

Welcome to MCTM's e-Newsletter!

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# MI Math Community November 2020

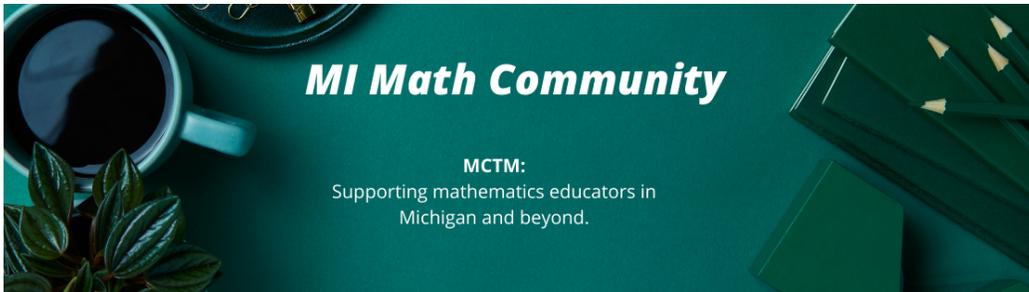


Michigan  
Council of  
Teachers of  
Mathematics

Best viewed on a desktop or go [HERE](#) to see as webpage.

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**Teaser:** Check out the bottom of this email for more FREE Adventures with Mathematics activities **AND** a great #MathWalk image!



## 5 Practices for Orchestrating Productive Mathematics Discussions Part I

"If you're anything like me, you've probably found yourself exhausted at the end of the day sitting in your classroom wondering what shifts to make to the learning environment to actually get students to talk more about mathematics. Reflecting, trying, coaxing and even the occasion pleading were several practices in my toolkit that I employed to try to move further into a student-centered learning space. Luckily, someone in my network had the wherewithal to guide me towards professional learning through the text *5 Practices for Orchestrating Productive Mathematics Discussions* by Margaret Smith and Mark Kay Klein. The first article in this series will describe the necessary conditions, or groundwork, for rich student-centered conversations to take place centered on this book."

**Marcus Dejas**, Kent Intermediate School District & MCTM Executive Secretary

[Full Article: 5 Practices Part I](#)

### What is MiSTEM?

The MiSTEM Advisory Council is charged with setting a strategic vision for STEM in Michigan and moving that vision to action through the MiSTEM Network. The Council consists of education, business and community leaders with the knowledge, experience, and commitment to make quality, equitable STEM experiences the responsibility of our communities – and not solely our schools. The Michigan MiSTEM Advisory Council has released its 2020 Annual Report. The report highlights achievements to date and priorities for the future.

Diane Owen-Rogers

[Download MiSTEM Report](#)

**Upcoming Date: November 19, 2020 7:00 - 8:20 p.m.**

[Register NOW!](#)

**MiSTEM Network**

**MCTM** | Michigan Council of Teachers of Mathematics

**MICHIGAN**  
Department of Education

**Empowering  
Mathematics  
Educators**

*Learn. Network. Lead.*

## #EmpoweringMathEd Series

October's Empowering Mathematics Educators series was well attended and great discussions were had in breakout rooms and as a whole group.

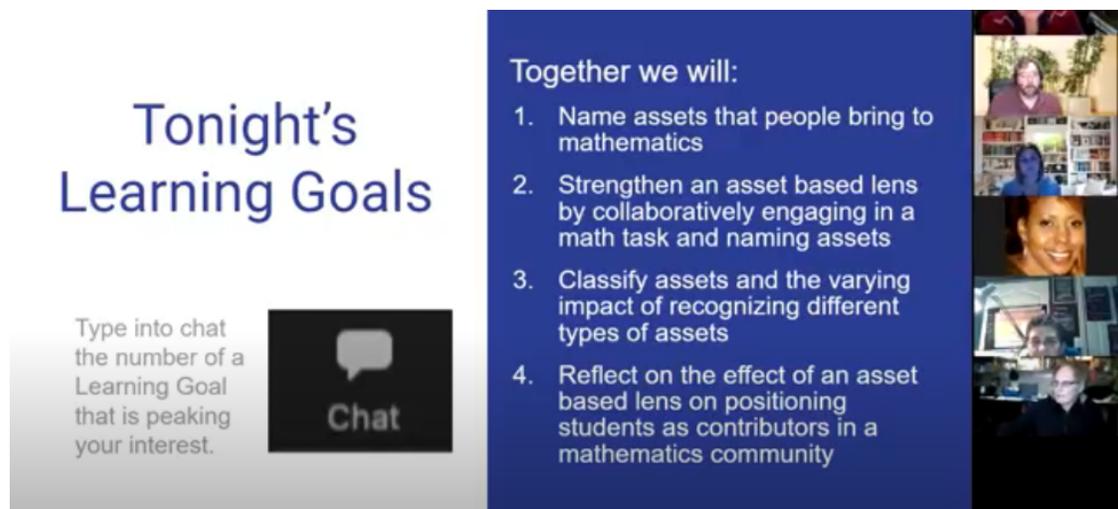
October's session investigated **Asset-Based Thinking in Mathematics** and what that might look and sound like. **Kristin Frang** (Muskegon Area ISD Mathematics Education Consultant) led the discussion and provided ways to shift your perspective when thinking about our learners. In addition, strategies for engagement in digital platforms were modeled.

“We seek to position students as knowers and doers of mathematics. Mathematics is content that’s more than just answer getting. Mathematics is about the strategies. Mathematics is a social endeavor.”

A math task centering around strategies used to order number incorporated Jamboard. To access the task, click the link below.

Register for November Session Here!

Link to Math Task



**Tonight's Learning Goals**

Type into chat the number of a Learning Goal that is peaking your interest.

Chat

**Together we will:**

1. Name assets that people bring to mathematics
2. Strengthen an asset based lens by collaboratively engaging in a math task and naming assets
3. Classify assets and the varying impact of recognizing different types of assets
4. Reflect on the effect of an asset based lens on positioning students as contributors in a mathematics community



**Asset-Based Approach**

In the simplest terms, an asset-based approach focuses on **strengths**. It views diversity in thought, culture, and traits as positive assets. Teachers and students alike are valued for what they bring to the classroom rather than being characterized by what they may need to work on or lack.

<https://teachereducation.steinhardt.nyu.edu/an-asset-based-approach-to-education-what-it-is-and-why-it-matters/>



**Broadening our Lens**



Train our eyes to notice:

- a wider variety of assets
- whose assets are being recognized and by whom
- positioning that occurs

## “SMART” In Math

**What counts as an intellectual strength**

- *Academic dispositions* such as noticing a pattern or mathematical structure
- *Social skills* such as summarizing the big ideas of a groups discussion or exploration



**“directly support students’ learning in the moment”**

## What will you do?

[W]e can give our students all the right kinds of feedback and create processes to help them reflect on it, but if we cannot get them to take it to heart nothing will change. To get dependent learners to act on feedback or to be strategic, they have to first believe in themselves as learners.”

Zaretta Hammond



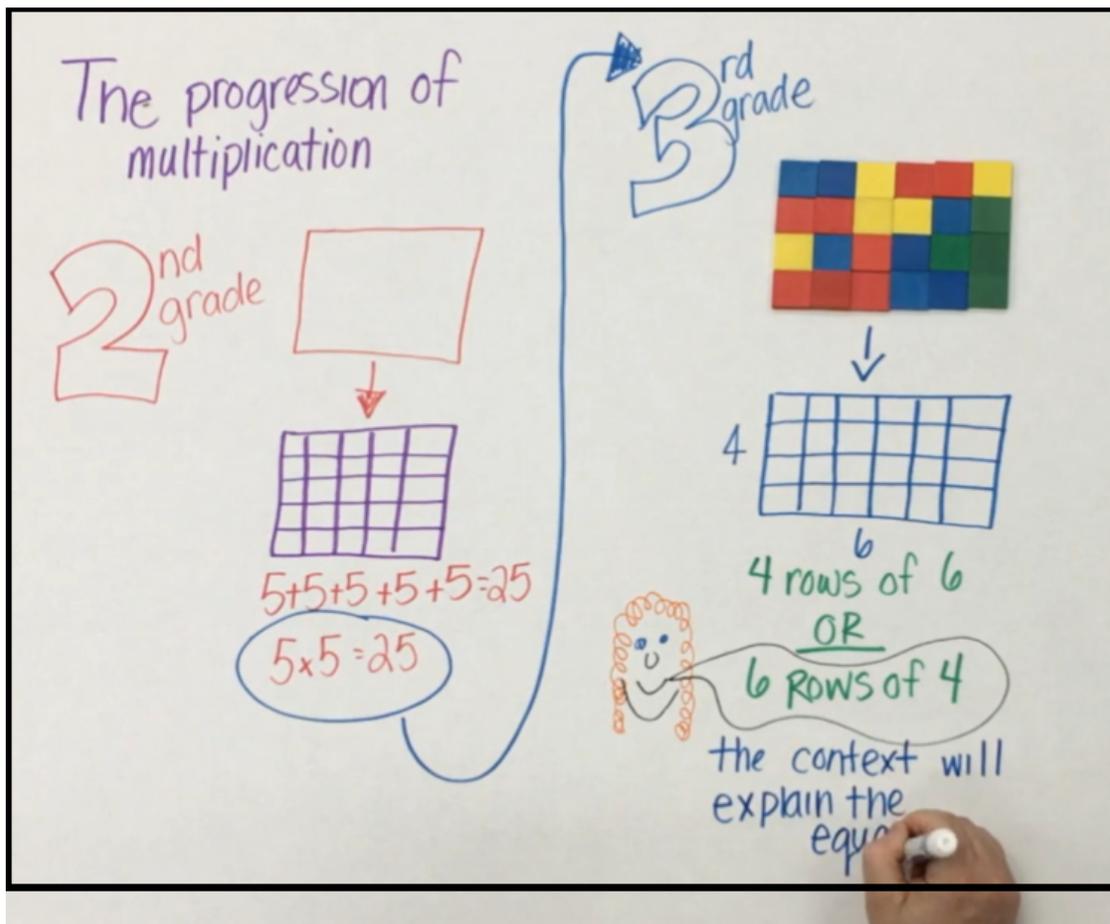
## Progression of Multiplication

"All of us are smarter than one of us." – Graham Fletcher

Graham Fletcher is a math specialist who encourages best practices in elementary mathematics. He has various progression videos that connect concepts throughout grade levels. Click on the image below to see his Progression of Multiplication video. Follow Graham on Twitter @gfletchy or connect with his Facebook page.

The screenshot of the video below can be found at the link below.

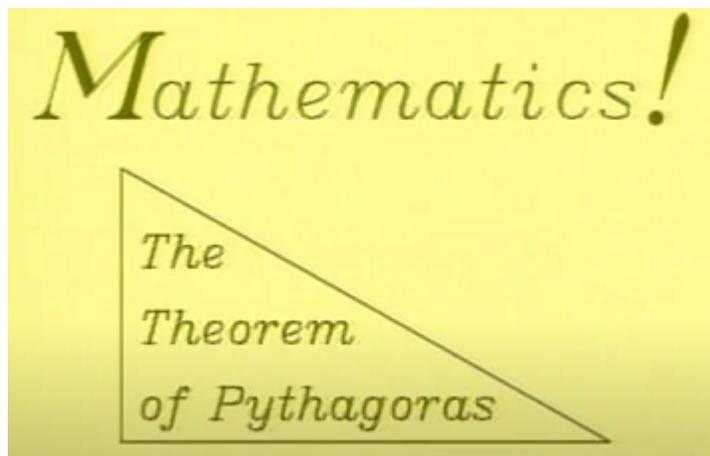
Graham Fletcher Progression Videos



## ***Project Mathematics! Materials Available!***

Middle and high school level teachers have difficulty finding well done mathematics videos. Even with the increased availability of math videos thanks to technology, teachers often have to sift through to find something appropriate for their students. Ahead of its time, *Project Mathematics!* out of Cal Tech had a series of excellent videos for these levels including topics from similarity to pi to trigonometry. Many are familiar with "The Story of Pi" production. Fortunately, these are now available FOR FREE on YouTube along with their supporting materials!

Click the image below to be taken to "The Theorem of Pythagoras" video.



**Project Mathematics Playlist**

**Project Mathematics  
Workbooks**

## By Request, we are repeating this article from October: Resources from Student Achievement Partners (SAP) And St. Clair RESA

The Coronavirus pandemic has forced many of us to make decisions that we would not otherwise have to under normal conditions, such as face-to-face, hybrid or totally online instruction; synchronous v. asynchronous – to name a few. It may also **force us to also examine the content that we are able to teach this year**. To help with these decisions, Student Achievement Partners (SAP) has created documents to **give guidance to teachers and school curriculum directors on how to prioritize the teaching of mathematical content this year**. The [2020-21 Support for Instructional Content in ELA/Literacy and Mathematics](#) gives guidance to K-8 teachers by grade level and the [2020-21 Support for Instructional Prioritization in High School Mathematics](#) gives advice to teachers of secondary mathematics courses, whether organized by subject or integrated.

In an effort to make these documents more **user-friendly to teachers**, the math consultants at St. Clair RESA takes the SAP documents and adds links to resources that teachers will find helpful in teaching the mathematical standards.

- The K-8 Document, [Important Prerequisite Math Standards with Resources](#) contains links to free virtual manipulatives for most grade level content standards and the prerequisites standards contains resource links for reteaching.
- The high school document, [Resources for the 2020-21 Support for Instructional Prioritization in High School Mathematics](#) is a spreadsheet that contains links to units, lesson plans and meaningful tasks for standards which the SAP document identify as priority or reduced emphasis standards. It also identifies standards aligned to the PSAT and SAT as given in the [College Board + Michigan SAT Suite of Assessments: Alignment to Michigan Standards](#) document. The tabs for Algebra 1, Geometry and Algebra 2 are complete. The Integrated Math 1, 2 and 3 will be completed soon.

We hope that MCTM members will find these documents helpful as they navigate through this difficult year.

Jim Licht, Laura Chambless, & Minna Turrell, St. Clair RESA

PDF Version of This Content

## Math Talks in Secondary Mathematics Classrooms?

Elementary teachers know and use math talks as part of their mathematics lessons. Secondary educators are also attending PD in order to learn how to help students develop mathematical reasoning skills, build math discussion skills, value a variety of thinking strategies, and create classroom community. Here are some math talk ideas for the secondary classroom ranging from ratios and fraction reasoning to geometry and graphs of functions. (Click on image to be taken to website.)

<https://howweteach.com/mathtalks/>



MathTalks Website



## MCTM Blog “Perseverance in Problem Solving”

This month on the blog **Chelsea Ridge**, the Math Program Coordinator at GVSU, is here to talk to us about perseverance in problem solving and how that might look and sound during the ongoing Covid-19 pandemic. [Innovators Compass](#) is a tool she offers as helpful during this time. As she says, "One thing I have found to be true is that utilizing this structure has broadened my mindset, increased my perseverance, and provided far more creative solution pathways." Check out more of what Chelsea has for us by [clicking here!](#)

We appreciate our teacher authors sharing their voice and would LOVE to hear from you! Reach out to [membership@mictm.org](mailto:membership@mictm.org) to be featured on the MCTM blog!

**Kelli Vansettters**, MCTM Membership Chair

November Blog Post



### Michal Huizenga

I am a third year teacher at Rockford High School and I teach Algebra 2, PreCalculus, and Geometry. I am passionate about creating a mathematics classroom where students feel safe, experience success, and learn to reason more soundly and wonder more deeply about the world they live in. Being a part of MCTM has been a great way to connect with other math educators in the state, who have helped push my thinking in areas such as antiracism teaching and teaching with an asset based lens.



**Kelli VanSetters, Region 4 Director**

I am a literacy coach for Ottawa Area ISD. Previously, I taught 4th grade and Kindergarten in Byron Center. I have a passion for learning and growing, and instilling a love of learning in others -- both children and adults. I got involved in MCTM to continue to create positive change in math teaching and learning across the state.



Click on image at right to be taken to an informational video on YouTube

[Info & Register](#)



Michigan Mathematics Educators (#MichME) is a **collaborative networking group** where administrators, math coaches, math specialists, and math teachers work together to learn and implement effective teaching and learning of mathematics.

For the 2020-2021 school year, we will meet virtually with educators across the state who are interested in common topics. While this is a group that will focus on what works in teaching and learning mathematics K-12, it will also offer an amazing **networking and personal reflection** opportunity for all involved.

While the format and cost is changing, the quality you have come to expect will not change. #MichME's core values are **building relationships, cultivating a growth mindset, and deeper learning through dialogue.**

## **MCTM's Miriam Schaefer Scholarship Winners 2020**

Over the next three months, we will feature this year's recipients of the Miriam Schaefer Scholarship. These awardees are undergraduate students at Michigan colleges and universities studying to join us as K-12 educators!



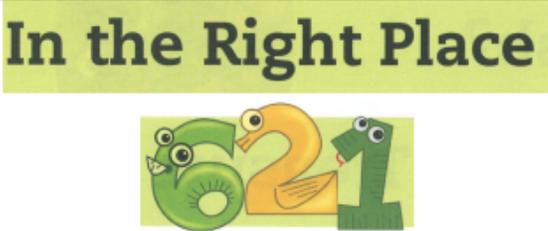
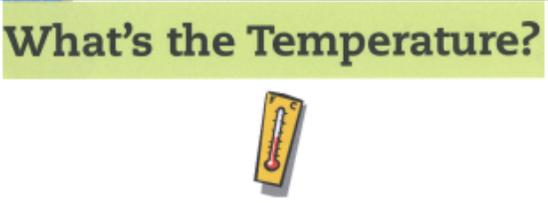
## Megan Frazer, Northern Michigan University

Megan is a secondary education major with an interest in middle school level students. She wants to model lifelong learning to her future students and is already building her professional learning network through MCTM and Twitter. One aspect of instruction that is particularly important to her is reading.

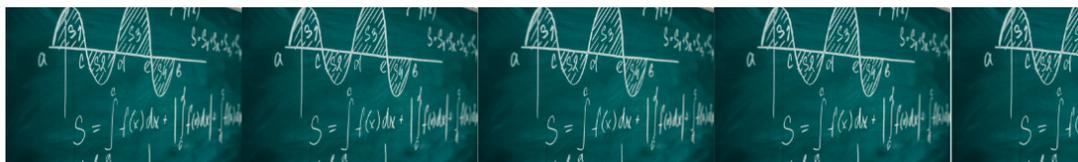
“When one thinks of the discipline of mathematics, they do not normally think of reading. However, we actually read all sorts of different math texts, such as word problems, graphs, charts, measuring tools, and practical situations! To get our students to learn this way, we teach them how to read these math texts like a mathematician might, through modeling, think-aloud’s, looking for patterns and structure, reading strategies, and organizing information. Some of these reading techniques are also standards for mathematical practice because they are critical to understanding math. Every classroom has a diverse set of learners who all learn in a unique manner. Integrating reading and language arts helps a range of students make connections and internalize information.”

### Adventures with Mathematics Activities

An MCTM initiative created a series of books called Adventures with Mathematics, designed for students as summer activities. Here are the two activities we are highlighting this month. They are free of charge on the Publications page of the MCTM website. Are you a member? You get access to **ALL** 12 books for free!

Grade Level	Activity	Description
Climbing from Grade 2 to Grade 3		By R Sochacki and L Wischmeyer, this game includes all the pieces needed to practice place value (to hundreds) and to compare numerals. Game variations suggested as well.
Climbing from Grade 5 to Grade 6		By Shawn Schmuck, this activity can be done by individual students at home. They collect and display data and then make predictions.

Get These for FREE on our Publications Page!



### Is it Time to Kill Calculus?

A reader drew our attention to [this](#) article from *Salon*. After giving a succinct summary of the current mathematics curriculum, there is a call for high school mathematics curriculum

the current mathematics curriculum, there is a call for high school mathematics curriculum centered around data. It also mentions the College Board's pre-AP curriculum recommendations that integrate data analysis and data science with geometry and algebra II. See comments below from post-high school students who had access to both calculus and statistics during high school. The article was shared with them, and their opinion was sought out.

**What do YOU think? Let us know on Twitter @michiganmath #calculusordata.**



**Ian Barber** Both are very important but I find data science builds on calculus in a lot of situations that are actual data science

Like · Reply · 1d



**Sasha Rudow** Data science is more "real life" and calculus is more conceptual. I think data science would make more sense for the general student population while calculus may make more sense for students who want to go into advanced STEM fields

Like · Reply · 23h



**Rebecca Perry** I'm currently in a masters program for data science and have had to use calculus to prove many of the algorithms. I feel like data analytics would be highly helpful for high school students and how it relates to statistics, but calculus is needed for data science.

Like · Reply · 18h



**Melanie Duzyj** I agree one hundred percent with Rebecca Perry on this one. Calculus and physics help students understand how things move and interact with one another, and the future of data science actually requires that kind of problem solving.

Splunk's current head of machine learning is a physicist by background who writes string theory papers as a hobby. He helped us re-think how we built our machine learning algorithm based on the delta between logs as they pass through an ML "model". Nobody has been thinking about analytics or ML this way to date but this is where analytics is going.

TLDR: the best CS and analytics programs are going to merge calculus, physics and data science together.

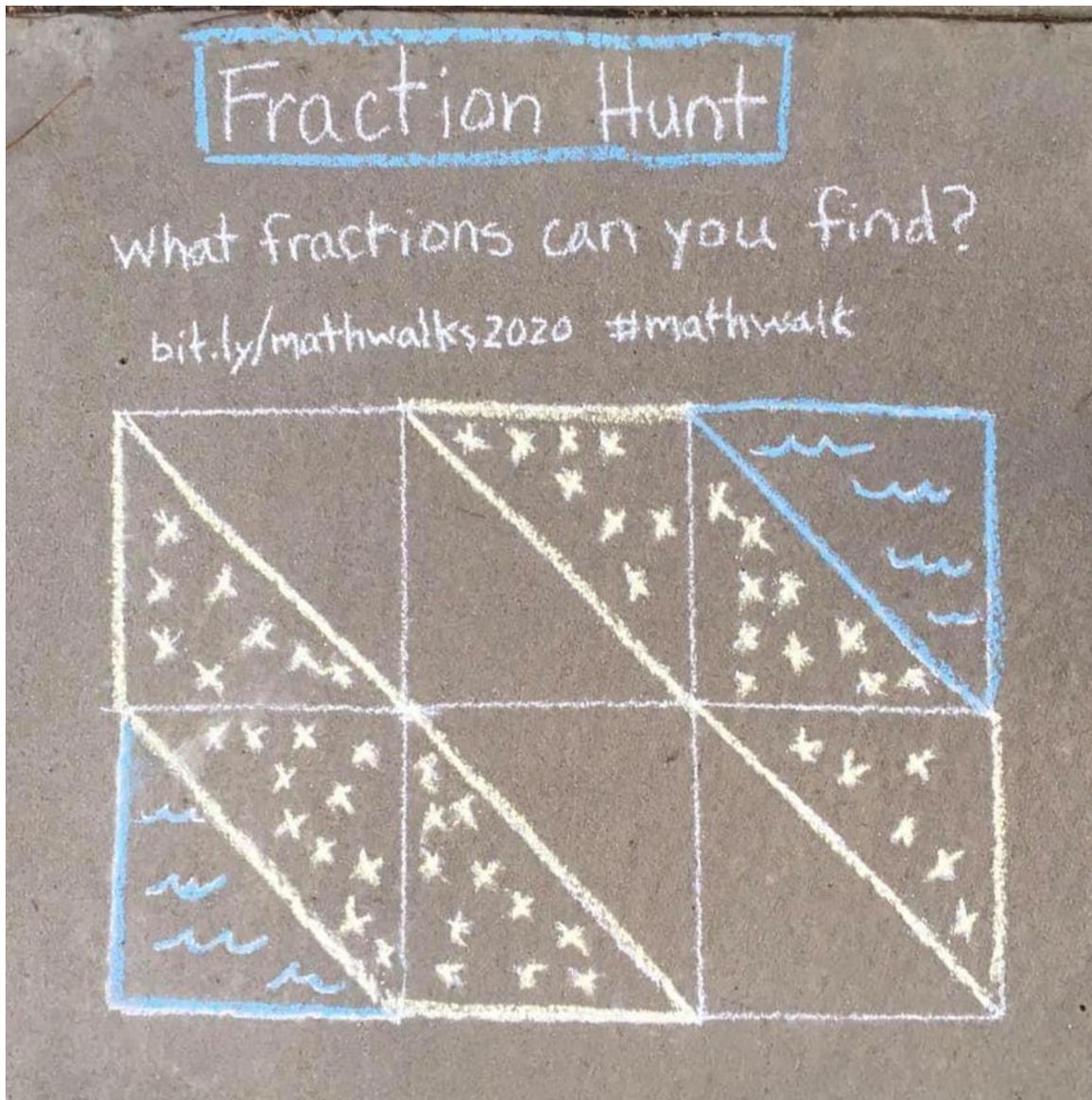
Ps data scientists and IT/security admins and organizational decision makers are soon going to be using the same platforms anyway with the data all in one place - so no matter what, everyone should take a data science course ASAP to understand what that scientist team is doing with the data.

Like · Reply · 17h

## #MathWalks

Traci Fikstad Jackson created Math Walks on Facebook at the beginning of April this year. She shares this math images in a variety of teacher groups on FB including Build Math Minds. Her latest image is based on [Math for Love's](#) Fraction Talks. All of her images are available for free on her website:

<https://sites.google.com/powayusd.com/math-walks/home>



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Welcome to **MI Math Community**! One of MCTM's renewed initiatives is a monthly e-newsletter to share information about mathematics, mathematics education, and the happenings of MCTM.

Have an idea or topic you'd like to see included? Have a short article to submit for publication consideration? Want to give feedback? Please email MCTM Publications Director and MI Math Community Editor **Christine Kincaid Dewey** at [Publication@mictm.org](mailto:Publication@mictm.org) . Look for the e-newsletter to develop and grow over time based on member input.

**Please share this newsletter with ALL of your educator colleagues! We want to spread the good news!**

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