2021

Notes to Nerds

Math Collaborative | January 8, 2021 | CRMC Newsletter

WE are working for you!

·Our talented resource teachers have prepared events scheduled every Tuesday for Elementary and Middle School teachers and Wednesday and Thursday for High School teachers· See ---->

Be sure to see the Teacher Resource Corner on Pages 4 & 5

Workshop Links

Tuesday January 12:
4th & 5th Grade Fractions and Decimals

Tuesday January 12
6th Grade Unit 4
6th Grade Unit 5

Wednesday January 13
Highschool Algebra 1

Thursday January 14
Highschool Geometry

Tuesday January 19
2nd & 3rd Grade Fractions and Length Measurement
7th Grade Unit 4 Geometry

Main Nerd Note

A Shoestring, Cat's Cradle and Catenaries.

The other day cleaning a drawer of old clutter and getting ready for the new year, I came across an old shoestring. It was one from a 10-year old's shoe that had been worn until there was a hole in the bottom: the part of the shoe below where your big toe connects to the padded part of your foot.; that spot with which you turn and run and begin jumps.

The salvaged shoestring is of weaved cotton, the kind with plastic aglets at either end. (I had to look up - aglets.) I don't know about you, but sometimes I would chew on the plastic aglets when I would hang them over my shoulder and walk barefoot on a summer day. Who knew about germs and viruses in those 10-year-olds' days?

The string is an old play friend. I would make it a loop and my sister would make a cat's cradle or do magic where the loop around my hand would untie as she pulled the string away.

It was a lasso for my GI Joe; sometimes forming a lazy catenary between my dresser and desk chair so he could escape from the top of a building to the street below.

It was the string part of a small bow made from a short, springy limb I made to shoot "recycled" plastic drinking straws. The arrows flew best with tips weighted with bits of chewed gum.

There was a time when, beltless, I tied two belt-loops together to hold up pants borrowed from a cousin, so they wouldn't fall down when I ran. The same string that had been an indecipherable mess at times, when laced into my shoe, would be the one I practiced my Scout knots on.

It was a bookmark for the fat, old high school history textbook. If you tied the ends so they looped the spine you could carry it like a suitcase … just because.

It held old birthday cards together (yep… I still save them) and later notes from that special girl.

The old shoestring is special to me for all the memories, but it is important because of the hours of play and creativity that it allowed me to engage in. I wonder if I gave the same gift to my own children.

What opportunities do we allow for play? Play for ourselves just as importantly, play for the children we teach?

It occurs to me that play is in many ways the life breath of real learning.

What would you do with an old shoestring if you had the opportunity?

Happy Maths,

Peter

News for Nerd in the Know!

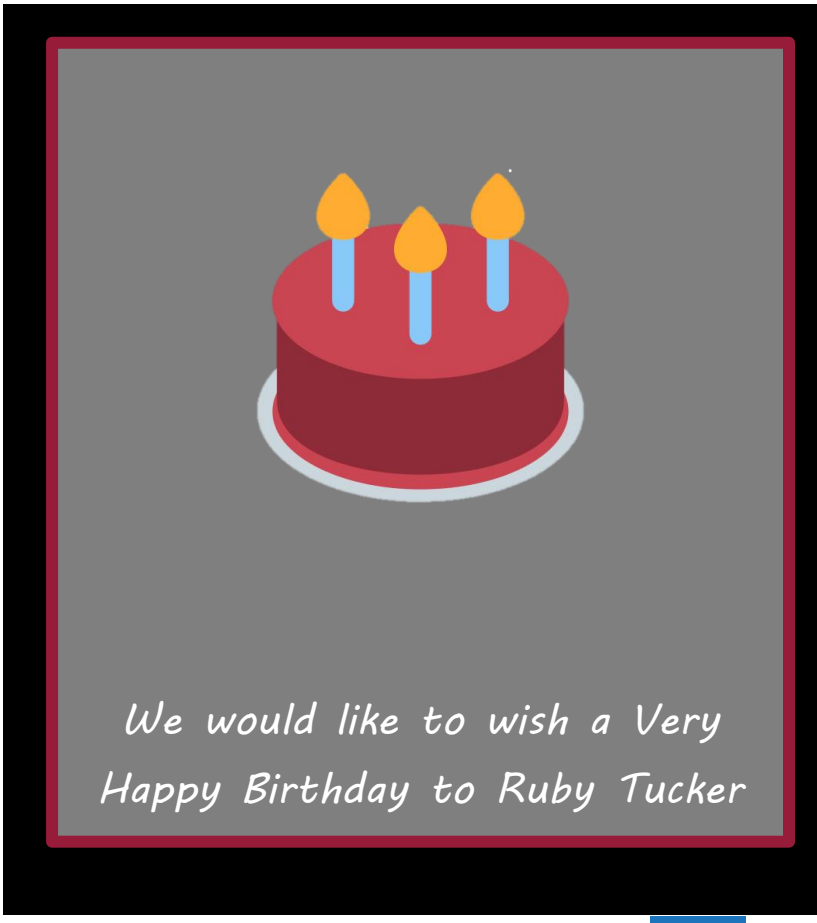
- **Janet Knight** deserves a **BIG THANK YOU** for reorganizing our Library in the Ruby Tucker Resource Room. We are open for business and have checked out rocket launchers and middle school resource books this past month. YOU SHOULD SEE WHAT WE HAVE!
- **Monthly Staff Meeting** on Monday January 11 at 10:30am in room 1010 or contact Peter for zoom link.
- **The Mathematics Collaborative** is actively seeking to form partnerships and pursuing grants that allow us to support the development of teacher leaders. **We encourage you to contact us** if you might be one of those partners OR know of grants that may aid us in this endeavor.
- **National Math Festival Online** – The National Math Festival brings together some of the most fascinating mathematicians of our time to inspire and challenge all ages to see math in new and unexpected ways.

(https://www.nationalmathfestival.org/2021-festival/)

national math festival

Be sure to see the next page! It's got good stuff!

We really meme it!



When Social Media and Math Cross Paths - - By Middle School Resource Teacher - Hope Phillips

Social media can produce a variety of reactions in us – laughter, dismay, anger, wonder, etc. One of my personal favorite reactions to posts I read is, "Wow! I can use that in a math lesson!" What follows below are several memes and my ponderings on possible ways to incorporate these amusing signs in your classroom.

Don't you immediately think about math when you see pies? What are the denominators of these pies--twelfths for the pumpkin and sevenths for the pizza, right? If your students have this misconception, use these images to challenge their understanding. The denominator of a fraction partitions, or splits, into *equal* parts. So, what can we say about the denominators of each pie? Someone has a good sense of humor but bad fraction reasoning!

It's not laugh-out loud butter! It's mispriced Land O Lakes, instead. What's going on with the cost? It is one heck of a bargain! Stock up now! As math teachers we should ask ourselves, "What's the function of a decimal point anyway?" It identifies the *units* position.

In our money system, the decimal identifies the dollar as the units position. Take $1.50, for example. The decimal "looks to the left" to identify the units position, the dollar. The "5" is of that unit. of $1 has a value of fifty cents.

In the case of LOL Butter, the units position is one penny, so any numbers to the right of the decimal are fractions of a penny. By using a decimal point and a ¢ symbol, the price is a fraction of a penny, actually, of a penny.

I say round the cost to a penny and buy a case

A great visual pun! When your students take the square root of a number, do they link this numbers-and-operations procedure with geometry? *Do they know the square root of a number is the length of the side of a square with that area? Do they realize if they square the square root value they will have the area of that square?*

An orchestra of 120 players takes 40 minutes to play Beethoven's 9th Symphony. How long would it take for 60 players to play the symphony?

Let P be number of players and T the time playing.

How would many of your students answer this problem? My guess is below.

›r *T*, time, the answer would be 20 minutes.

Let's examine this "20-minutes" answer.

- *Can symphony members play more than one instrument simultaneously?*
- *If players could play more than one instrument simultaneously (sci-fi world, maybe?), how much faster would they need to play their parts? How would the piece sound as a result?*
- *Is every situation that sounds proportional…proportional?*
- *How does sense making play a part in problem solving?*

Jeff Bezos has 121 BILLION dollars. The population of earth is 7 billion people. He could give every person 1 BILLION dollars and end poverty, and he would still have 114 billion dollars left over but he wont do it.

7 groups of 1 billion subtracted from 121 billion is 114 billion. True! What's the problem here, then, right?

Hmm… *In this scenario, the 7 billion people on earth would receive a $1,000,000,000, collectively. Unit rate wise… Each person would receive ONE DOLLAR! Jeff Bezos, however, would still have $114,000,000,000 for himself. I'd say he'd still be doing all right. Don't spend your dollar all in one place!*