

The Flexibility Formula: Grades 3rd-5th

by Christina Tondevold

The Flexibility Formula 3rd-5th provides an opportunity to learn the fundamental mathematical progressions underlying students' understandings of numbers to build their flexibility when operating with numbers (multiplication, fractions, and multi-digit addition & subtraction). Topics will include child cognitive development, early numeracy, and number relationships with a focus on how those concepts extend into the upper elementary grades. Topics will include child cognitive development, early numeracy and number relationships, assessing students' understanding, and providing mathematical experiences that build students' flexibility and fluency with math in 3rd-5th grade.

Based upon the research findings in:

Van de Walle, J. A. (2013). *Teaching student-centered mathematics: Grades PreK-2*. Boston, MA: Pearson Education Inc.

Van de Walle, J. A. (2013). *Teaching student-centered mathematics: Grades 3-5*. Boston, MA: Pearson Education Inc.

Carpenter, T. P., Fennema, E., Franke, M. L., & Levi, L., Empson, S. (1999). *Children's Mathematics: Cognitively Guided Instruction*. Portsmouth, NH: Heinemann.

Clements, D. & Sarama, J. (2009). *Learning and Teaching Early Math: The Learning Trajectories Approach*. New York: Routledge.

Baroody, A. J., Dowker, A., (2003). *The development of arithmetic concepts and skills: Constructing adaptive expertise*. Mahwah, NJ: Lawrence Erlbaum Associates.

Lamon, S. (2012). *Teaching Fractions and Ratios for Understanding: Essential Content Knowledge and Instructional Strategies for Teachers*. New York: Routledge.

Goals/Objectives

The following goals and objectives guide this course. Specifically, participants will have opportunities to:

- Become knowledgeable about instructional practices emphasizing that build connections around number
- Learn the content, methods, and materials necessary to build students' flexibility with numbers
- Become familiar with assessing through observation and using children's thinking to guide instruction
- Understand a framework for children's development of number sense
- Become more confident in one's ability to *teach* mathematics

Specifically, the course will address the following concepts:

4 Early Numeracy Concepts (Subitizing, Verbal Counting, Object Counting, and Cardinality) and the 4 Number Relationships (Spatial Relationships, One/Two More & Less, Benchmarks, and Part-Part-Whole)

All eight ideas will be investigated in-depth as we build understanding of the concepts, learn how to observe students to see what concepts they understand and which ones they are still building. Seeing how the number sense concepts connect together and connect with other math concepts will help you determine the experiences you provide students to help them build their flexibility. We will discuss the types of experiences you should provide students and you will get lots that you can use right away with your students.

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.

You also get access to the private Build Math Minds PD site 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 5 weeks, so you will have additional time to complete any lessons you didn't do during the 5 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.

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.