Table 1. Mathematics Teaching Practices

Establish mathematics goals to focus learning. Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.
Implement tasks that promote reasoning and problem solving. Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.
Use and connect mathematical representations. Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving.
Facilitate meaningful mathematical discourse. Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.
Pose purposeful questions. Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.
Build procedural fluency from conceptual understanding. Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.
Support productive struggle in learning mathematics. Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.
Elicit and use evidence of student thinking. Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning.

Source: NCTM, 2014, p. 10

Table 2. Mathematics Coaching Practices

Engage in Mathematics. Effective coaching of mathematics encourages collaborative discussions and problem solving to plan lessons, build content knowledge, anticipate or analyze student responses, prepare purposeful questions, explore manipulatives, select mathematics goals, and analyze the rigor and quality of the mathematics tasks. Engaging in mathematics within these activities deepens teachers' specialized disciplinary knowledge.
Examine Student Work. Effective coaching of mathematics facilitates collaborative conversations centered on examining student work samples to identify student understanding and misconceptions, to develop a shared understanding of student conceptualization of a mathematics topic, and to inform the next instructional steps.
Analyze Classroom Video. Effective coaching of mathematics guides conversations on shared teaching experiences to reflect on aspects of teaching. Videos can serve as representations that support teachers in learning and refining their practice.
Rehearse Aspects of Practice. Effective coaching of mathematics orchestrates pre-planning of specific practices and conversations to provide opportunities to practice aspects of teaching and provide and receive feedback.
Engage in Lesson Study or Studio Day. Effective coaching of mathematics brings together groups of teachers, administrators, and/or instructional specialists in a collaborative professional development. One of more cycles of lesson study or studio day may include planning a lesson, observing the implemented lesson, gathering student evidence, analyzing student data, and reflecting on the enactment and outcomes. These forms of professional development also provide opportunities for coaches to help teachers deepen their content knowledge.
Co-teach: Effective coaching of mathematics involves supporting teachers with delivery of instruction in the classroom. The coach and teacher work collaboratively to purposefully plan interactions to maximize student learning and enact particular practices to improve instruction.
Model Instruction: Effective coaching of mathematics involves demonstrating for teachers the delivery of instruction in the classroom. The coach and teacher work collaboratively to purposefully highlight coach-student interactions to maximize student learning.

Sources: Adapted from Baker, Knapp & Galanti in press; Gibbons & Cobb, accepted; Teachers Development Group, 2010