How Can I Help Students Use the Standards for Mathematical Practice?
Implementing SMPs through Tasks & Teacher Moves[1]

Math Practice	*Select a Math Task that…*	*Make Teacher Moves that…*
#1 **Make sense of problems and persevere in solving them.**	• Has more than one entry point • Has multiple solution paths • Cognitively challenging, not obvious, not overly-scaffolded • Requires balance of procedural fluency and conceptual understanding • Requires students to justify solution using other solution methods	• Structure individual think time and student-student talk time. • Allow time for students to struggle (make sense, get-stuck-and-persevere), without "rescuing." • Probe student reasoning and justification. • Build in time for metacognition (think about and discuss solution process).
#2 **Reason abstractly and quantitatively.**	• Has a relevant, realistic context • Can be expressed with multiple representations • Requires students to frame solution in a context	• Expect students to interpret, model, and connect multiple representations. • Prompt students to articulate connections between context and representations. • Provide minimal scaffolding to support connections to the context.
#3 **Construct viable arguments and critique the reasoning of others.**	• Is clearly stated • Is grade level appropriate • Avoids single steps or routine algorithms	• Help students differentiate between assumptions and logical conjectures. • Model and prompt students to evaluate peer arguments. • Expect students to formally justify their conjectures.

#4
 Model with mathematics.
	• Illustrates the relevance of the math
	 • Requires students to…
	    o identify variables and extraneous information
	    o compute & interpret results, report with multiple representations, and justify reasonableness of results
		• Expect students to (or ask questions to help students) identify variables and procedures.
		 • Expect students to (or facilitate discussions) evaluate the appropriateness of the model.

#5 **Use appropriate tools strategically.**	• Lends itself to (or requires) using multiple learning tools • Gives students opportunity to develop (or requires the use of) fluency in estimation and mental computations	• Allow students to choose (and state why) appropriate learning tools. • Encourage creative tool alternatives. • Expect (or model) error checking by estimation.
#6 **Attend to precision.**	• Contains precise, not wordy, instructions • Includes assessment criteria for communication of ideas	• Demonstrate consistent expectation for precision in communication and solutions. • Encourage student identification of incomplete aspects of process or solution.

#7
 Look for and make use of structure.
	• Requires students to analyze task before automatically applying an algorithm
	 • Requires students to identify and compare the merits of different approaches
		• Question students about…
		    o …reasonable intermediate results?
		    o …justify algorithm or solution path?
		 • Prompt students to identify mathematical structures in symbolic expressions, geometric figures, graphs, tables, etc.

#8 **Look for and express regularity in repeated reasoning.**	• Lends itself to (or requires) recognition of pattern or structure • Connects to prior knowledge or future concepts in a cumulative, but non-routine way	• Help students understand why procedural shortcuts work. • Prompt students (or model) to make explicit, conceptual connections between prior and/or future concepts.

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[1] Adapted from "Rubric—Implementing Standards for Mathematical Practice," Park City Math Institute, 2011