

Bringing Number Talks to the Online Classroom

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Online Learning

Elementary school teachers use number talks to guide students to engage deeply with concepts, and they can work online, with a little creativity.

By Zachary Maher

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Before the coronavirus forced schools to close, if you walked into any elementary classroom during math instruction, you would notice students interacting with concepts through by using math manipulatives, playing games, engaging in discussion while problem-solving, and evaluating their own work as well as the work of their peers.

The sudden and swift transition to remote learning due to the Covid-19 pandemic required educators to adapt the idea of school to work in a digital environment. Among the many challenges of remote learning is providing elementary mathematics instruction that is engaging, rigorous, and equitable.

While there is no universal solution, one strategy is to use virtual number talks as a way to provide students an opportunity to critically think about math concepts. Based on the work of Sherry Parish, a number talk is a classroom conversation about mental math problems. In a number talk, teachers pose a problem to students and use lean prompting and questioning to elicit student thinking and dialogue. As students present their solutions, the class as a whole evaluates their work and considers the variety of methods one can use to generate a solution.

I'm an instructional coach working with classroom teachers in grades K–5, and when we first considered adapting number talks to be done virtually, we thought of the barriers that could impede student success and ways to address them.

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Establish Norms

Just like in your classroom, students need to be explicitly taught how a productive number talk works. Working with our students, we developed and explained our norms, modeled them, and practiced. The three norms that worked for us are as follows. First, we are “all in,” meaning that we are all in a good spot to focus on math and that we will remain focused on our number talk.

Our second norm, “one speaker,” means there is only one speaker at a time and we take turns so that everyone has an equal chance to participate. Finally, our last norm, “step in, step out, and hold your thought,” means that when it is a student’s turn to talk, they make sure to say what they need to about the problem and then pass to the next speaker. If a student has a new thought or question that they want to share, they wait until it’s their turn.

Think Beyond Mental Math Problems

While a number talk is traditionally done using mental math problems, physical classroom environments generally have scaffolds readily available, like number lines and anchor charts—tools that can assist students with their thinking. In order to successfully adapt number talks to a remote environment, encourage students to model their thinking by using pencil and paper or by creating their own at-home math tool kits of everyday items that can be used as math manipulatives, such as counters made of dried beans or pasta.

Furthermore, present your problems digitally with a presentation slide using easy-to-read fonts and, if possible, provide visual anchors like pictures to help support all students, including English learners, with comprehension.

Facilitate Discussion and Elicit Thinking

As educators, we often default to wanting to help our students by doing the heavy lifting. In challenging circumstances like remote learning, we may find ourselves

doing this even more. However, during a digital number talk, we need to remember that our role as educators is to facilitate and guide discussion. Students may present an incorrect solution, and that is OK. The goal is to get students to critically evaluate their own work as well as their peers'. You can use lean prompts, like "Tell me more," "Is there anything you might change?" or "Can you explain it in a different way?"

At the conclusion of the digital number talk, have the class reflect on the work and articulate the different strategies you can use to solve a problem. You may find yourself at the end modeling a different strategy that students did not use or highlighting the work of students.

Practice With Digital Tools

You will want to find a teleconferencing application that meets your needs and your district's technology requirements. Once you've found that platform, practice and get to know the features. One of our teachers found it useful to practice number talks with her colleagues during meeting times. Just as in the classroom, technological issues may happen; however, practicing it made our digital number talks much more seamless for all participants.

We found it very helpful to learn how to utilize the "mute all" feature to eliminate background noise that can make it hard to hear students, as well as the hand-raising and chat box features. Students were made aware that they would be muted and when called on would need to unmute themselves. For our much younger students in kindergarten and first grade, our teachers found themselves manually doing this for students.

You may also want to utilize the digital whiteboard features to record student responses as the number talk progresses so that students have a visual reminder of the discussion.