

Middle School

Virtual Workshops

Date: Thursday, November 4, 2021 Time: 4:30pm – 5:15pm
7th Grade: Unit 3 -Ratio & Proportions --Thursday, November 4
Presenter: Hope Phillips

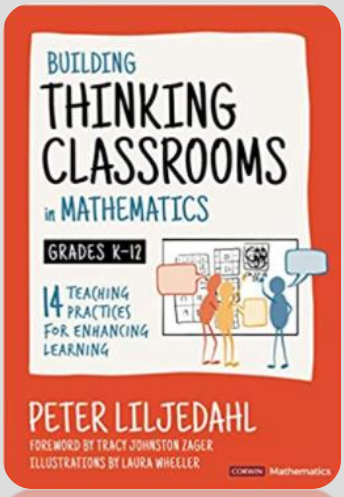
Date: Tuesday, November 9, 2021 Time: 3:45pm – 4:30pm
K – 5th Elementary School: Creating Mathematical Thinkers (Virtual Workshop)
Habit 8: Develop vocabulary
Presenter: Laura Stokes

Date: Tuesday, December 14, 2021 Time: 3:45pm – 4:30pm
K – 5th Elementary School: Creating Mathematical Thinkers (Virtual Workshop).
Habit 9: Collaborate to learn
Presenter: Laura Stokes

Building Thinking Classrooms –

Learning Community

Hosted by Peter Anderson, Director



Date: Tuesday, November 30, 2021 Time: 7:00pm – 8:00pm

https://columbusstate.libcal.com/event/8436445

***Building Thinking Classrooms** – Learning community*

Warning: It will change the way you teach. Contact Peter Anderson

Director's Notes

Sharing a Sunshine

I often wonder if other people hold on to note cards with compliments. I hold on to mine.

I teach the red-shirted Algebra 1 class at my high school. We call ourselves the *red- shirts* like those college athletes who get an extra year under their belts before they go on to play varsity sports. For a multitude of reasons, these students are repeating Algebra 1.

These students' experiences with mathematics have, on many levels, been traumatic. In class, we work a great deal on SEL or Social-Emotional Learning. I often ask them to write in their notebooks thoughts about their learning struggles and successes. In turn, I respond to their entries. My co-teacher and I share *Jacket Brags* with our students. These are notes that let us catch them doing something positive.

Recently, it was a particularly tough Tuesday morning. I have a young gentleman who has difficulty coming to class regularly. When he does make it to class, he is frustrated about lots of things. In particular, he is behind and does not know what is going on. It is not that he is hard to manage. It is more the reality that the resources in place for this young soul are short of what he needs to have a shot at being even modestly successful.

I realize that my expectations and his expectations for success in class are not the same. He has been burned by failure so often in mathematics classes that he sees little point in trying. This pattern is repeated all too often by the student and, unfortunately, by his teachers. It is a dance I had hoped to avoid, but it is the practiced two-step into which we fall.

For all of my awareness of this trap. I had to ask him to leave the class and to go to the office. His behavior was unsafe for his classmates. He complied.
As we walked to the office, he asked, *"Why do you have it in for me?"* He and I talked. His idea of what is acceptable and mine are not the same. He was truly hurt and angry.
I had failed him.

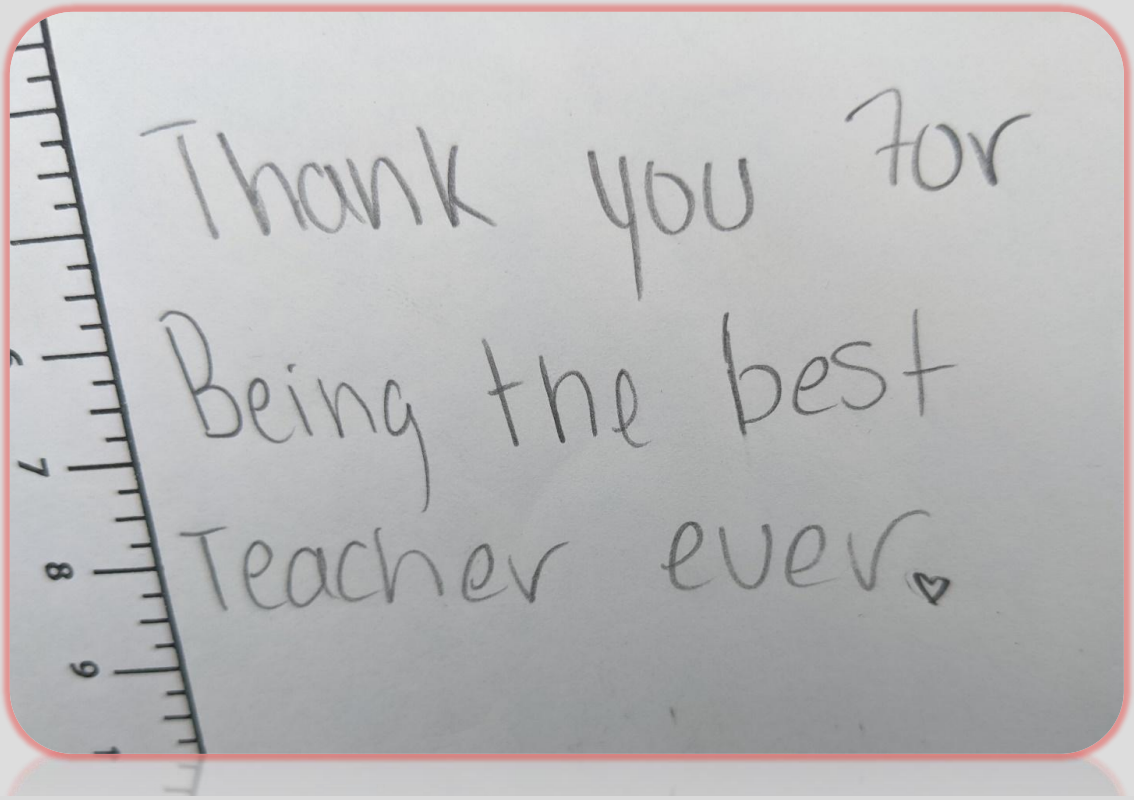
Feeling ineffective, I returned to class.

We continued the lesson. Working with the students, there was ample evidence the day had not been a learning loss. Students grasped the idea of visualizing a parabola based on the characteristics of the equation. They even recognized factors of a polynomial, although it was through a game and not formally.

We were about to wrap up class by checking understanding when a student suggested we write *Jacket Brags for teachers*. My skeptical *teacher self* thought this student might be trying to avoid math-related work. But I took a chance and let the class fill out *Jacket Brags*.

Later that day I read each of the *Brags* before distributing them to the intended teacher. I was surprised by the thoughtfulness and sincerity of the notes. They were rays of sunshine that picked me up. I hope the same was true for the teachers who received them.

Here is a ray of sunshine I have hung onto for almost 15 years now. It is taped below the window seal near my desk.

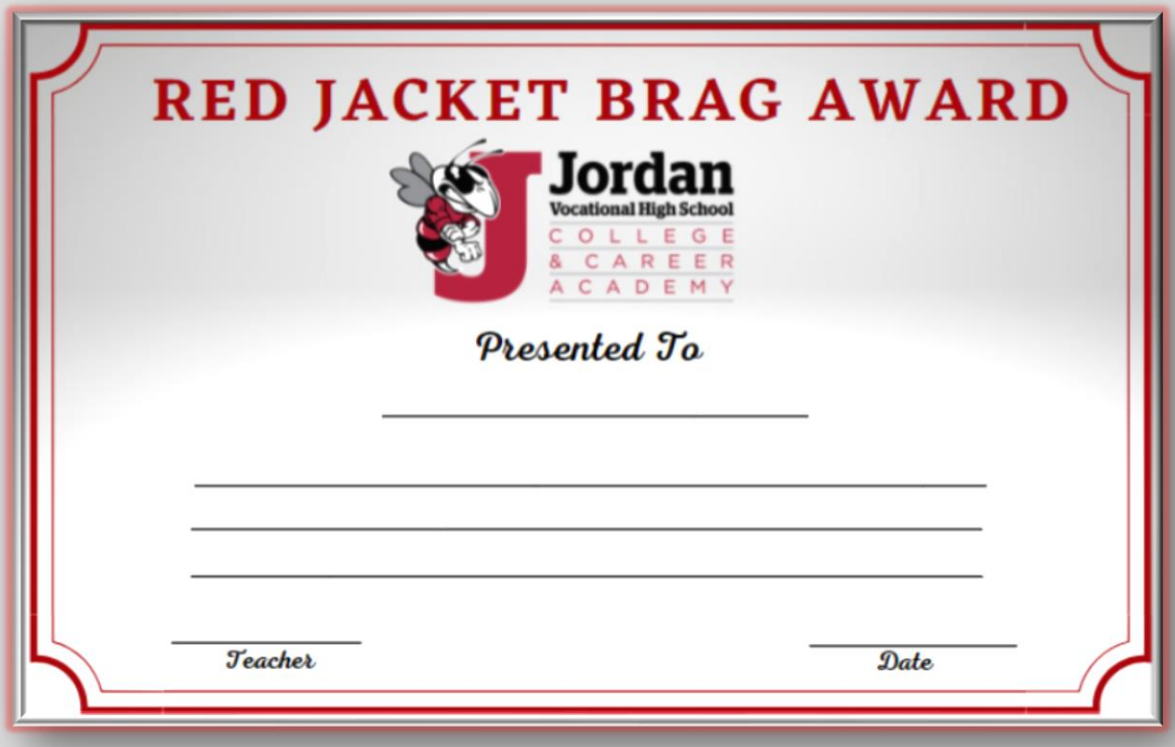


Some days, I am not sure this message is true. Quite possibly, though, it was for that student the day she wrote it. Either way, it has brightened many a day for me.

(Below, you will find a *Jacket Brag* sample.)

Happy Maths,
Pete

*The *Brag* idea is not new. A former principal of mine used them - to great effect - toward building student-teacher relationships. We often "write up" students for discipline infractions. Why not try to catch them doing something good and then write a brief brag to let them know we appreciate their effort?



Resource Teachers

An Awfully Good Oxymoron: Numberless Word Problems

"Part of mathematics is calculation, but I'm finding that the larger part of mathematics is sense making. The beauty of the idea of numberless word problems is that they get in the way of teaching tricks and force students into the realm of sense making."

Max Ray, *Powerful Problem Solving*

The first time I saw the term *numberless word problems* I was intrigued by the oxymoron; the notion seemed contradictory. How could a word problem be numberless? Once you dig into the idea, you see that the focus is helping students understand the *action* in the problem. When students are "action" aware, they are able to decide whether their answer is reasonable.

Here is a quick synopsis of the numberless word problems format:

- Start with a bare-bones word problem. This means the numbers are stripped away. Instead of numbers, words such as *some, several, various, and/or fewer* suggest quantities.
- Ask students to visualize the problem scenario. What do they see? What would be reasonable numbers to describe the problem? What action is happening in the word problem?
- Do NOT reveal the "final question" yet. Hold the question until students have explored the action in the problem.
- One at a time, add numbers into the story problem. After each number is added, ask, "What do you now know?" Continue with other questions that ask students to think about the action in the word problem.
- Once students have all of the numbers they need to solve the "final question," ask -- do NOT tell the students -- "What can we now answer? What do we want to know?" The beauty here is that, sometimes, students come up with more questions than you anticipated. Their questions make for wonderful extensions of the word problem.

The numberless word problem process stops students from "pulling out" the numbers – **number plucking** – in word problems and just selecting an operation, often addition. There is sense making and reasoning in their problem solving.

What do numberless word problems do for students' reasoning skills?

- Students focus on the action rather than searching for key words.
- Students select an operation based on the action, not a guess.
- Students are less likely to *number-pluck* because they focus on the action.
- Students, knowing the action, can focus on the numbers and how to operate on them to produce a reasonable answer.

How can you implement these problems in your classroom? Start by investigating Numberless Word Problems from Brian Bushart's site *Teaching to the Beat of a Different Drummer*. Bushart provides step-by-step instructions for creating your own numberless word problems. The best part is, if you scroll to the bottom of the page, you will find MANY PowerPoint files of numberless word problems.

Have fun exploring and then creating your own. Feel free to reach out to the Math Collaborative, and we will continue this conversation with you and your students. When you're ready to write your own, here is a good post: Writing Numberless Word Problems.

Once students work through word problems in this manner, they will see problems as stories with actions, no longer needing the numbers removed. Students begin approaching word problems with reasoning and notice relationships.

Get your students talking about the math, not just *doing* the math.

The samples below are courtesy of Numberless Word Problems

Mrs. Lovelace asked some students to each hold up some fingers. She saw lots of fingers.

- What are picturing in your mind when you read this story?
- How many fingers do you think each student held up?
- How many fingers do you think she saw altogether?

Example modified from Brian Bushart, *Teaching to the Beat of a Different Drummer*

Mrs. Lovelace asked some students to each hold up 10 fingers. She saw a lot of fingers.

What changed? What did we learn from this new information?

What do we still need to find out? What do you think this number could be?

Mrs. Lovelace asked some students to each hold up 10 fingers. She saw 90 fingers.

What changed? What did we learn from this new information?

What question could we ask about this situation?

Mrs. Lovelace asked some students to each hold up 10 fingers. She saw 90 fingers. How many students were holding up fingers?

Which operation(s) can we use to answer this question? How do you know?

What if she saw 100 fingers instead of 90 fingers? How any students would be holding up fingers then?

News Items for Oct 29th – So much going on!

The Monthly Staff meeting is at 10:30 on Monday, November 1st…. We hope to rest any ghosts from the past and kindle fresh spirits for the future!

Dr. Mary Lindquist dropped by on Wednesday. We got two treats! Of course, a wonderful visit with Mary and her donation of NCTM Mathematics Yearbooks.

This past week we have 8 schools from Elementary to Middle to High over three different counties!

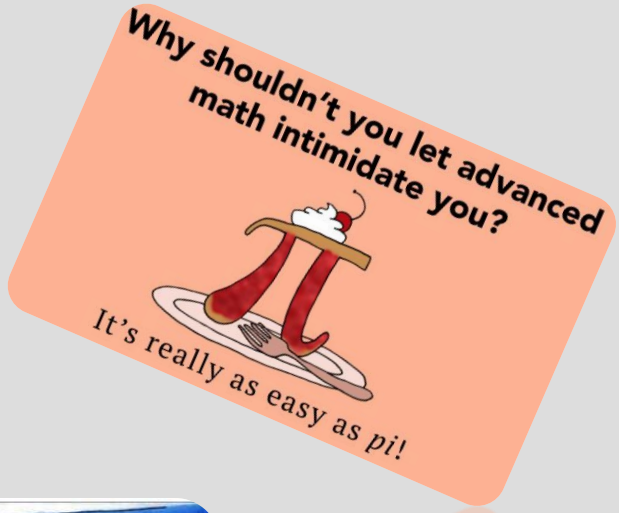
The nursing students had two opportunities to prepare for their dosage exam with the Mathematics Collaborative! (We wish them all the best this next week!)

CQTL used our 1010 classroom to allow systems to conduct interviews of our own CSU teacher candidates! We hope to have new mathematics teachers to serve soon! Shout out to CQTL for their work!

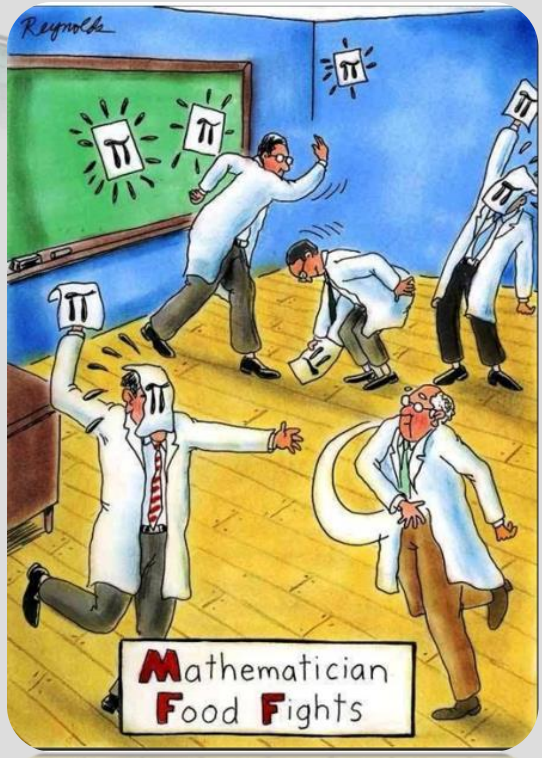
This coming week on Thursday and on Friday, Mathematics Collaborative will have a visit from St Luke School as their teachers will have an immersive field trip experience! They will observe and reflect on best teaching practices as lessons are presented by CRMC's Resource teachers. (Contact us if your school might want a similar experience.)

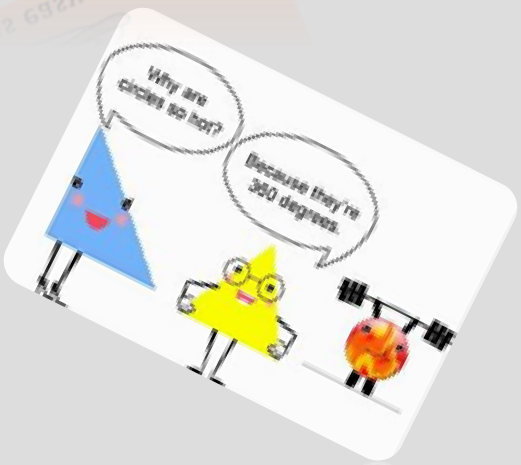
Math Humor

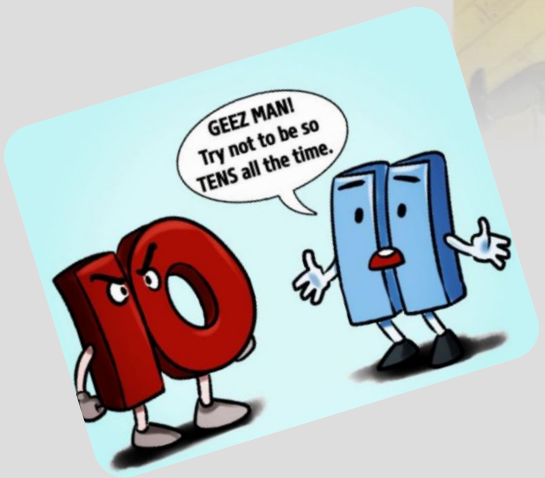

NO, JACOB, WE DON'T HAVE TO "AGREE TO DISAGREE."
12
+9
29


Why shouldn't you let advanced math intimidate you?
It's really as easy as pi!


THE NEVER ENDING STORY


Mathematician
Food Fights


Why are circles so hot?
Because they're 360 degrees.


GEEZ MAN! Try not to be so TENS all the time.


OH, MOM, THEY CALLED ME AVERAGE! BOYS CAN BE SO MEAN!
NO SWEETIE, YOU'RE THE MEAN ONE.
8
9

Columbus Regional Mathematics Collaborative - Columbus State University

CLICK HERE TO READ MORE ABOUT OUR WEBSITE

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