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UETCTM



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<u>Meetings</u>

February 22 UETCTM Meeting <u>Assistant Editors:</u> Giovanina Cambaz (ETSU) cambaz@etsu.edu

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Last Meeting

Of the semester

Agenda: 4:00-4:15 pm: Welcome & Announcements 4:15-5:30 pm: Breakout sessions by grade band ** Note: Breakout sessions could end earlier but will not go past 5:30 pm. **** A certificate of attendance will be provided for professional development hours.

Elections: A Google form will be emailed to all current UETCTM members by February 15 to vote. Election results will be announced at the beginning of the February 22 meeting.



Date: **Tuesday, Feb. 22, 2022** Time: **4:00 - 5:30 pm** Location: **Your Couch**

Zoom link:

https://etsu.zoom.us/j/9185091126

8?

pwd=cFE4Smx6OFIMcktGWUJSdT

VNZnlvQT09

Meeting ID: 918 5091 1268

The Upper East Tenrpasscode: 1871613 hers of Mathematics

THE POWER OF USING "WHITEBOARD QUESTIONS"

by K. Morgan Eads 4th Grade

A few years ago, I found myself struggling to engage my students at the beginning of our math block. At the start of the school year, the usual daily math spiral questions or problem/number of the day seemed to work well enough to get us on a good path to learning. As the year wore on, however, I knew I had to shake things up to help my students get excited about math class again. Enter the "Whiteboard Questions."

Whiteboard questions are just how they sound: literally a question or prompt written or displayed on the whiteboard. I found the idea on Pinterest, where the questions were on a variety of subjects, and I modified it for use in my elementary math classroom. At first, I kept the questions simple but engaging: "I am an even number between 15 and 45. what number could I be?" The students could write their answers around the question with their own whiteboard markers. There is just something about getting to write on the board that excites students. I quickly noticed that they eagerly looked for the new whiteboard question each day. As the year progressed, I tried out different, more thought-provoking ideas. One of the students' favorites became "What's the Question?" in which I write an answer on the board and the students would then have to come up with a math problem of their own that would have my answer as the solution. Some weeks, I did alliterations with each day of the week as a theme for the question such as, Multiplication Monday,

Take-Away Tuesday, What's the Question Wednesday, Think About It Thursday, Fraction Friday, etc. I asked questions related to every math topic we studied, and most of the questions were open-ended. This provided for some excellent class discussions. It was also a great form of formative assessment and gave me another opportunity to gage my students' understanding of different math standards.



For the sake of good classroom management, I allowed only a few students at a time to go to the board to answer the question. Other students were working at their seats on our regular daily math spiral questions. Both the Whiteboard Question and other spiral math questions were completed and discussed quickly at the beginning of each lesson. Of course, this concept can be used to review past content or introduce new math ideas. You could also have students write their answer on a piece of paper or sticky note and attach it to the board. Students can also give suggestions to the teacher for future questions. This is another way to engage students and assess student understanding of the math standards. The possibilities are endless. Whiteboard Questions: such a simple concept, yet so fun and engaging for students.

NCTM Student Affiliates The Time Is Now



The Idaho Council of Teachers of Mathematics (ICTM) is currently working closely with a university in Idaho to set up an NCTM student affiliate.

<u>Student affiliates get many benefits</u>—including free registration to NCTM regional conferences. It's a great door opener to our collective mathematics community.

Take the ICTM challenge to encourage new student affiliates in your state!

Upcoming NCTM Events and Professional Development Opportunities

February 2-4: New Orleans, Louisiana Regional

Conference

March 16–18: Indianapolis, Indiana Regional Conference September 26-October 1: 2022 NCTM Annual Meeting &

Exposition



NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

(MT)² Annual Conference **"Starting New** in 2022"

When? Register and/or January 29, 2022 Where? East Robertson High School 158 Kilgore Trace Cross Plains, TN 37049

sign up to speak here!

Find us at https://mt-squared.wildapricat.org/ Follow us on Facebook at Middle Tennessee Math Teachers and

Hello math teachers!

We are so excited that registration for our annual conference on January 29th, 2022 is now open. This year's conference theme is:

"Starting New in 2022"

We need speakers, and we know you have great ideas to share!

Use the QR code on the flyer to register or submit a speaker proposal. You can also visit the event page here.

We can't wait to see you all again and learn together!

MATH CENTERS IN THE CLASSROOM

by Erika Patterson 2nd Grade

The upcoming 2021-2022 school year will begin my 9th year of teaching. I have experience teaching Kindergarten, first, and second grade. This year will be my third year teaching second grade. Over the last several years I have developed a love for teaching math. As a student, I always struggled with math in school. I have found that my personal struggles and triumphs over the years have a strong impact on the way I approach math instruction in my classroom. At the beginning of my teaching career, I focused on "perfecting" my literacy block and my small group instruction in literacy. I felt like my math instruction took a back seat and I spent too much time using whole group instruction. Following my first year of teaching, I decided to emphasize the focus on my math block. I wanted to cut back on whole group instruction and initiate math centers, but I was not sure where to begin. It was important for the centers to be meaningful for students and not overwhelming for myself. After many days observing other classrooms, communicating with other teachers and coaches, and mapping ideas out on paper. I decided to jump in. The rest, as they say, is history and I have never looked back. My only regret is not using math centers sooner in my classroom. What do math centers look like in my

classroom? Each day I begin my math block with a whole group mini lesson. During the mini lesson, I focus on the specific standard/objective for the day and follow the "I do, We do, You do" approach. First, I teach the standards and model for students how to successfully complete the tasks for the day. After modeling, the students help me walk through the steps of a few problems together. Last, students complete a problem, either independently or, occasionally, with a partner. From the mini lesson, we move into groups.

As a student, I always struggled with math in school. I have found that my personal struggles and triumphs over the years have a strong impact on the way I approach math instruction in my classroom. ...

Students' groups are based on ability level and knowledge of the different objectives. Groups change regularly in order to best meet the needs of everyone in the class. I have organized 4 different math centers: working with the teacher, working independently, reviewing previous standards, and technology. Students spend approximately 12-15 minutes per center and rotate through all 4 on a daily basis. At the teacher center, I spend time working with students at their specific level (pushing my higher achievers, and clarifying concepts for my struggling learners).

NCTM Members

At the independent center, students complete a task to demonstrate their understanding of the daily objective. The third center is review for concepts that students have struggled with previously or to maintain student knowledge.

For example, we may review addition and subtraction as students learn time and money. Lastly, I have a technology center. I often assign online work to go along with the concepts through Google Classroom, GoMath portal, IXL, etc...

Overall, the implementation of math centers in my classroom is successful. The organization is functional and requires minimal time especially in comparison to planning full math blocks every day. Students understand the daily routine and I am able to closely monitor student progress while personalizing instruction for each group of students. Math centers have made teaching math in my classroom much more enjoyable and I plan to continue refining and implementing them in my classroom for years to come.

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NEW ORLEANS FEBRUARY 2-4, 2022





SUMMARY OF IMPORTANT DATES

The table below contains a summary of upcoming and future NCTM conferences. We would appreciate your sharing this information with your membership.

Name of Conference	Call for Proposals	Registration Information
2021 NCTM Research Conference Virtual December 10	Proposal Submission Closed	<u>Registration open</u>
2022 NCTM Regional Conference New Orleans, LA February 2-4	Proposal Submission Closed	<u>Click here</u> to register.
2022 NCTM Regional Conference Indianapolis, IN March 16-18	Proposal Submission Closed	<u>Click here</u> to register.
2022 NCTM Annual Meeting & Exposition Los Angeles, CA September 28-October 1	Proposal Submission Closed	Registration is not yet available.
2022 NCTM Regional Conference Baltimore, MD November 30-December 2	Proposal Submission Opening February 2022	Registration is not yet available.
2023 NCTM Virtual Conference Virtual March 29-April 1	Proposal Submission Opening April 2022	Registration is not yet available.
2023 NCTM Annual Meeting & Exposition Washington, DC October 25-28	Proposal Submission Opening July 2022	Registration is not yet available.
2024 NCTM Regional Conference Seattle, WA February 7-9	Proposal Submission Opening February 2023	Registration is not yet available.

RELAX: IT'S ONLY MATH!

items.

by Diane Leah Rutledge Begley

6-8 Grade

"I am not good at math!" "This is too hard!" "I don't like math!" My all-time favorite is, "When am I ever going to use this?" How many times have we heard these words come out of our students' mouths? It seems more and more students are experiencing some kind of math anxiety that inhibits their ability to learn and flourish.

Having been teaching math for 30 plus years, with most being at the 6th grade level, the love or hate of math has already been solidified in the minds of most students. It also seems that they feel positively or negatively about this subject and there is not much middle ground. It has been my mission for the past several years to change the way students view this subject. There are several processes that I have used to hopefully make this subject more appealing to the masses and not just the few.

One of the things I do is to keep the students as organized as possible. I feel that organization is so important in this subject matter. When the students enter my room, they know it is time to get prepared for class. I require that all my students keep a math journal. It is here that they copy examples off the board, keep their notes, and copy down the definitions of terms. This journal follows them through the entire year. They know to have pencil and paper ready.

They also need to have the work out that we worked on the day before or it could be homework they did that evening. If the students know my expectations and get prepared for class during the few minutes they are in my room before we start, they will not experience any anxiety at this point. The trouble comes when they cannot find all their math supplies and have to dig in their notebooks to find their



They ask to go back to their locker because they can't find their paper. Their level of anxiety is up and we have not even started class. I had the privilege of continuing my education this summer taking a virtual class through ETSU. There was one day that my technology was not working correctly. My computer kept freezing up and I could not get logged back into the meeting. My anxiety was at an all-time high and it truly ruined my day. I even thought about just dropping out of the class. Instead I asked a friend of mine to come over and show me a couple of things that I was doing wrong. While I was going through the process of trying to get back to the meeting that morning (which was unsuccessful), I thought about the students I have and how they feel when the class period does not begin smoothly or when we discuss something that is new to them. It was at this point that I could actually feel the anxiety that my students feel when getting ready for the beginning of class, when they are not prepared or starting a new concept they don't seem to understand.

Another thing that I do is to create a calm environment in my actual classroom. I give it a "homey" feel. I have curtains on the windows, some of my personal objects are brought in, and pictures of my family are on display. I try to have music playing as they enter my classroom and keep it playing as they get prepared for the next 50 minutes. I try to use lamps or low lighting instead of the overhead fluorescent lights. I feel when they walk into an atmosphere like this, they sense a feeling of peace and calmness. I believe doing this keeps their anxiety low.

I also want my students to know that when they come into my classroom, they are coming to a safe place. I do not allow any "bullying" type behavior, and we do not make fun of others. Should I ever get a sense of this, I intervene quickly. If someone is struggling with their work, I want them to feel comfortable coming to me. Sometimes I hear students say they are "afraid" to go to their teachers for help. This should not be the case at all. I am the type of teacher that is constantly monitoring individual or group work. I try to find any errors or struggles before they even have to come to me. I am constantly aware of what they are doing and how they are progressing.

I will pair students to work together, if I feel there is a lack of understanding. I just want them to know that I am willing to assist in any way and will do anything to help them achieve. At this age, some students feel more comfortable being close to me in proximity. If I see someone is majorly struggling, I will have him/her come sit near my desk or I will move a desk close to the student. This way they do not have to find me. I am already close by. I believe this is another proactive way to approach lessening the anxiety they feel with math class.

The majority of my teaching career has been involved with teaching sixth grade math. The transition from elementary school to middle school is a major ordeal in itself.

Sometimes I hear students say they are "afraid" to go to their teachers for help. This should not be the case at all.

Most of them are experiencing having lockers for the first time and having to manipulate the locks on them. They have more freedom and responsibility than they had in elementary school. They are having to keep up with what class they are going to next and what supplies they need. With that being said, I try to keep in my classroom any items they might need to use. Journals stay in my room. I do keep paper, pencils and extra books, if they need to borrow them. Most students do not abuse this with most being appreciative and grateful. Another way to keep anxiety low.

The last strategy I use in my classes is trying to be as positive and proactive as I possibly can. When we are checking work together or starting a new concept I try to never use the word "no" or "that's not correct". I want them to know that an incorrect answer does not equal failure. Instead I will try to steer them in the right direction and ask how they got this answer. I will suggest they come to the board and share with the class their thought process, only if they want to. Some prefer to talk to me individually, and I respect that. Some students will even ask to come to the board to explain how they figured out a problem. This empowers them and makes them feel even more comfortable in class.

Play the

No process is perfect. There is no magical solution in education. It is all trial and error on everyone's part. Part of that is to get to know the students individually. At one particular school where I was teaching, several students liked to get their lunch and bring it to my room so we could eat together. I wanted to be selfish and tell myself that it was "my time", but then I realized how much joy it brought them. This is what it's all about. The students need to feel wanted, feel comfortable and safe when they come to school. If the students are happy being at school, the rest should just be icing on the cake. I know there will be struggles, guestions, frustration, and all that goes with being in the middle school setting. but if they know you are on their side, hopefully their anxiety won't come to the surface so easily and if it does, I have a plan in place to say to them..." Relax: It's only Math!"

2022 Board of Directors Election

NCTM members will be electing four new Board members to the Board of Directors this spring. The Board of Directors sets the direction, establishes policy, and oversees the activities of the Council. The newly elected Board members will begin their terms at the conclusion of the NCTM Annual Meeting and Exposition in October 2022.

Individual NCTM members will be asked to vote for one candidate for Director from the Canadian region, one Middle School candidate, and two candidates for Director At-Large. The election will be conducted exclusively online. If your individual membership is current as of January 28, 2022, you will be eligible to vote in this year's election, which opens February 14.

Make sure your email address is up to date to receive ballot information when voting begins. Log in to your profile today to confirm your contact information is correct.

The Nominations and Elections Committee is pleased to announce the candidates for this year's election:



Rules

Use the digits in the year 2022 and the operations +, -, x, ÷, sqrt (square root), ^ (raise to a power), ! (factorial), and !! (double factorial) along with grouping symbols, to write expressions for the counting numbers 1 through 100. All four digits must be used in the expression. Only the digits 2, 0, 2, 2 may be used. Multi-digit numbers such as 20, 220, or 0.22 will be accepted this year.

The square function may NOT be used. Nor may the cube, raise to a fourth power, or any other function that raises a number to a specific power. For example, $(2 + 0)^2 - 2!$ is an acceptable way to write 2, because ^ is an acceptable operation and it uses exactly the digits 2, 0, 2, and 2. But 2^2 + 0! + 2 + 2! is not an acceptable way to write 9, because "^2" is not an acceptable operation, and there are not four 2's available. Similarly, 2^3 + 0! -2 - 2! would not be an acceptable way to write 5 since "^3" is not an acceptable operation. Multifactorials other than the double factorials may NOT be used this year. Although explored in previous years, many people felt they took away some of the challenge, and they were very hard to read.

The integer function may NOT be used. Nor may the round, floor, ceiling, or truncate functions. Remember that 0! by definition is equal to 1. Depending on the context where 0^0 occurs, it can be 1, indeterminate, or undefined/nonexistent. For this game we will accept the value 0^0=1. The four digits can be used in any order, but we encourage you to challenge yourself to use the digits in the order 2, 0, 2, 2. We also encourage solutions using only the single digit numbers 2, 0, 2, and 2 rather than double digits like 0.2 or 22.

APPLY FOR: GRANTS, SCHOLARSHIPS, AND AWARDS

Mathematics Education Trust (MET)

The Mathematics Education Trust (MET) was established in 1976 and provides NCTM members access to more than \$150,000 in grants, scholarships, and other awards. Learn more about the full range of opportunities and apply today for the fall cycle of MET Grants.



New Grants For: Teachers, Educators, Students, Researchers, Leaders, & Coaches

<u>Apply Today!</u>

NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

MIDDLE SCHOOL MATH GAMES: ARE THEY REALLY SO IMPORTANT?

by Elizabeth Saxena 6,7,8 Grade

Any teacher who has been in a classroom during the last decade is well aware that, long gone are the days of teachers being curriculum deliverers through endless worksheets and fillin-the-blank study guides. Nonetheless, there are many teachers, newbies and seasoned veteran teachers alike, who allow their mathematics instruction to fall into the same monotonous routine, year after year, including how they review skills in preparation for tests. Perhaps this happens, because so much of teaching does remain constant from year to year, or the demands placed upon teachers consistently increase, leaving teachers with less time all around.

Whatever the reason that we as mathematics teachers might find ourselves passively falling into this common practice, in order to remain relevant and effective as educators, we must proactively make the choice to employ creativity, flexibility, and a bit of ingenuity to consistently engage our students in actively learning and retaining skills mastered. One way teachers can do this is by regularly integrating math skill review games into classroom concepts and skills review routines. Many of us legitimately make the argument that we simply cannot spare an extra day for review, or lack time to gamify skills review. Admittedly, these are very valid objections, but before deciding to stop reading to finish grading a stack of papers, let's explore a few reasons why we as teachers cannot afford not to invite our students into a world of learning that is as engaging as the digital brain-candy vying daily for space in their minds, and holding their collective attention captive. .

It is no secret that, each year, online gaming designers and social media engineers spend millions of dollars studying what we as teachers already know; simply put, novelty and pleasure, paired with any activity, primes the human brain to remember and store learned information in our long-term memory. In other words, the more enjoyment we receive from an activity, the more receptive our minds are in storing the information we learned during that activity. On the flip side, any teacher who has ever experienced the dramatic sighs and exaggerated eye rolls that occur when handing out written study guides, knows that many students would rather wear braces into adulthood than robotically fill in the blank on a worksheet. Naysayers insist that these rote learning study guides are very effective and engaging, but how many of us adults look forward to the fill-in-theblank IRS worksheets required of us each year? Likewise, although we fill out the same form, with the same numbers and information, each year, remarkably few of us have mastered the algorithm used to calculate what we annually owe Uncle Sam. Although gamifying math skills practice is much more effective and engaging than rote memorization for test review, there are many additional activities in the mathematics classroom in which gamifying learning enhances student learning and skill retention.

For example, gamifying formative assessment is an extremely effective way for students to quickly convey individual levels of understanding. It goes without saying that eager, voluntary student participation also gives us as educators a true snapshot of overall student learning and effectively informs instruction as to which our concepts and skills should be reinforced and which ones are mastered. Effective teachers use this information to reveal any misconceptions students might have about specific concepts as well as error patterns that identify instructional deficits.

Playing math review games also motivates even the most reluctant of learners, including those with learning disabilities and impulse control deficits, and increases overall classroom participation. In addition, review games allow students to ask those questions they were afraid to ask in class. This also gives teachers a way to address those questions in a way that is more personal, while avoiding singling out individual students, which is vital to future student participation in the middle school setting.

There are many classroom review games and digital resources on the internet that gamify learning and review skills. As a fellow educator, I want to challenge you to some of the time, control. give up organization, and engage your middle school students in these fun learning games. The visible change will transform your whole classroom environment, student interactions and most importantly, your students' perception of learning through simple, review and engaging games integrated into the classroom.

I have compiled a brief list below of classroom games and digital online gamifying platforms, many of which can also be modified for use in other subjects as well.

1. Survivor- This game is played like four corners. I have a PowerPoint created with a fun Survivor theme song and sound effects from the Survivor series. It does take a little time to set up the template but after that you have created a review in a matter of minutes.

Directions:

Label the corners 1, 2, 3, 4. Explain to students that they are going to play a game, but they are not allowed to run or talk. Instruct students to stand up and reveal the first slide. The questions are formatted with answer choices in A. B. C. and D. Read the question and all of the answer choices aloud and students will go to the corner they think is correct. Students have 30 seconds to choose. Any students not choosing a corner are automatically out. When everyone has chosen a corner, reveal the answer. Students in the wrong corner, will take a seat and write the remaining game questions and the correct answer choice down. Students must still participate if they are out, and can still review but are no longer an active corner chooser in the dame.

Just like the Survivor series, the last Survivor in the game usually wins a prize. 2. Kahoot- This free, digital online review game platform is beneficial if you are pressed for time. (Kahoot offers a paid version as well, but I have found the free version works just fine.) There are thousands of questions you can use to build your review game or you can create your own questions.

Once you have created it, it saves it for your personal use or you can share your creation with fellow educators. Students can play as teams or individually.

3. Quizizz- This is another online game platform that is free and has an app so students can play on their mobile devices from anywhere. It works similarly to Kahoot, but the difference is that all students are answering the same questions at different times, and it is student paced. Teachers can choose to create their own quiz or select different questions from a database containing other teachers' quizzes. There are thousands of guizzes to choose from in all subject areas as well. It is Google Classroom friendly, and can be assigned as homework or as an extra free time activity. The most exciting thing about this online game is that it breaks down which questions students had the most difficulty with, and allows the teacher to present those questions for discussion.

4. Scoot- This classroom game is easy and gets students up and moving. Before class, you can cut up a worksheet with enough problems to place one on each student's desk.

Directions:

Students should get out a sheet of paper and number their paper according to the amount of questions you have.

Then the teacher lays a question on each student's desk. Each student will stand at a desk and answer the question on the desk, matching it with the corresponding number on their paper. Instruct students that each time the bell rings, they will shift one desk to their right.



Students will have 1 minute to complete each question (I use a timer). When the timer bell rings, the students will shift to the right for the next question. If a student is at the last seat in the back row, they will move forward to the front and continue right. If a student is at the end of the row, they will move to the next row.

This activity continues until students have made their way back to the original starting point.

Review the correct answers and students self-grade their papers, making corrections.

Discuss as a whole group, what questions were difficult and why.

5. Minute to Win It- This is probably my students' most favorite game A buzzer at the front of the room is necessary. Directions:

Divide the class into teams of 4 or 5 students. Each team will send one team member up to the front to answer the question. The first person to ring in and answer correctly will earn the right to play the challenge game for more points for their team. Students have one minute to play silly games I have created and get points for their team.

The team with the most points at the end of the game is the winner.

NCTM — Now More Than Ever

For the past 100 years, NCTM has supported the math education community, not just during unprecedented times like these but 365 days a year.

There has never been a more important time to renew your membership. You'll not only guarantee your continued access to NCTM's many resources, but you'll also remain a vital part of NCTM's vibrant worldwide community.

We are stronger together so we hope that you will renew today. If you know others that would benefit from membership, please urge them to join NCTM as well.

Thank you for your continued support! https://www.nctm.org/membership/



Upper East Tennessee Council of Teachers of Mathematics

Complete the application and return to the address below with a check for \$10.00 made payable to UETCTM.

Sevier Middle School C/O Julie Tester-UETCTM 1200 Wateree Street Kingsport, TN 37660 Kingsport, TN 37660

Name: ______ Home Address: ______ Home Phone: (_____) ____ - _____ District: _____ School: ______ School Address: ______

School Phone: (_____) _____ - _____ - _____ Email Address: _____

UETCTM may be asked to share your information with other math organizations (NCTM, TMTA, etc.) that promote mathematics education.

Please check the following statements if applicable:

Please check if you do NOT want your information to be shared.

I am a current member of NCTM.

I am interested in leading/presenting a session at UETCTM.

I am interested in holding a leadership position with UETCTM