Central Connecticut State University | MATHEMATICS | 2

WHAT TO LOOK FOR

A quick guide for observing classroom content and practice

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

1. Extending understanding of base-ten notation (NBT)

2. Building fluency with addition and subtraction (OA, NBT)

3. Using standard units of measure (MD)

4. Describing and analyzing shapes (G)

In a **2nd grade math** class you should observe students engaged with at least one math content and practice standard:

Mathematical Practices

- Making sense of problems and persevering in solving them
- Reasoning abstractly and quantitatively
- Constructing viable arguments and critiquing the reasoning of others
- Modeling with mathematics
- Using appropriate tools strategically
- Attending to precision
- Looking for and making use of structure
- Looking for and expressing regularity in repeated reasoning

Content Standards

Operations and Algebraic Thinking (OA)

- Using addition and subtraction within 100 to solve one- and two-step word problems
- Fluently adding and subtracting within 20 using mental strategies
- Working with equal groups of objects to gain foundations for multiplication (*sets* and *arrays*)

Number and Operations in Base Ten (NBT)

- Comparing two 3-digit numbers using place value (*hundreds, tens, ones digits*) and symbols (>, = <)
- Explaining why addition and subtraction strategies work, using place value and the properties of operations
- Adding and subtracting within 1000 using concrete models, drawings, place value, and/or properties of operations

Measurement and Data

- Using appropriate tools when measuring and estimating lengths in *standard* and *metric* units
- Representing whole numbers as lengths on a number line, and representing whole-number sums and differences within 100 on a number line diagram
- Knowing the relationships of time, including *seconds, minutes, hours, days, weeks, months,* and *years*
- Solving word problems involving dollar bills and coins, using symbols appropriately
- Generating data by measuring lengths, then organizing and recording data on a line plot (*dot plot*)

Geometry

- Describing and draw shapes having specified *attributes* (*angles, faces*)
- Partitioning a rectangle into rows and columns of same-size squares and counting to find the total number of them (*arrays*)

NOTES

Mathematics What to Look For The example below features three Indicators from the CT Common Core of Teaching These Indicators are just a sampling from the full set of Standards and were chosen because they create a sequence: the educator plans a lesson that sets clear and high **expectations**, the educator then delivers high quality **instruction**, and finally the educator uses a variety of **assessments** to see if students understand the material or if re-teaching is necessary. This example highlights teacher and student behaviors aligned to the three Indicators that you can expect to see in a rigorous 2nd grade math classroom.

Domain 1 — Classroom Environment, Student Engagement and Commitment to Learning

What is the teacher doing?

- Modeling critical thinking strategies to help establish problem solving and processing expectations
- Establishing classroom routines that support students to communicate their thinking
- Representing and relating solution methods orally, visually, and with concrete objects

What are the students doing?

- Understanding what they will learn in a lesson
- Persisting when engaging with mathematical tasks
- Applying mathematical strategies and concepts when engaging with meaningful real-world problems
- Using everyday and mathematical language to express their mathematical ideas

Domain 2 — Planning for Active Learning

What is the teacher doing?

- Explicitly teaching appropriate ways to use symbols
- Providing students with opportunities to apply their learning and solve problems in collaboration with their peers
- Providing opportunities and structures for students to communicate their mathematical ideas and thinking with each other

What are the students doing?

- Discussing with other students how multiple representations of numbers, operations, and shapes relate to each other
- Noticing patterns in the number system and geometric contexts
- Explaining how multiple representations of numbers and/or operations relate to one another

Domain 3 — Instruction for Active Learning

What is the teacher doing?

- Providing actionable feedback to students about their problem solving processes
- Conducting frequent checks for student understanding and adjusting instruction accordingly
- Prompting students to explain their reasoning and listening to their responses to identify misconceptions

What are the students doing?

- Engaging in challenging learning tasks regardless of learning needs (e.g., linguistic background, disability, academic gifts)
- Using concrete objects or pictures to explore mathematical concepts and relationships
- Using exemplars to inform their work

Connections to Theory and/ or Research

*This document is based on the CT Core Standards Classroom "Look Fors" and the MA Curriculum Observation Guide .