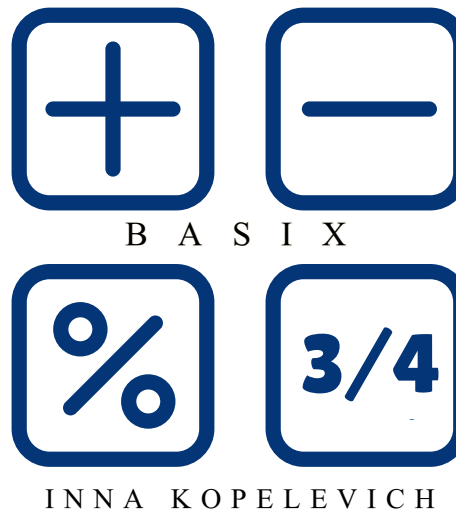


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By Inna Kopelevich



The 12 Essential Topics That Form the Core of Foundational Math
Grades: K- 8th grade (5-13 year olds)

Meet Inna Kopelevich



“With over 20 years of experience teaching middle school mathematics and Algebra, I’ve consistently found that the biggest barrier to Algebra success is weak foundational skills—skills that should be mastered in elementary school. Once students build true number sense and fluency with core concepts, everything changes. They don’t just catch up—they thrive in Algebra and beyond.”

What is BASIX?

BASIX is a structured, step-by-step curriculum that builds number sense, confidence, and fluency in the essential building blocks of arithmetic and pre-algebra.



BASIX focuses on **twelve fundamental topics** that form the core of true mathematical understanding. Each concept is presented with a clear, **no-nonsense approach** using proven, classroom-tested techniques developed over 20 years of teaching experience. These methods consistently help students close learning gaps and build lasting mastery.

Unlike a traditional textbook, **BASIX** is a flexible “how-to” manual — a practical guide to the essential math that students truly need. Each chapter is **self-contained**, allowing educators and learners to **target specific skills** without following a fixed sequence. Once students are confident in the **three foundational pillars** — **addition, subtraction, and multiplication** — **they can move confidently** to any topic/chapter and build from there.

Why BASIX Works - Many school math curricula emphasize applying foundational skills — but you can’t apply what you haven’t mastered. Without fluency in the basics, students struggle with higher-level tasks. BASIX focuses on building true number sense and automaticity *before* moving to application — ensuring lasting understanding and confidence. BASIX ’s structure and clarity allow it to reach **all students**, regardless of where they start.

The **BASIX** curriculum streamlines foundational math into twelve essential, teachable skills to be used effectively in:

- Public and private schools
- Homeschool setting
- One-on-one tutoring
- Intervention programs

Interested in a Demo? Feel free to reach³out to: ikopelevich@gmail.com

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The Foundations to Math Success: The 3 Pillars of Mathematics

First, students must have Automaticity, Fluidity, and Competency

in what I call the 3 “Pillars” of mathematics:

- 1) Addition & Subtraction within 10 (typically 4-6 years old)**
- 2) Addition & Subtraction within 20 (typically ages 5-7)**
- 3) Multiplication Fluency**
 - a) Multiplication facts up to 10’s (typically 6-8 yrs.)**
 - b) Multiplication facts up to 12’s (typically 8-9 yrs.)**

Second, remember: Practice Makes Permanent.

To internalize these essential skills, students need consistent, targeted practice using mental math exercises—first within 100, and eventually beyond.

Chapter 1



Adding & Subtracting Whole Numbers;
Introduction to: Place Value & Decimals

Adding & Subtracting Mentally (5-8 years old)

The operation of addition is represented by (+)
The operation of subtraction is represented by (-)



1. Students should develop automaticity with addition and subtraction facts up to 10—and then up to 20—by first building conceptual understanding, using hands-on tools like fingers, small objects, or snacks (crackers, grapes, etc). Fluency should then be strengthened through consistent practice, memorization, and recall.
2. Teach students to add and subtract beyond 20 using Base-10 decomposition.
Example: $23 + 12 \rightarrow$ Break apart 12 into 10 and 2: $23 + 10 = 33$, then $33 + 2 = 35$.
This strengthens understanding of place value and mental math fluency.
3. Help students master adding and subtracting beyond 100 by breaking numbers into easy, base-10 parts—like tens and ones. Encourage students to decompose numbers into tens and ones to simplify multi-step mental subtraction.
(Part 3 can be done before or after the lesson on place value - on page 9).

Example A: $56 - 27$

- $\rightarrow$ Subtract 20 first: $56 - 20 = 36$
- $\rightarrow$ Then subtract 7 in parts: $36 - 6 = 30$, $30 - 1 = 29$

Example B: $140 - 68$

- $\rightarrow$ Subtract 40: $140 - 40 = 100$
- $\rightarrow$ Subtract 20: $100 - 20 = 80$
- $\rightarrow$ Subtract 8: $80 - 8 = 72$

Simple Place Value - Ones, Tens, Hundreds (5-8 years old)



All single-digit numbers are in the ones' place

Ex. 1, 2, 4, 8, 9 are all in the ones' place

All two-digit numbers consist of the tens and ones place

Example: 25

2 is in the tens place, making the value 20

5 is in the ones place, making the value 5

$$20 + 5 = 25$$

All three-digit numbers consist of the hundreds, tens, and ones place

Example: 315

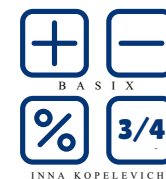
3 is in the hundreds place (300)

1 is in the tens place (10)

5 is in the ones place (5)

$$300 + 10 + 5 = 315$$

Add & Subtract Multi-Digit Numbers (7-9 years old)



1. Add numbers, including carrying, $6 + 8$ is 14, you carry the 1 over the 5, which adds on to the $5 + 3$, to get 9....

$$\begin{array}{r} (1) \\ 56 \\ + 38 \\ \hline 94 \end{array}$$

2. Subtracting numbers, including the method of borrowing

$$\begin{array}{r} \textcolor{red}{4}\textcolor{blue}{5} \\ - 19 \\ \hline 26 \end{array}$$

The **4 (or 40)** turns into a 3 (or 30) as we borrow what looks like 1 (yet has the value of 10) from it, thus the **5** becomes a 15 as that value of 10 is added to it. Then subtract “15” minus 9 to get a 6 in the ones column and “3”- 1 to get the 2.