

Artifact #3 - Summary Discussions

The curriculum we use at our school is the CMP (Connected Mathematics Project) curriculum out of Michigan State. The curriculum is inquiry based and comes in three phases: Launch, Explore, and Summary. Although the Launch and the Explore had to be adjusted to facilitate this learning model in an online environment my greatest struggle was with the Summary. I knew going into the school year that the summary phase of the lesson design was going to be the most challenging but also the most important to facilitate with students. In past school years, when we were in person, a typical summary discussion would be focused around student work and involve students participating in discussion and sense-making around the big mathematical ideas we were thinking about. Starting out in September I believed that I could build up these same summary discussions in my virtual classroom by introducing sentence stems and building out student stamina with holding a conversation over zoom. During the spring and summer of 2020 I had experienced many online meetings and adults were perfectly capable of having a conversation over zoom so students should be able to as well.

September 2020 came and went and between learning to use technology, being shy about sharing online, and the unpredictability of individual students' internet connections the quest for a summary discussion became frustrating and unproductive for both myself and my students. The need for facilitating a summary discussion in a different way became quite clear and below are a few examples of different ways we have used technology to share student work and engage students in a summary discussion!

One tool that has been helpful in allowing students to see work, write out their own ideas, and respond to the ideas of others is through Jamboard. When utilizing a Jamboard I find it important to provide students with specific prompts to respond to, sentence stems to help the conversation, and clear directions on which color to use for their own ideas and which color sticky note to use when responding to others. This work has helped our class to be interactive in our "conversations". This [LINK](#) is a Jamboard that served as a summary discussion of different student work during one of our CMP3 problems in the classroom. I utilize Jamboards whenever I want students to see the responses of their peers and if I want them to respond to each other in their work. Jamboards are also useful when facilitating the [notice/wonder](#) or the [see/think/wonder](#) protocol.

Another struggle during a summary discussion is to see who is actively engaged in the conversation. A strategy that has helped me with this work is utilizing desmos. I will often pull student work from the first day and then build an interactive desmos activity that allows me to see the responses of all students at the same time. I will purposefully build in the checks for understanding of content (to see who understands what we are doing) but also “sign of life” checks because it is difficult to tell in an online setting if students are engaged in the work but struggling or if they are disengaged from the work. Utilizing desmos allows me to differentiate between the two as I look at student work. This [LINK](#) is to a teacher page of different desmos slides I have used to facilitate a summary discussion with students.

Jamboard and desmos both have clear advantages and disadvantages when it comes to the facilitation of summary discussions. I try to choose the tool that makes the most sense based on the need of the particular lesson, striking a balance between individual accountability in desmos and collaborative conversations in jamboard.