

February/
March
2020



What's My Name?

I know, I know. You were looking at those portrait photos saying to yourself, "geez, I think those are all famous mathematicians." The question I have is, "can you name them all?" When you give up, or just want to know, the answers to who they are will be at the end of this newsletter. This newsletter, in addition to that great "what's my name?" game, also has some pieces on equity in the classroom, student engagement, changes to grading practices, and quantile frameworks. I hope you find this information both educational and entertaining.

Student Engagement Through a Culturally Responsive Lens

Many teachers have seen that it is very difficult for students to learn anything when they are not engaged. The counter to that is also true; when engaged a student's leaning is unbounded. Well, it may not be limitless, but it definitely has a positive slope. I've always believed that in order for a student to acquire knowledge three things need to be in place: prior knowledge, relevance, and future application. One approach to foster engagement is to make the lesson "relevant" to the student. Unfortunately, what is relevant in the world of the teacher, may not be relevant to the world of the student. In the Edutopia article [Bringing a Culturally Responsive Lens to Math Class](#) a middle school math project gives students a chance to apply the skills they learn in class to an issue they care about. What better way to garner student engagement than to find out what is important to them? Our classrooms represent many different cultures and we need to have conversations that involve the students to discern what is truly relevant to their world. The article provides a 4-step process for connecting lessons to student's lives. The following is a brief overview of those steps:

1. Select a topic or issue relevant to the racial and cultural composition of your students, and to the communities in which they live. The best way to select the topic is to ask your students what really matters to them. Once you've determined the topic, write it up as an open-ended focus question.

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The ways you can access this
newsletter:

- Request subscription by emailing [Ryan Parkman](#); your name will be added to a listserv;
- The AOE *Weekly Field Memo* when issues are published; and
- AOE Website: [The Mathematics Content page](#).

2. Gather background information. What quantitative data points can students study in order to draw their own conclusions about the topic.
3. Identify math skills and connect them to standards that your students will use to analyze the data points and construct mathematical arguments.
4. Determine the final work product your students will produce, consider the diverse academic needs of the learners in the class. Provide multiple access points that allow the students to best demonstrate mastery of math skills and their knowledge of the topic.

Making the lesson relevant to the student is just one way to increase the engagement levels in your class. What could you do in terms of the students' prior knowledge and potential future applications of the skills and concepts being taught to increase engagement?

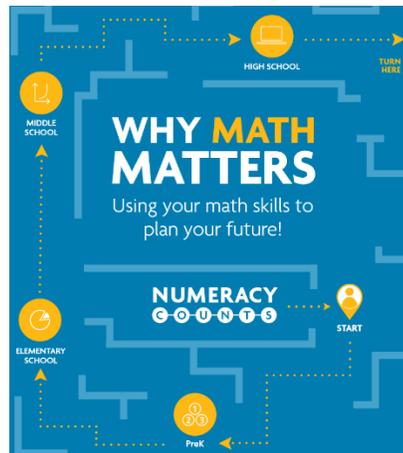
Ensuring Student Engagement

Just because a student is “doing” the activity, “paying” attention, or “reading” the passage, are they really engaged in the lesson? Following instructions is compliance, not engagement. Other factors need to be present to ensure engagement. While there is definitely no perfect recipe for engagement, [John Almarode](#), associate professor at James Madison University and co-director of the school's [Center for STEM Education and Outreach](#), said he looks for behavioral, emotional and cognitive engagement at play together. In the article, [How to Ensure Students Are Actively Engaged and Not Just Compliant](#) by Katrina Schwartz, Almarode describes what he looks for when he visits classrooms. He looks for eight different qualities that indicate students are engaged.

1. Does the activity, strategy, task, or idea allow for the student to personalize his or her response? Can they bring their life experiences into the activity and make it their own?
2. Are there clear expectations?
3. Is there a sense of audience above and beyond the teacher and the test? Does the activity have value to someone else?
4. Is there social interaction? Do students have an opportunity to talk about the learning and interact?
5. Is there a culture of emotional safety? Are mistakes valued because they are an opportunity to learn?
6. Do students have opportunities to choose within the activity?

7. Is it an authentic activity? This doesn't mean it always must connect directly to the student's world, but it should connect to reality.
8. Is the task new and novel? If kids are bored, it's hard to see engagement.

It's undoubtedly hard to get all eight measures of engagement into every classroom activity, but research by [John Antonetti](#) shows that at least three can make a big difference for how much kids learn. Almarode states that, "In classrooms where you had at least three characteristics in each assignment students demonstrated sustained cognitive engagement between 84 and 86 percent of the time."



Careers in Math in a Changing World

When am I ever going to use this? That must be a question that every math teacher has heard many times. Even when we tell our students that they will be utilizing the analytical reasoning and problem-solving skills they acquire in all aspects of their lives; they just don't seem to believe. Have you ever wanted a nice visual that showed various careers in mathematics and listed the math skills used? What about having an activity that helps show various careers that have a strong math requirement? Well, I've found just the thing for you. Houghton-Mifflin has created an eBook called [Why Math Matters](#) (You will need to create a free account with [eSchool News](#) in order to view this resource). This eBook has two parts, the first describes various careers involving mathematics, while second provides an activity where your students will be playing the role of a Community Educator designing a career program guide for students like themselves. The activity addresses using proportional relationships to solve multistep percent problems and presenting numerical data in a graph and summarizing the data using patterns, deviations, and measures of center. Careers featured in the eBook: *Data Miner, Software Designer, Chef, Animator, Physician, and Interior Designer.*

Events, Announcements, and Resources

SBAC Item Development Work

It is that time of year when the Smarter Balanced Assessment Consortium recruits for item development work. This recruitment only happens once a year, and as some of you may be aware, has gotten off to a late start. In the past, recruitment was at the end of December.

Smarter Balanced is recruiting qualified educators to support a range of assessment activities in 2020. The following [link](#) provides general information for educator involvement in these opportunities.



Smarter Balanced and their vendors will look at all applicants across the member states and make selections based on a variety of experiences and certifications. They will select a certain number from each state, but it is not guaranteed work. All interested educators will need to complete the survey annually. This work is managed apart from any previous Smarter Balanced work, so although you may have participated in prior SNE events, your name will not be automatically included. You will need to complete the [2020 Application for Educator Engagement](#).

If this is your *first time* applying for item development work, you will need to complete a hard copy application and submit it to Linda Moreno, the Assessment Coordinator for Special Populations, via email at linda.moreno@vermont.gov for the AOE's files. Also contact Linda if you have any questions regarding this process by using her email or contacting by phone at (802) 828-0505.

Workshop for Primary and Elementary Math Facts

A new workshop for primary and elementary teachers, special educators, and support staff is being offered **March 16** in **Rutland** and **March 17** in **Richmond**. While we all want our students to have automaticity of the basic addition, subtraction, multiplication and division facts, it's difficult to know how to reach that goal. This workshop is designed to make automaticity engaging, meaningful, and fun! Click [here](#) for registration information.

Did You Know My Name?

If you said that the gentleman on the left was none other than [Nikolai Lobachevsky](#), then you were correct! Lobachevsky created a geometry on the following assumption: In the plane formed by a line and a point not on the line it is possible to draw infinitely many lines through the point that are parallel to the original line.

Who is that in the middle, why it is [Emmy Noether](#)! In a time when women were not respected, noticed in the field of mathematics, she became known as the most creative abstract algebraist of modern times. You should check out her work with non-commutative multiplication!

There on the right is [Benjamin Banneker](#), mathematician, astronomer and civil rights activist! Not only could he accurately predict eclipses he also corresponded with Thomas Jefferson on the issue of slavery and earned the support of various abolitionist movements.

Congratulations if you recognized all three mathematicians. Share this information with your students, they might just find some of these insights into the lives of mathematicians interesting, engaging or stimulating.

Directions for Submissions

If you would like to submit an article, announcement, event, or resource for a future newsletter, please email information to ryan.parkman@vermont.gov. This newsletter will be published four times throughout the school year. Time sensitive materials will be prioritized, be sure to check if the dates of publication will delay the sharing of information.

To subscribe or unsubscribe to the Mathematics in Vermont e-bulletin, write to ryan.parkman@vermont.gov or call (802) 828-6468.

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