Teaching Practices & *Shifts in Classroom Practice* Look Fors

Learning Goals

Shift 1: States a standard

→ Communicates learning expectations

- ☐ Goals are appropriate, challenging, and attainable.
- ☐ Goals are specific to the lesson and clear to students.
- ☐ Goals connect to other mathematics.
- ☐ Goals are revisited throughout the lesson.

Tasks

Shift 2: Routine tasks

→ Reasoning tasks

- ☐ Uses engaging, high-cognitive-demand tasks with multiple solution pathways.
- ☐ Uses tasks that arise from home, community, and society.
- ☐ Uses how, why, and when questions to prompt students to reflect on their reasoning.

Representations

Shift 3: About representations

→ Through representations

- ☐ Uses tasks that lend themselves to multiple representations.
- ☐ Selects representations that bring new mathematical insights.
- ☐ Gives students time to select, use, and compare representations.
- ☐ Connects representations to mathematics concepts.

Mathematical Discourse

Shift 4: Show-and-tell

→ Share-and-compare

- ☐ Helps students share, listen, honor, and critique each other's ideas.
- ☐ Helps students consider and discuss each other's thinking.
- ☐ Strategically sequences and uses student responses to highlight mathematical ideas and language.

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Purposeful Questions

Shift 5: Questions seek expected answers

→ Questions illuminate and deepen student understanding

- ☐ Questions make the mathematics visible.
- ☐ Questions solidify and extend student thinking.
- ☐ Questions elicit student comparison of ideas and strategies.
- ☐ Strategies are used to ensure every child is thinking of answers.

Procedural Fluency

Shift 6: Replicating procedures

→ Selecting efficient strategies

- ☐ Gives students time to think about different ways to approach a problem.
- ☐ Encourages students to use their own strategies and methods.
- ☐ Asks students to compare different methods.
- ☐ Asks why a strategy is a good choice.

Productive Struggle

Shift 7: Mathematics-made-easy

→ Mathematics-takes-time

- ☐ Employs ample wait time.
- ☐ Talks about the value of making multiple attempts and persistence.
- ☐ Facilitates discussions on mathematical error(s), misconception(s), or struggle(s) and how to overcome them.

Evidence of Student Thinking

Shift 8: Valuing correct answers

→ Valuing students' thinking

- ☐ Identifies strategies or representations that are important to look for as evidence of student understanding.
- ☐ Makes just-in-time decisions based on observations, student responses to questions, and written work.
- ☐ Uses questions or prompts that probe, scaffold, or extend students' understanding.

Everything You Need for Mathematics Coaching: Tools, Plans, and a Process That Works for Any Instructional Leader by Maggie B. McGatha and Jennifer M. Bay-Williams with Beth McCord Kobett and Jonathan O. Wray. Thousand Oaks, CA: Corwin, **www.corwin.com/math**.

online resources

Available for download at **resources.corwin.com/mathematicscoaching.**

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Mathematical Practices & Student Look Fors

1. Make sense of problems and persevere in solving them.

- ☐ Analyze information (givens, constraints, relationships).
- ☐ Make conjectures and plan a solution pathway.
- ☐ Use objects, drawings, and diagrams to solve problems.
- ☐ Monitor progress and change course as necessary.
- ☐ Check answers to problems and ask, "Does this make sense?"

2. Reason abstractly and quantitatively.

- ☐ Make sense of quantities and relationships in problem situations.
- ☐ Create a coherent representation of a problem.
- ☐ Translate from contextualized to generalized or vice versa.
- ☐ Flexibly use properties of operations.

3. Construct viable arguments and critique the reasoning of others.

- ☐ Make conjectures and use counterexamples to build a logical progression of statements to support ideas.
- ☐ Use definitions and previously established results.
- ☐ Listen to or read the arguments of others.
- ☐ Ask probing questions to other students.

4. Model with mathematics.

- ☐ Determine equation that represents a situation.
- ☐ Illustrate mathematical relationships using diagrams, two-way tables, graphs, flowcharts, and formulas.
- ☐ Check to see whether an answer makes sense within the context of a situation and change a model when necessary.

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5. Use appropriate tools strategically.

- ☐ Choose tools that are appropriate for the task (e.g., manipulative, calculator, digital technology, ruler).
- ☐ Use technological tools to visualize the results of assumptions, explore consequences, and compare predictions with data.
- ☐ Identify relevant external math resources (digital content on a website) and use them to pose or solve problems.

6. Attend to precision.

- ☐ Communicate precisely, using appropriate terminology.
- ☐ Specify units of measure and provide accurate labels on graphs.
- ☐ Express numerical answers with appropriate degree of precision.
- ☐ Provide carefully formulated explanations.

7. Look for and make use of structure.

- ☐ Notice patterns or structure, recognizing that quantities can be represented in different ways.
- ☐ Use knowledge of properties to efficiently solve problems.
- ☐ View complicated quantities both as single objects and as compositions of several objects.

8. Look for and express regularity in repeated reasoning.

- ☐ Notice repeated calculations and look for general methods and shortcuts.
- ☐ Maintain oversight of the process while attending to the details.
- ☐ Evaluate reasonableness of intermediate and final results.

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