

Mathematics Classroom Observation Tool

Iowa is Committed to Supporting Access and Implementation of High-Quality Instructional Materials (HQIM) Across the State. HQIM is the foundation for excellent mathematics instruction at scale. They embed grade-level rigor, build mathematical understanding coherently within and across grades, and give educators a shared anchor for collaborative planning, professional learning, and continuous improvement. Knowing the profound impact HQIM can have on student outcomes, the Iowa Department of Education (IDE) is investing in a coordinated, statewide approach to ensure all classrooms have access to standards-aligned, evidence-based materials and that those materials are used effectively.

Purpose

The **Iowa Mathematics Classroom Observation Tool** communicates shared expectations for mathematics instruction aligned to Iowa's vision and provides trend-level data on how those expectations are showing up in classrooms. The tool is designed to support continuous improvement, not evaluation.

The tool available is designed for Tier 1 core instruction. The tool is not designed for intervention or any instruction outside of Tier 1.

Tool	Use For
K-12 Mathematics	Tier 1 mathematics lessons aligned with grade-level standards, including the development of conceptual understanding, procedural skill and fluency, and application across grades K–12.

Who Uses the Tool and How

The tool serves different users in different ways. Districts can adopt this tool as their primary walkthrough resource, or use it alongside an existing aligned tool as a shared reference for what strong HQIM-based instruction looks like across Iowa.

User	Primary Use
State Education Agency (SEA) Staff	Collect trend-level data across districts to inform statewide support, training, and resources.
District and school leaders	Identify implementation patterns and adjust professional learning, coaching, and conditions that support strong instruction.
Coaches and instructional support personnel	Shape collaborative planning, calibrate observations with colleagues, and provide teacher feedback.

How the Tool is Structured

Each tool examines three questions, in sequence:

1. **Instructional Materials.** Do students have access to high-quality texts and tasks aligned to grade-level standards?
2. **Instructional Practices.** Is the teacher delivering instruction in a way that maintains rigor and facilitates student learning?
3. **Student Engagement.** Are students doing the work of the lesson?

The sequence is intentional. **Start with the materials** to understand what students are expected to learn and be able to do. **Then, examine instructional practices** to see how the teacher uses those materials to make learning accessible. **Finally, look at student engagement** to see how students are responding to the instruction and tasks.

Recommended Observation Routines

The tool is designed for 15–30 minute classroom visits. Visits are most useful when they happen at varied points in the lesson and across the school year, rather than always at the same time of day or same stage of a lesson.

1. **Preview lesson materials when possible.** Reviewing the teacher guide or lesson ahead of time, or referencing it during the visit, can provide helpful context for the observation.
2. **Vary the timing of visits.** Observing different segments of instruction over the course of a year (e.g., beginnings, middles, and ends of lessons) builds a fuller picture of practice.
3. **Capture low-inference notes.** During the observation, record observable behaviors, not interpretations.
4. **Debrief and calibrate.** Connect evidence to the indicators after the visit. When observing with colleagues, discuss evidence before assigning ratings.
5. **Determine next steps.** Use what you saw to inform professional learning, collaborative planning, teacher feedback, or coaching priorities, depending on your role.

Ratings

Use the 1–4 scale to rate how fully the indicator is in place across the segment observed. Ratings should reflect the overall pattern of instruction, not a single moment.

- **1 (Not yet):** The indicator was an appropriate part of the lesson, but missed opportunities, misalignment, or inaccuracies kept it from being in place.
- **2 (Somewhat):** There is an attempt, but it is inconsistent or not yet successful.
- **3 (Mostly):** The indicator is generally present and aligned; some gaps keep it from fully meeting the vision.
- **4 (Yes):** The indicator is consistently and strongly in place and is a clear actualization of the vision.
- **N/A:** The indicator was not observed because it was not appropriate for the lesson or section of the lesson observed.

The distinction between “1 (Not yet)” and “N/A” matters: a “1” means the indicator should have shown up and didn’t; N/A means it wouldn’t be expected to show up in this lesson or segment.

Supporting Resources

The following resources may be helpful when preparing for or conducting observations:

1. [Iowa Academic Standards for Mathematics](#). Referenced when identifying the aspect(s) of rigor (conceptual understanding, procedural skill and fluency, application) called for by the standard(s) being addressed.
2. **The lesson's teacher guide.** Provides context on the lesson's purpose, the aspect(s) of rigor being developed, and the intended student outcomes.

Grade Level/Course:

Teacher:

Date:

I. Instructional Materials

Indicator/ Observable Evidence	1 (Not Yet)	2 (Some what)	3 (Mostly)	4 (Yes)	N/A	Evidence/ Comments
A. The teacher and students use grade-level, standards-aligned HQIM throughout the lesson/learning experience.						
B. Lesson materials intentionally target the aspect(s) of rigor called for by the standard(s) being addressed: conceptual understanding, procedural skill and fluency, and/or application. <i>Refer to the Iowa Academic Standards for Mathematics for guidance on the rigor called for by each standard.</i>						

Describe the materials being used in the observation. Capture the name of the product, unit, and lesson, or if the materials are teacher-made or come from a different source.

II. Instructional Practices

Indicator/ Observable Evidence	1 (Not Yet)	2 (Some what)	3 (Mostly)	4 (Yes)	N/A	Evidence/ Comments
A. The teacher makes the mathematics of the lesson clear through the use of evidence-based instructional practices, designed thinking routines, explanations, visual representations, tasks, and/or examples.						
B. The teacher poses tasks and problems that prompt students to reason about the mathematics of the lesson, explain their thinking, and justify their solutions.						

C. The teacher creates conditions for students to discuss, critique, and build on each other's mathematical thinking.						
D. The teacher provides opportunities for productive struggle, allowing students time to reason through unfamiliar problems before intervening.						
E. The teacher checks for understanding and provides meaningful, academic feedback to students.						
F. The teacher implements appropriate scaffolds (e.g., manipulatives, visual representations, anchor charts, sentence stems) for students who need additional support.						

III. Student Engagement

Indicator/ Observable Evidence	1 (Not Yet)	2 (Some what)	3 (Mostly)	4 (Yes)	N/A	Evidence/ Comments
A. Students do the majority of the work in the lesson—reasoning about, working through, and discussing grade-level problems and tasks.						
B. Students use clear, precise mathematical language (vocabulary) to explain and justify their thinking beyond just stating the answers.						
C. Students engage in peer-to-peer discussion, explaining their mathematical reasoning and asking questions about each other's thinking.						
D. Students use appropriate strategies and problem-solving skills to persevere when they are stuck.						