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# Upper East Tennessee Council of Teachers of Mathematics

NEWSLETTER

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Meet & greet.  
Meet to be greater.



**Mark your calendars now: 2016 fall conferences offer excellent opportunities for networking, generating enthusiasm and new ideas, and exploring new perspectives.**

**INNOV8 CONFERENCE:  
Engaging the struggling learner.**

**St. Louis: Nov 16-18, 2016**

- *Hands-on experience implementing research-based math education practices.*
- *Connect with peers facing similar challenges and collaborate for more effective solutions and practices.*
- *Return to classroom, school and district with an action plan and commitment to implement.*

**NCTM Regional Conferences:**

**Phoenix: Oct. 26-28, 2016**

**Philadelphia: Oct. 31-Nov. 2, 2106**

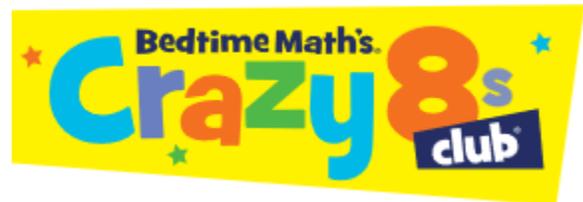
*Network with peers in face-to-face settings, and explore new ideas and resources that can support your students for greater college and career readiness and success.*

# Bedtime Math's Crazy 8s Club

By  
Kate White

Bedtime Math website

<http://bedtimemath.org/> and app



If you are a math teacher, I'm sure you have heard one of these phrases before... "Math isn't my thing"... "I can't do math"... "Why do I need to know that?" ... or "My mom and dad aren't math people, I'm not either." AGH, right?

It seems that some students have made up their mind and stopped trying before you can even begin the lesson or activity. Last year at the school I teach at we decided to start a math program afterschool so that these misconceptions could go away for good. We ordered "Bedtime Math Crazy 8's Club." It came with tons of fun interactive activities that involve creating and exploring to formulate new ideas and diving deeper.

No need to stress about getting the supplies or creating lesson plans...it's all done for you!

## Here are the details:

The program is 32 weeks long and organized into four 8-week kits, just meeting once a week.

Offered for two different age groups K-2nd and 3rd-5th grade.

A minimum of 12 students and a maximum of 16 students can be part of the club.

Engaging and fun for all math abilities!!!

A few of the lessons are: Toilet Paper Olympics, Glow-In-the-Dark Geometry, Zip-Line Zoo, and cracking secret spy codes.

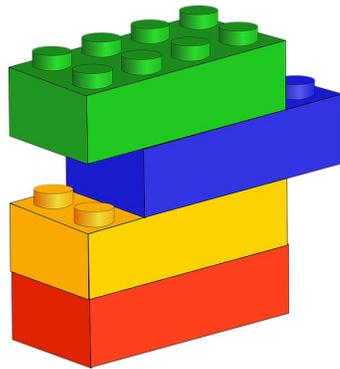
The BEST part...IT'S FREE!!!!



# BUILD Math

By  
Terra Misener

The need for differentiated instruction in the content area of mathematics has become a necessity given the recent changes that have come with the Common Core State Standards. The number of students in my classroom who find Mathematics challenging continues to grow with each passing school year, which is true for many teachers of Mathematics. This means that to properly reach and teach each child at his instructional level, we must devote more time to guided math.



In the recent past, while I knew the value and understood the necessity of the differentiated instruction provided through guided math, I struggled to effectively incorporate it into my daily math instruction. This was not due to a lack of lessons or materials to use in guided math lessons; instead, it was because I had not found or developed an effective system in which my kindergarten students could engage INDEPENDENTLY in mathematics activities while I was teaching a small group. Then, I found B.U.I.L.D. Math!

B.U.I.L.D. Math is not a curriculum. It is a management system for math stations, in which students can work independently while the teacher works with a small group during guided math. So, what is B.U.I.L.D.? Here is its framework.

**B – Buddy Games:** Students engage in games that require a partner and that facilitate the development of numerous math skills.

**U – Using Manipulatives:** Students engage in activities that allow them to explore a variety of mathematics manipulatives, while also practicing math skills.

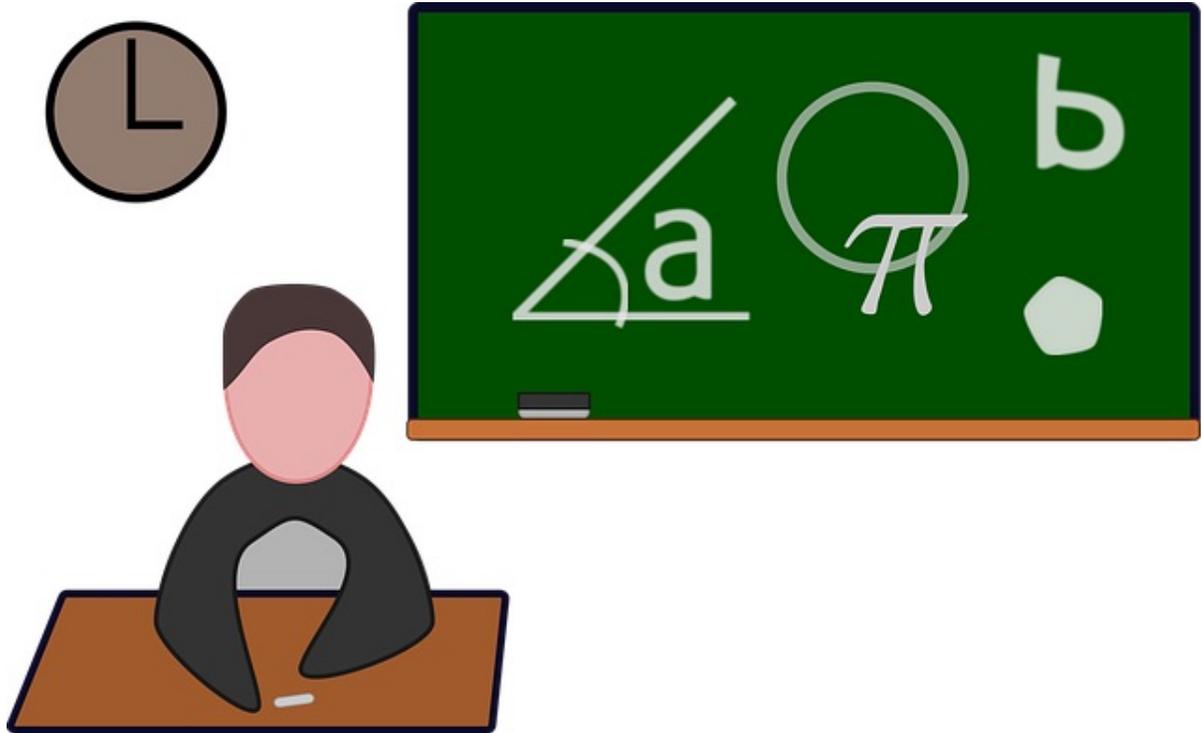
**I – Independent Reading:** Students can engage in reading books that incorporate math, or they can engage in creating books that incorporate math.

**L – Learning about Numbers:** Students engage in activities that allow them to develop and increase their learning about numbers and number sense.

**D – Doing Math:** Students engage in activities that help them review or practice newly acquired math skills.

*Continued on page 5*

# BUILD Math (continued)



## **BUILD FOR: Better management. More engagement.**

The important idea to remember about B.U.I.L.D. is that it is a way to facilitate and manage math stations, so it is very flexible, allowing teachers to make it work for them in their classrooms. It has helped transform my mathematics instruction, especially as it has allowed me more freedom to engage in guided math instruction, and has become one of my students' favorite parts of their school day.

No matter what age or in what grade, using this management system for mathematics practice can aid in teachers' development of effective mathematics instruction in our classrooms. ■



# The Power of Struggle

By  
Jamie Wampler

Fredrick Douglass said, "If there is no struggle, there is no progress." This quote has been adapted to, "There is power in the struggle." What if Fredrick gave up when the struggle for freedom became too challenging? He may have never become the social reformer that helped influence our country's leader to abolish slavery. He had a growth mindset. He was born a slave, then through much effort he grew to become a free man who served as a leader in the national abolitionist movement.

The same idea of growth can apply to the students in my classroom. A growth mindset is the belief you can change your abilities through effort. It is important because it allows students to fail, learn, and grow as a learner. Many students stop when something becomes difficult. The idea of perseverance is imperative to a growth mindset. As a teacher, I want to establish a safe environment where mistakes are accepted and evaluated to see if the class can reach a better understanding of the math concept.

One simple thing all teachers can do is change what you value in your classroom. Instead of valuing effort, the correct answer is more commonly desired. To establish a growth mindset, value effort and thinking. I teach my kids the quote from *Finding Nemo*, "Just keep swimming!" I talk about what would have happened if Nemo gave up. When they are struggling, I will remind them of Dorey and start singing, "just keep swimming!" I often end it with "There is power in the struggle."

**"JUST KEEP  
SWIMMING!"**

*Finding Nemo*



# Growth Mindset in the Classroom

By  
Brian Winstead

The word math brings many different feelings and emotions to different students. Some students come in to the math classroom with confidence and willingness to accept the challenge. To other students, just the word math strikes fear in them. They come into the classroom already believing they cannot do math before they even try and do not want to try. It is a challenge and a mindset that, we as teachers, must break through and change.

**BELIEVE → DO**

I have seen students, like the latter description, every year that I have taught. They come into the classroom thinking I cannot do math, so I am not going to try. I have heard the excuse, "my parents can't do this so I can't either", or this is just too hard and I can't do this many times before. As a teacher, I did not like hearing this but really didn't know how to change their mind.

Then on the first Tuesday on MathElites, Dr. Price presented on *Growth Mindset vs. Fixed Mindset*. During the presentation, she discussed exactly what I described above and how to begin the process of changing from that way of thinking.

Growth mindset is believing that your basic abilities can be developed by dedication and hard work. This means that if you have a growth mindset you can learn and develop your math skills by applying yourself and working hard. During her presentation, Dr. Price discussed the difference in growth mindset and fixed mindset. A few characteristics of a fixed mindset are avoids challenges, gives up easy, and avoids useful criticism. Many students and teachers have this mindset when it comes to mathematics. Growth mindset characteristics are embraces challenges, persists in obstacles, and sees effort as necessary. This really made me think about my students and how do I get them from fixed to growth mindset?

*Continued on page 8*

# Growth Mindset in the Classroom

(continued)

As Dr. Price continued the discussion, we discussed that it needed to start with the teacher first. I needed to change my mindset before I could change my students. I needed to create a classroom culture that focuses on the growth mindset. One way to promote this mindset is to focus on how I grade. To promote this mindset in the classroom, I need to not worry as much about the final product or the end but focus on the process. Grade the students on time spent on the assignment rather than mastery. This will show the student that effort and hard work is rewarded and it is not all about getting the final answers correct. It will also show students that it is all right to struggle and that working hard and struggle will lead to success.

Learning how to correctly praise students is also crucial in promoting a growth mindset in the classroom. Dr. Price gave us a quote that I found very powerful.



**"It is crucial that no student be able to coast to success time after time; this experience can create the fixed-mindset belief that you are smart only if you can succeed without effort."**

**(Dweck, 2010)**

Students need to be challenged with meaningful tasks to continue the development of their learning. Many students fall into the assumption that they are smart and do not have to try. This develops a fixed mindset in these students, and when they are challenged they give up or believe that they are not smart any longer so they do not work hard to learn. Once the teachers have a growth mindset, the students will begin to have that same mindset and believe they can excel in math.

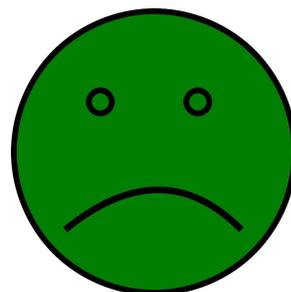
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# Growth Mindset in the Classroom

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One of the most common statements I hear from students that may struggle is "I Can't." Many students think because they don't understand the first time they cannot do it at all. Dr. Price had a great statement to combat the "I Can't" statement and it is "I Can't...Yet." I really loved this statement and plan on using it this year. It tells students that it is okay not to understand how to do a problem after the first try, second try, etc. If you try hard and keep the effort level high, you will be able to do it eventually. It also shows the students that it is okay to struggle at some things and to not give up.

Having a growth mindset is not an overnight process that will change immediately, it is a process that takes time. The change starts with the teacher and students will follow. It promotes effort, hard work, perseverance, and success in math and life. ■



**"I CAN'T"**



**"I CAN'T...YET."**



# Growth Mindset: Our Ticket out the Door

By  
Carly Phillips

At the end of our lessons each day, what do we want our students to take with them as they move on to the rest of their day? How do we hope they feel as they turn in their "ticket out the door?" Have you ever had a student ask, "What's an exit ticket? Why do we have to do them?" As educators, we spend several hours, days, weeks, and months preparing to make sure we deliver effective lessons to our students, but sometimes they may not understand why we are completing a specific task in our lesson. Do we, the educators, even understand why? Do we really need to have our students complete an exit ticket every day? Are they beneficial in helping our students persevere?

While attending ETSU as an undergrad and preparing to become a teacher is when I first heard of an exit ticket. As I began my field experience, I saw many different types of exit tickets: some with really eye-catching displays, some that were projected on the Promethean board to be written on recycled paper, and some that appeared to look like a five question quiz. Why not just call it a quiz? Are these exit tickets graded? What do you do with them after you check? I learned over a

course of time that there really was no one-right-answer to the questions I had about exit tickets. It was all about what worked best for each individual classroom.

Fast forward to when I earned my first teaching position in my own classroom after being an academic tutor for a year followed by a year of six different interims in five different grades. Using the wonderful experience I had gained, I began to think about how I wanted to utilize exit tickets in my lessons. I decided I would try a variety to see what works for my students and me. Just to name a couple, I tried Post-it notes on anchor charts that had questions and the "3-2-1 Method" where students stated three things they learned from the lesson, two questions they still had, and one idea that stuck with them.

*Continued on page 11*

**ADMIT ONE:  
new mindset**

# Growth Mindset: Our Ticket out the Door

(continued)

The following year, I decided it was important to me to have a sense of not only identifying the knowledge the students have gained, but also learning how they *feel* about this knowledge. I decided to display four folders in my classroom that represented four different categories the students may be feeling after a lesson: "Got it", "Almost", "Not Sure", and "I don't understand". I found myself always checking the tickets inside the "I don't understand" category first. I tried to meet with these students who dropped their ticket in this category to either reteach the content or discuss how they felt about the content.

Now that I have given you an understanding of my past experience with exit tickets, I now want to explain how we can use exit tickets to help us and our students achieve a *growth mindset*. While attending MathElites this summer, our professors taught us the importance of having a growth mindset. We learned that a growth mindset takes time to develop. Our other option is to have a *fixed mindset*.

## MODELING A GROWTH MINDSET

As educators, some of us may already fall closer toward a growth mindset than a fixed mindset, while the rest of us have had a fixed mindset for quite some time. It is not too late to decide we want to move from a fixed mindset to a growth mindset. In fact, we should start trying to achieve this new mindset today! Once we make our decision, we can model these actions for our students so they can also learn and persevere with a growth mindset.

How can we incorporate a growth mindset in our exit tickets? We also learned from our MathElites professors that by taking one of our least favorite phrases that students use ("I can't") and having them change it to "I can't...yet" could make a sufficient adjustment in attitudes. Since "I can't" falls into the fixed mindset category and "I can't...yet" falls under a growth mindset, which would we rather have our students use?

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# Growth Mindset: Our Ticket out the Door

(continued)

Since it is important for me to not only know *what* my students have learned from my lessons but also *how* they feel about what they have learned, I am going to make some modifications in my exit tickets this school year. Even though I always tried to follow up with students who chose the “I don’t understand” category, how did they really feel when they left my class and moved on with their day? Did they feel motivated to persevere knowing tomorrow can be better, or did they feel unmotivated to try again the next day because they felt defeated. I believe that if I change this category from “I don’t understand” to “I can’t...yet”, then students will know that it is okay if they do not always understand the first time, but if they persevere, they will eventually feel success. Exit tickets can be a vital tool because usually it is the last component of our lessons and what we leave our students with as they continue about their day. Not only do I encourage you to continue using effective exit tickets, but think about them being a valuable tool for promoting growth mindset in your classroom. ■

**Motivation**

**Knowledge**

**Achievement**



# Real world, real learning

By  
Kristina Dempsey

It is inevitable in math class that a student will cry out in the middle of a challenging task "BUT WHYYYYYYYYYYYY do we have to do this? When am I ever going to use this in real life?" Well, besides the fact that math class is real life, we need to give our students examples of how we use the concepts we teach outside of the classroom. For the most part, I find that it is fairly easy to find these examples for middle school standards. I know that not every example that I provide will apply to every students' interests or experiences, but they are honest and sincere examples of how I have found the standards and concepts to be put to work in my everyday life and they increase the genuine enthusiasm that I bring for math in my teaching.

Just this week I have challenged my own kids to figure out whether we should buy the round cookie cake or the square one. They had to determine which one was the better value, not just on the amount of individual servings we needed, because we all know that either cake would get eaten no matter how large it was. Not only did this challenge incorporate a discussion on the area of rectangles and circles, it also included them using that information to calculate the unit price of each square inch of cake so that we could compare the costs. In this example alone, we tackled some ratios and proportion standards along with some geometry standards in one REALLY important problem. By the way, we determined that in our case, it was better to go with the larger, rectangular cake!

*Continued on page 14*



# Real world, real Learning

(continued)

How about those raffle tickets that my nephew was trying to sell me for his upcoming baseball team trip? Of course Aunt Krissy made the kids calculate the chances of winning the top prize (two theme park tickets) before she would buy a raffle ticket. In order to persuade me to buy another, they had to then figure out the probability of winning one of the other fabulous prizes taking into consideration that there were now fewer tickets left to draw from and also one less prize. Each child was trying to be the first one to figure out the calculations before the others and while they had no idea that this was a seventh grade standard, these kids (who included a sixth, fifth, and third grader) rose to the challenge with some guided reasoning and were amazed at the odds. Not only that, it generated a conversation on the chances of winning the lottery and more importantly, winning that upcoming baseball tournament.



## **REAL WORLD PROBLEMS SPARK REAL INTEREST.**

These real-world problems sparked an interest and the kids were excited to work through the numbers and come up with solutions. It was just a matter of presenting to them the problems in a manner that was applicable to their own lives. These next few months offer us an excellent opportunity to throw in some real-world mathematics related to this year's presidential campaign - delegates, popular vote, the Electoral College, distance travelled and time, money, etc. The possibilities are really endless. We just have to get them thinking in a positive math mindset of how real and applicable that our classes can be to them each and every day! It gives kids the confidence to approach the problems they see in class when they have thought about the concepts as they apply to the world outside of class and makes them have a more positive outlook on mathematics class. ■



# Manipulatives in the Classroom

By  
Misty Joiner



Research shows that hands-on manipulatives used during classroom instruction will improve student achievement. I have always been a firm believer in applying hands-on strategies such as manipulatives, interactive notebooks and foldables in classroom instruction because they help the student gain a better understanding of the topic. During MathElites, I learned a new mathematical number strategy known as Orpda. Orpda is an invented number system based on the numerical value of five instead of ten. This technique is designed mainly for the educator to experience the struggles and difficulties of learning a mathematical concept. Learning the new number system was a challenge for me, but it demonstrated how students feel when learning a new math standard. The benefit of the Orpda math technique is that it shows the educator the frustrations that students experience in math class. This new strategy showed me more than ever the importance of providing hands-on manipulatives in my classroom instruction.

In the past, I introduced a mathematical concept with manipulatives and then quickly put them away once I thought the students learned the individual task. I was wrong. It would have been more of a benefit to leave out the hands-on mathematical materials because students learn at different rates. Some students may still need hands on materials to master the skill while other students are ready to move on to the next concept with no need of hands-on materials. This school year all classroom manipulatives will be easily accessible to students on an everyday basis. Manipulatives will help give the students a better understanding of such abstract math concepts. Hands-on materials need to be available for students to rely on when needed. Research shows that long-term use of hands-on manipulatives in classroom instruction helps students gain a deeper understanding of mathematical concepts and helps them solve real world math applications in everyday life.



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# UECTCM Leadership 2016-2017

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# Membership Application 2016-2017

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Complete application and return to Jerry Whitaker with a check for \$10 made payable to UETCTM. Mail completed application and check to:

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