

## Scope and Sequence: Math Grades K-2

### Lower School

#### SINGAPORE MATH

[Click here to see the Math in Focus scope and sequence for grades 1<sup>st</sup>-5<sup>th</sup>.](#)

- Fewer topics covered each year
- More depth given to each topic, greater emphasis on mastery
- All students explore the same overarching concept, but at their own level (reteach, on-level, and enrichment)
- Accelerated program, typically one year ahead
- Higher-level thinking is emphasized. Math problems are multi-step, multi-concept, and multi-strand.

#### SUPPLEMENTAL MATH CURRICULA

##### Kindergarten Montessori Math

Mrs. Monica Gries, our kindergarten teacher, holds a Master's degree in Montessori Education. Her kindergarten class enjoys exploring mathematical concepts using hands-on concrete materials such as the number rods, sandpaper numerals, spindle box, cards and counters, short beads stair, ten and teens board, Golden beads (decimal system), one hundred board, stamp game, geometric solids (3D shapes & mystery box).

##### 1<sup>st</sup> Grade Math Journaling

First graders tackle each math concept beginning at the concrete (hands-on) stage, moving to the pictorial stage, and ending at

the abstract stage. During the pictorial stage, first graders apply their knowledge of key mathematical concepts in their own math journals. Using our hands-on activities as the foundation, students begin to convert problems into written form with drawings and number sentences. They write their own word problems, collect and analyze data, solve logic problems, and respond to teacher prompts. The journals provide the teacher a window into students' understandings and misconceptions. This then leads to further targeted, individualized instruction.

**1<sup>st</sup>-2nd Grade: Xtramath.org**

Online enrichment for automaticity of math facts is currently used in first through third grades. We use this online-based system to supplement addition, subtraction, multiplication, and division math facts. Students practice facts in rapid sequence in order to recall facts instead of taking time to calculate these facts. When students can move from calculations to recalling these facts, mental resources are freed up for higher-level operations. Students and parents are asked to be accountable for a minimum of 3 practice sessions at home weekly. Teachers are able to track and monitor progression through the basic facts via weekly e-mailed reports. Students may also be asked to login at school for additional practice.

**2<sup>nd</sup> Grade Hands-On Equations**

Hands-On Equations is a supplementary program that can be used with any math curriculum to provide students with a concrete foundation for algebra. It uses the

visual and kinesthetic instructional approach developed by Dr. Henry Borenson to demystify abstract algebraic concepts. This program is introduced to our second graders by placing game pieces (pawns and number cubes) on a balanced scale. Students perform legal moves to solve for the secret number, aka "x". Our students develop a strong understanding of basic algebraic concepts and love solving for x. Teachers and parents continuously give positive feedback, saying they wished they would have discovered algebra concepts by playing this "game" called Hands-on Equations.

**All Grades: Math through Cooperative Play**

Board game play is one of many tricks up our sleeves- children are learning mathematical concepts, teamwork, logic and critical thinking skills, and increasing their attention spans. Ask them, and they'll just tell you they're playing!

In first grade, the teacher converts popular board games into challenging math work by making small changes to the game play. Candyland becomes a fact fluency challenge. Guess Who? becomes a number sense partner game in which children ask various questions to determine the mystery number. Cootie gets an added challenge with doubles addition facts. Go Fish is used for combinations that add to 10 or 20.

In older grades, we use various math games such as 24, Carcassone, Forbidden Island, Rush Hour, Chocolate Fix, Tri-Dominoes, Math Sleuth and others. Students like strategizing games and engine building games and these all help create more robust

	math skills, pattern recognition, stamina and patience.
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