

Foundations of Fractions: Grades 3rd-6th

with Graham Fletcher

This course provides an opportunity to learn the fundamental mathematical progressions underlying students' understandings of fractions. Topics will include meaning of a fraction, equivalence & comparison, addition & subtraction, multiplication & division, and rate. Emphasis will be given to developing the ideas through launching the concept through 3-Act Tasks, using student work to connect and extend thinkings, and how to build procedural fluency for fractions once the conceptual understanding has been developed.

This course will be centered on the research of:

- Empson, S. B., & Levi, L. (2011). Extending children's mathematics: Fractions and decimals. Heinemann.
- University of Arizona. Progression on number and operations - fractions. Retrieved September 4, 2017 from http://commoncoretools.me/wp-content/uploads/2011/08/ccss_progression_nf_35_2013_09_19.pdf
- Van de Walle, J. A., Lovin, L. H., Karp, K. S., & Bay-Williams, J. M. (2014). Teaching student-centered mathematics: Developmentally appropriate instruction for grades 3-5 (Volume I) (2nd ed.). Pearson.

Goals/Objectives

Each module will be broken down into 3 main parts will:

- **Launch the Concept:** In this part participants will work through a 3-act task. They will anticipate and analyze student work samples through the progression of learning. The analyses of student works will set up the learning that is about to take place in the rest of the module.
- **Connecting & Extending our Thinking:** Participants will engage in meaningful tasks supported by an instructional video that models how I would teach the lesson as they engage as students. Through modeling best practice and connecting it to best practice, teachers will understand how to harness these tasks and activities to move students through the progression of learning as it relates to fractions.
- **Building Fluency:** Once a conceptual understanding is developed it is critical that students build fluency. It is here where participants will engage in meaningful practice that supports the understanding that was constructed earlier in the lesson.

Some modules will have:

- **Beyond the Learning:** This will provide participants with ideas for assessment. Although we will be formatively assessing through each module, there will be some times when we explicitly want to look at assessment.

Grading/Course Completion

The online program tracks your progress. In order to receive credit and/or a course completion certificate, you need to complete the course materials within 10 weeks. The course is 15 hours of instructional time. You will earn a Certificate of Completion, but you also have the option to sign up for 1 professional development credit through an accredited college. If you choose that option, you will fill out additional forms and pay \$60 directly to the college.

Different levels of registration

3 Month Access

3 Month Access is best for teachers and math coaches who want to dive into the content right away and start implementing.

In this level, you have the option to be assigned a Community Partner. This will be a person who is also enrolled in the course AND has the same role as you so that you can have someone to talk & collaborate with who is going through the same things as you....it helps to know you aren't alone in the struggles you are having with your kiddos.

You also get access to the private Build Math Minds Community (not the free Facebook one) which houses all the webinars I have done with amazing math educators (like Graham Fletcher, Cathy Fosnot, Dr. Nicki Newton), access to all the Virtual Math Summit sessions, access to the 5 Day Fact Fluency Trainings, and so much more.

In this level you are enrolled in the course for 3 months. The course content is only 6 weeks, so you will have additional time to complete any lessons you didn't do during the 6 weeks.

12 Month Access

12 Month Access is best for teachers and math coaches who plan to use the information in the videos throughout the year and may also use the videos to provide training for their staff/colleagues.

You get all the same stuff as the 3 Month Access, just longer time to access the content. If you want the ability to go back through the content throughout the year, then this level is for you.