Central Connecticut State University | MATHEMATICS | 3

WHAT TO LOOK FOR

A quick guide for observing classroom content and practice

In **grade 3**, instructional time should focus on four critical areas:

1. Developing understanding of multiplication and division and strategies for multiplication and division within 100 (OA, NBT)

2. Developing understanding of fractions, especially unit fractions (fractions with numerator 1) (NF)

3. Developing understanding of the structure of rectangular arrays and of area (G)

4. Describing and analyzing two-dimensional shapes (G)

In a **3rd 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 multiplication and division within 100 to solve word problems and describe situations involving equal groups, *arrays*, and measurement quantities, by using drawings and equations with a symbol for the unknown number (*variable*) to represent the problem
- Applying properties of operations (commutative, associative, identity and distributive) to multiply (*Students are not required to name the properties*)
- Fluently multiplying and dividing within 100, using a range of strategies and *algorithms*, such as the relationship between multiplication and division or properties of operations
- Solving two-step word problems using the four operations (whole numbers only)
- Assessing the reasonableness of answers using mental computation and estimation strategies such as *rounding*

Number and Operations in Base Ten (NBT)

- Fluently adding and subtracting within 1000, using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction
- Using place value understanding to round whole numbers to the nearest 10 or 100

Number and Operations—Fractions (NF)

- Understanding that fractions represent a *part-whole* relationship, beginning with *unit fractions* (*1/b*)
- Explaining equivalence of fractions and comparing fractions by reasoning about their size
- Understanding and representing a fraction as a number on the *number line* within the interval from 0 to 1

Measurement and Data (MD)

- Telling and writing time to the nearest *minute*, measure time *intervals* in minutes, and solve word problems involving addition and subtraction of time intervals in minutes
- Measuring and estimating liquid volumes and masses of objects using standard metric units of *grams* (g), *kilograms* (kg), and *liters* (*l*) and use drawings to solve one-step word problems
- Drawing a scaled picture graph and a scaled bar graph to represent a data set with several categories, and using the graph to solve *how many more* and *how many less* problems
- Generating measurement data by measuring lengths of objects using rulers marked with halves and fourths of an inch. Recording and showing the data by making a *line plot* (*dot plot*)
- Recognizing *area* as an attribute of plane figures, measuring it by counting unit squares, and relating it to multiplication and addition (tiling)
- Solving real-world and mathematical problems involving *perimeters* of *polygons*, including finding the perimeter given the side lengths and finding an unknown side length

Geometry (G)

- Recognizing *rhombuses, rectangles, squares,* and *trapezoids* as examples of *quadrilaterals*
- Comparing and classifying shapes by their sides and angles
- Partitioning shapes into parts with equal areas and expressing the area of each part as a *unit fraction* of the whole

NOTES

WHAT TO LOOK FOR Structured Observation Guide

MATH 3

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 3rd grade math classroom.

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

What is the teacher doing?

- Communicating both the language and content objectives for students and why they are important
- Creating culturally responsive lessons that engage and sustain student attention
- Focusing attention on mathematical language (e.g., linguistic complexity, conventions, and vocabulary)
- Representing and relating solution methods orally, visually, and with concrete objects

What are the students doing?

- Applying mathematical strategies and concepts when engaging with meaningful real-world problems
- Using mathematical language precisely to convey meaning and understanding of concepts
- Evaluating different representations of a problem and different solution pathways

Domain 2 — Planning for Active Learning

What is the teacher doing?

- Highlighting when students draw explicitly upon class content during discussions with peers
- Encouraging students to interpret structures and formulate conjectures about mathematical situations
- Highlighting commonalities, differences, and patterns in student's ideas.

What are the students doing?

- Specifically choosing symbols and words to express their mathematical ideas to others
- Showing persistence and focus in working together toward a shared goal
- Drawing explicitly upon content they have learned in class in conversations with peers

Domain 3 — Instruction for Active Learning

What is the teacher doing?

- Conducting frequent checks for student understanding and adjusting instruction accordingly
- Prompting students to explain their reasoning and listening to their responses to identify misconceptions
- Providing exemplars that convey mathematical reasoning and understanding (both teacher and student genererated)

What are the students doing?

- Purposefully incorporating feedback from teacher and peers into actions
- Demonstrating learning in multiple ways (e.g., student discourse, completion of class work)
- Engaging in challenging learning tasks regardless of learning needs (e.g., linguistic background, disability, academic

Connections to Theory and/ or Research

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