WHAT TO LOOK FOR

A quick guide for observing classroom content and practice

In **grade 5**, instructional time should focus on three critical areas:

1.
Developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions) (NF)

2.
Extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations (NBT)

3.
Developing understanding of volume (MD)

In a **5ᵗʰ grade math** class you should observe students engaged with at least one math content <u>and</u> 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 *parentheses, brackets,* or *braces* in numerical *expressions*, and *evaluate* expressions with these symbols
- Generating two numerical patterns using two given rules, forming *coordinate pairs* and graphing them on the *coordinate plane*

Number and Operations in Base Ten (NBT)
- Understanding the place value system by determining how *powers of 10* correspond to digit positions in whole and decimal numbers
- Reading, writing, and comparing decimals to thousandths and round to any place
- Fluently multiplying multi-digit whole numbers using the *standard algorithm*
- Illustrating and explaining division of multi-digit, whole number calculations by using *equations, rectangular arrays*, and/or *area models*
- Adding, subtracting, multiplying, and dividing decimals to hundredths using concrete models or drawings and place value or operations strategies

Number and Operations—Fractions (NF)
- Adding and subtracting fractions with *unlike denominators* (including mixed numbers) using an *equivalent fractions* strategy
- Solving word problems involving addition and subtraction of fractions (part/whole or set), using *benchmark fractions* and number sense of fractions to estimate mentally and assess the reasonableness of answers
- Problem solving with fractions, using visual fraction models and equations to find area, resize (*scaling*), and solve other real world problems.

Measurement and Data (MD)
- Converting among different-sized standard measurement units within a given measurement system and using these conversions in solving multi-step, real-world problems.
- Making a *line plot* (*dot plot*) to display a data set of measurements in fractions of a unit and using fraction operations to problem solve with the data
- Recognizing *volume* as an attribute of solid figures that is measured in cubic units and determining volume by counting unit cubes or applying the volume formula to *right rectangular prisms*
- Relating volume to the operations of multiplication and addition, solving real-world and mathematical problems involving volume

Geometry (G)
- Representing real-world and mathematical problems by graphing points in the *first quadrant* of the coordinate plane
- Classifying 2-dimensional figures in a hierarchy based on properties

NOTES

WHAT TO LOOK FOR | Structured Observation Guide

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 5th 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
- 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?

- 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
- Representing problems and solution methods using visual models (manipulatives or drawings) or number sentences

Domain 2 — Planning for Active Learning

What is the teacher doing?

- Creating a culture of being careful and precise when communicating mathematical ideas
- Encouraging students to interpret structures and formulate conjectures about mathematical situations
- Providing students with opportunities to evaluate different approaches to a problem

What are the students doing?

- Showing persistence and focus in working together toward a shared goal
- Drawing explicitly upon content they have learned in class in conversations with peers
- Interpreting structures and formulating conjectures about mathematical situations

Domain 3 — Instruction for Active Learning

What is the teacher doing?

- Providing actionable feedback to students about their problem solving processes
- Using multiple formative approaches to assess student learning (e.g., student discourse, completion of class work)
- Providing exemplars that convey mathematical reasoning and understanding (both teacher and student generated)

What are the students doing?

- Engaging in challenging learning tasks regardless of learning needs (e.g., linguistic background, disability, academic gifts)
- Using concrete objects, diagrams, and expressions to explore mathematical concepts and relationship
- 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