

# KATM Bulletin

Kansas Association of Teachers of Mathematics

October 2021

# Save the Date

**Kansas Association of Teachers of  
Mathematics State Conference**

Emporia State University

Friday, March 25

Information about the conference and speaker proposals  
coming soon

## A Message from our President

Welcome to Fall 2021! As we engage in another year of new challenges, I encourage each of you to focus on how much you and your students have learned! Over the past year and a half, we as a field of math educators, have been learning how to teach during a pandemic and what a learning experience it has been! The struggles of this year may feel almost more burdensome, as many of us had high hopes for a more ‘normal’ year, and that may not be the case in some situations. Covid fatigue is also a very real thing that we are dealing with, personally, with our colleagues, students, and families. It is important to acknowledge that these struggles are present, but to continue to focus on our passions as educators – our students and the learning process!

I have the great honor to serve as the KATM President for the 2021-22 academic year! I am looking forward to seeing continued growth in implementing effective mathematics teaching practices throughout Kansas classrooms. As an Assistant Professor in the Teacher Apprentice Program at Wichita State University, I work first-hand with pre-service teachers, currently serving in Kansas school districts as paraprofessionals, as they become licensed teacher educators. Through this, I get to see the amazing impact you have on pre-service teachers and your PreK-12 grade students as they are growing to truly learn, understand and even love math.

As part of my role as the KATM President, I would like to encourage each of you to share your math teaching and learning journeys on social media. This is a great opportunity to network throughout the year, learn from other Kansas math teachers and support one another through the challenges. The KATM board will also be hosting a series of professional learning sessions throughout the year. Please find us on Facebook or Twitter and join the conversation.

KATM is excited to offer our annual conference, face-to-face, this spring, on March 25 in Emporia, KS. I hope you will plan to attend this event, focused on learning and growing together, as we enrich the math learning opportunities for all Kansas students.

Lastly, I have a special KATM challenge for you! Find a teacher colleague and remind them of the amazing work they are doing for Kansas children, specifically, as they teach math! Be specific, give them evidence of their impact, maybe a new math task they tried, a great learning opportunity they provided, or a lightbulb moment they had with a student. Let them know that you see them making a difference in the lives of their student. Then challenge them to share with another teacher. Let’s make our KATM mission, “fostering an engaged community to advance effective practices in teaching and learning mathematics throughout Kansas” come alive!

Looking forward to a great year of learning!

Julie Thiele, PhD  
KATM President 2021-22

Dear Kansas Math Teachers,

Greetings! Today I would like to share with you an idea that is one of the good things I learned from last year. What positive takeaways did you have after last year?

Last year brought many changes for all of us. One change at my school was that we were basically paperless throughout the year. Giving only digital assessments was new for me, and it was not my favorite thing. In math, I think there will always be a place for paper and pencil. However, moving to digital assessments led me to one change that was very positive and that I choose to continue this year. This change was leaving verbal feedback for my students.

The most effective feedback is personalized for students that gives them information to move forward in their learning. Usually, leaving personal feedback is too time consuming. Last year, I discovered a free extension called Mote. This allowed me to leave voice notes for students on digital assignments. I was amazed at the quality of feedback I could give to my students with just a 15 second voice note. I was able to give each student exactly the feedback that they needed to hear. My students could hear my excitement as I told them what they did well.

This year, I have been able to go back to paper and pencil assessments. However, I continue to use verbal feedback using Mote. My students take their assessments on paper. In Google Classroom, I leave them mote notes about mistakes that they made, or things that they did well.

Just the other day, I got an email, informing me that I had recorded my 1000th mote. Imagine....1000 chances to give students the feedback they needed to hear. If you're looking for a way to improve the feedback you give to your students, give digital audio notes a try. I used the extension mote, but there are probably other tools that could be used as well.

KATM Bulletin Editor

*Jenny Wilcox*



Look for information about upcoming events in your KATM zone!

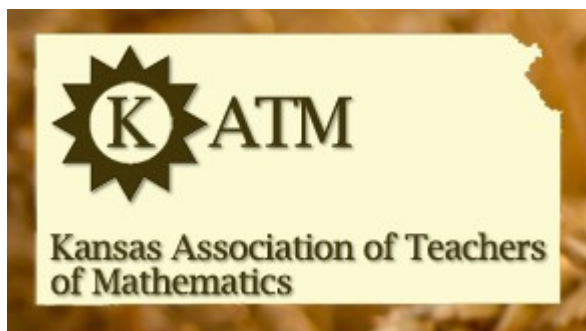
What's your favorite teaching tip? What burning questions do you have?

Post them to our Facebook page!



[Click here](#) if you're interested in joining in conversation with other Kansas math teachers in our Facebook groups. Invite your friends too!

[Click here](#) to get information about applying for the Capitol Federal scholarship. It is awarded to a KATM member each year! Check out the note from our recipient from last year on the next page!



[Click here](#) to join KATM! Or let a colleague or friend know about KATM.

## Assessing What We Value with Explain Assignments

Author: Angela Broaddus, PhD, Associate Professor, Mathematics and Computer Science, Benedictine College

Effective teachers appreciate how children think about and do math and provide students instructional experiences that foster mathematical reasoning and enhance students' mathematical knowledge of concepts and processes. For example, teachers often facilitate mathematical discussions that incorporate multiple representations and explanations of how students think about the mathematics they study. Yet, many assessment tools remain focused on procedures and processes and provide teachers little evidence of their students' mathematical reasoning. In addition, during the COVID-19 pandemic, teachers at all levels struggled to teach, observe, and assess student learning due to barriers associated with distance learning and online testing. In this article, I describe *Explain Assignments* as options for assessing students' ability to explain mathematical concepts and processes through visual representations/drawings/models they create to accompany their explanations.

Partly in response to the COVID-19 pandemic, I developed Explain Assignments to offset the difficulties related to effective online assessments. Noting how Explain Assignments effectively assess students' understanding of connections among mathematical concepts, processes, and representations, I have retained Explain Assignments even after returning to hybrid and face-to-face instruction.

An Explain Assignment begins with a prompt focused on a mathematical concept or process and requires students to create drawings and explain how the drawings represent solutions, which shifts the focus of assessments from generating solutions to representing and explaining problems and their solutions. In some assignments students choose from sets of numbers to use in their problems, which may generate variation among responses. An example prompt is shown in Figure 1. Sample student responses from college students preparing to teach elementary school are also shown below.

The example shown in Figure 1 gathers information about how students conceptualize multiplication of fractions beyond the procedure to "multiply across the top and the bottom." Students describe what a fraction multiplication expression means in terms of number (or amount) of group(s) and amount in a group; they also create drawings to represent the problem and solution. Students' use of common language and models for multiplication of whole numbers and multiplication of fractions supports purposeful connections among mathematics concepts, processes, and models.

Figure 1. Example Explain Assignment Prompt

Select two proper fractions from the list below. One fraction should be less than  $\frac{1}{2}$  and the other fraction should be greater than  $\frac{1}{2}$ .

$$\frac{2}{3} \quad \frac{3}{7} \quad \frac{5}{7} \quad \frac{8}{9}$$

Write a multiplication expression (e.g.,  $a \times b$ ) using your two fractions. Explain what this expression means in terms of amount of a group, amount in each group, and total amount.

Multiply your two numbers together and give the product. As part of your work give a clearly labeled math drawing (e.g., strip model, fraction strips, number line).

Student 1 correctly interpreted the meaning of the expression and computed the correct product. This student's drawing represented the whole, original fraction factors, and solution. The bar representing the common denominator was not necessary but corresponds visually to the

computed solution of  $\frac{6}{21}$ .

The student further connected the drawing to the computation with a sentence, which suggests the student conceptually understands the problem and solution.

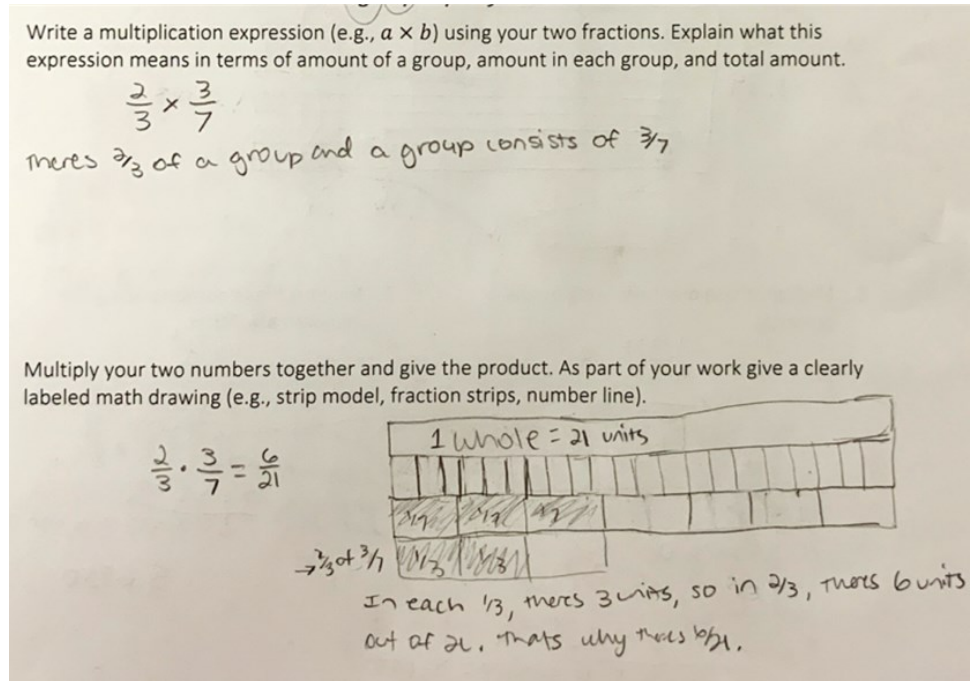


Figure 2. Response from Student 1.

Student 2 correctly interpreted the meaning of the expression and computed the correct product. This student's strip model drawing represented the whole, but the arrangement of the two fractions being multiplied was not consistent with the numerical expression. The area model of the product correctly indicated the solution of

$\frac{6}{21}$ . However, the area model lacked information about the role of each of the fractions being multiplied (e.g., part of a group or amount in an entire group).

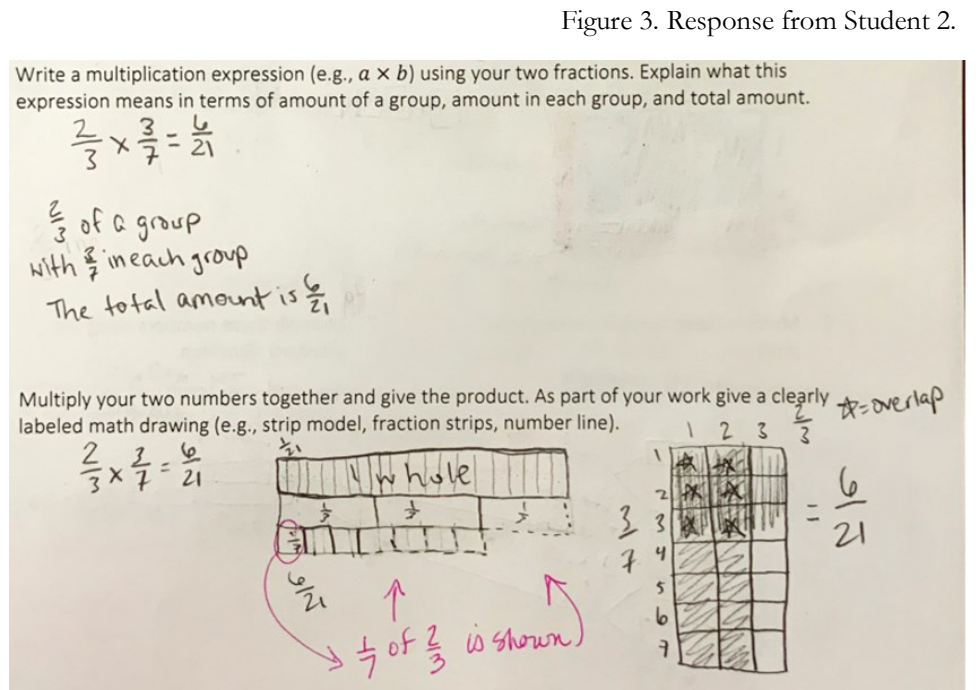


Figure 3. Response from Student 2.

Student 3 described the product but struggled with terminology for parts, wholes, and groups. This response indicated that the student required additional practice describing products of fractions in terms stating the meaning of each fraction in the problem.

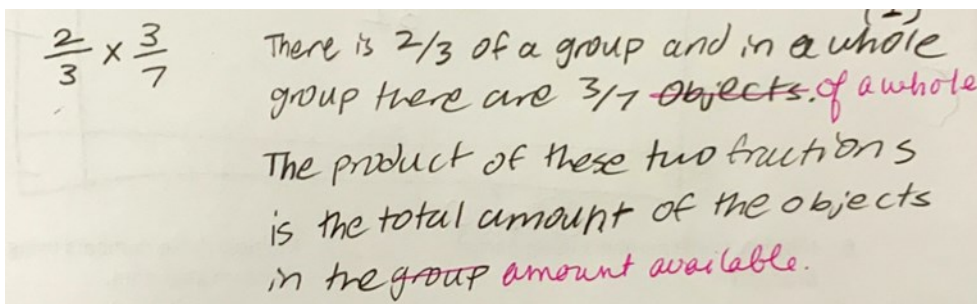


Figure 4. Response from Student 3.

Although I initially developed Explain Assignments as alternatives to traditional tests when we were teaching from home, I have retained them in addition to returning to incorporating traditional tests because Explain Assignments require students to convey their thinking about mathematics. Student responses give me insights about misconceptions, and my feedback supplies students with information to deepen their understanding, even when their computations are accurate. Not only are these appropriate formative assessment practices, but the combination of writing explanations, choosing numbers, and having opportunities to redo their work effectively decreases students' desire to copy each other's work. Students report that Explain Assignments encourage them to develop true understanding of the concepts, indicating that these assessments contribute to learning.

For more information about Explain Assignments, you may contact Angela Broaddus at [abroadus@benedictine.edu](mailto:abroadus@benedictine.edu)

## A Tribute to Margie Hill

If, as a mathematics educator in Kansas during the last 50 years, you ever stepped a professional foot outside of the classroom there is a good chance you know the name of Margie Hill. After a well-spent lifetime growing her family, serving her community, and adding to the profession of mathematics education, Margie Hill passed away on September 21, 2021; her family has our deepest condolences as we remember and celebrate her life.

Margie was a teacher first, investing time and skill in her students at Center North Junior High School in Kansas City, MO, and later at Blue Valley High School in Overland Park, KS. She next invested in other teachers, serving as District Coordinating Teacher of Mathematics, again in the Blue Valley School District. Later investments of her energy and knowledge were made directly into future teachers as a Master Teacher in the UKanTeach Program at The University of Kansas. All along the way, Margie contributed in other ways, such as speaking at conferences and serving on committees that shaped the State of Kansas Mathematics Standards and other policy considerations. No matter her role or capacity, Margie was model of what it meant to know one's values and, with focus and ferocity, let them guide one's actions.

The Kansas Association of Teachers of Mathematics considers itself among the many beneficiaries of the investments Margie made in her profession, and we are perhaps most grateful for her unyielding and vigorous support directly to this organization. Her nearly three decades of effort on behalf of this board, serving multiple roles, including KATM President twice (1995-1996, 2003-2004), is beyond expression. For her vast contribution to the field she received the Ray Kurtz Award in 2006, fitting then even as it predated the copious contributions she would make in the years that followed, right up until her passing. As it often goes with educators, Margie's impact these last five decades won't always be measurable or obvious, but it will be indelible; her absence will be greatly felt. Her memory will be an inspiration for future work- work Margie would certainly never leave quietly untended- and in this way we hope to honor her legacy and build up from the strong foundation she helped lay.

It is with most fond admiration and respect that the KATM Board of Directors remembers Margie Hill, a true advocate of mathematics education.

