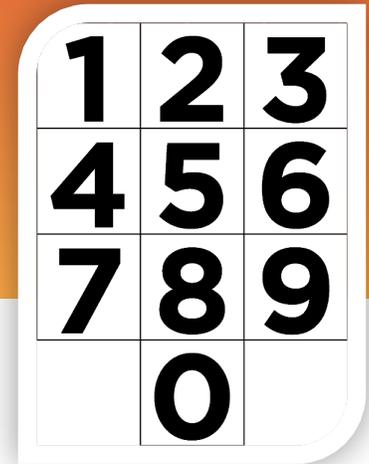


# Increasing Student Engagement

During Eureka Math Lessons  
By Angelique Brown



## Bringing It All Together

Three current initiatives in OCSU are Eureka Math, student engagement, and formative assessment. But how do all of these initiatives fit together?

Sometimes when we are given a program such as Eureka Math, we follow the scripted lessons exactly as they are written. But how do we ensure that students are actively participating and are learning the material that is presented? We can rely on lesson exit tickets and module assessments, but isn't it too at that point?

In their book *Total Participation Techniques: Making Every Student an Active Learner*, Persida and William Himmele share different classroom activities that can ensure participation from all students throughout a lesson. Their techniques, or TPTs, not only increase participation and activate higher-order thinking, they can also provide valuable information about what students know and don't know throughout a lesson.

I've matched up some of the TPTs Himmele and Himmele share in chapters 4 and 5 with the different components of Eureka Math lessons. Note that these are just a few suggestions that teachers can use.

## Fluency Practice

Hold-ups such as mini whiteboards and number cards can be used to ensure that all students actively participate during fluency practice. For instance, if the Eureka Math lesson asks students to, "write 1 over 2" and then "say the fraction," how can a teacher ensure that all students do this? Teachers can have students write  $\frac{1}{2}$  on whiteboards. Then have them turn and tell a partner what the fraction is. If students are asked to count the Say Ten Way, a teacher can give them number cards and another card with the word "ten" on it. He/she can have students hold up the cards as they count along.

## Application Problems

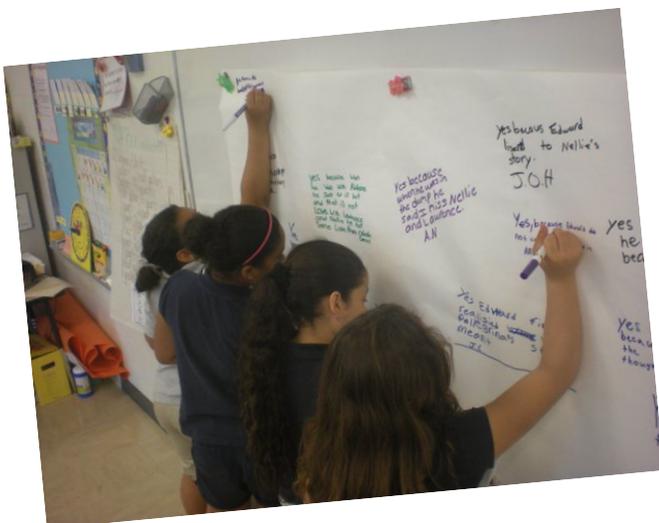
I've seen many teachers use the application problem differently. Some teachers solve these problems as a whole class, others have students solve the problem in their math journals or on whiteboards and then share with a partner, and others might call a student up to the board to demonstrate how to solve the problem.

I believe though, that every student needs to make an attempt at solving the problem so think/pair/share activities are great for Application Problems. All students can spend a little time trying to solve the problem either in a math journal or on a whiteboard. Then they can use a Processing Card

so that the teacher and other students know when they have had enough time or could use some help. Once students have made an attempt to solve the problem, they can be given a few minutes to work with a partner or in a small group to explain or justify their thinking. The teacher can use this time to listen to student conversations and to give feedback. He/she can quickly determine who gets it, and who doesn't. Finally, the teacher can pick a student or two to share how he/she solved the problem. This also provides feedback to the students so that they can adjust their thinking if they have a misconception.

## Concept Development

There are many times during the concept development when students are asked to respond to a question posed by the teacher. Instead of calling on one student to answer, or having all students shout out an answer in unison, teachers can use thumbs up/thumbs down, pair/shares and think/pair/shares to ensure that all students are participating. Students can also write certain responses on mini whiteboards and keep their answers hidden until all of them have been given enough time to respond. Then the teacher can ask students to hold up their boards. This is a quick formative assessment. To take this further, the teacher can pair students up and ask them to justify their answers, especially when more than a couple of students have displayed an incorrect answer.



## Student Debrief

The student debrief component of the lesson is a time for students to share and justify their thinking, and to receive feedback. It's meant to be a time for reflection. Why not have students do a Quick-Write or Quick-Draw about the concepts learned, or rank the problems from most difficult to least difficult and discuss why some are harder than others? Students could also participate in a Chalkboard Splash in order to relate the new concept to previously learned material, or to the real world. All of these activities will ensure that every student is actively participating and will serve as a formative assessment to the teacher, so that he/she has one last opportunity to intervene before the exit ticket is given.



## Total Participation Techniques

Student engagement, formative assessment, and Eureka Math can all be brought together using Himmele and Himmele's Total Participation Techniques. Using these strategies will ensure that every student is actively learning throughout the Eureka Math lesson and will give valuable information to the teacher along the way.