

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 drawing 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 [Standards of Effective Practice](#). 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.

Expectations
(Standard II, Indicator E)

Plans and implements lessons that set clear and high expectations and also make knowledge accessible for all students.

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

Instruction
(Standard II, Indicator A)

Uses instructional practices that reflect high expectations regarding content and quality of effort and work; engage all students; and are personalized to accommodate diverse learning styles, needs, interests, and levels of readiness.

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

Assessment
(Standard I, Indicator B)

Uses a variety of informal and formal methods of assessments to measure student learning, growth, and understanding to develop differentiated and enhanced learning experiences and improve future instruction.

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