Critical Areas for COHERENCE in Mathematics in 2ⁿᵈ Grade

In Grade 2, instructional time should focus on **four** critical areas:

1. **Extending understanding of base-ten notation.**

   Students extend their understanding of the base-ten system. This includes ideas of counting in twos, fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones). Students extend this understanding to include decomposition of numbers to assist with later work in operations (e.g., 853 can also be decomposed into 85 tens and 3 ones OR 7 hundreds, 15 tens, and 3 ones OR 8 hundreds, 4 tens, and 13 ones, etc.)

2. **Building fluency with addition and subtraction.**

   Students use their understanding of addition to develop <u>fluency</u> (efficiency, accuracy, and flexibility) with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods (students are expected to use more than the traditional algorithm) to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations (e.g., Commutative Property and Associative Property). They select and accurately apply methods that are appropriate for the context and the numbers involved to <u>mentally</u> calculate sums and differences for numbers with only tens or only hundreds. Students understand that a word problem can be represented with an equation based on the situation, but the solution may use a related equation that is easier to manipulate (e.g., a word problem may be represented with a situation equation such as $25 + ? = 62$; and students understand that even though the word problem is a joining situation, it is easier to solve using a subtraction equation $\{62 - 25 = ?\}$).

3. **Using standard units of measure.**

   Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.

4. **Describing and analyzing shapes.**

   Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.