

Teacher(s): _____ Grade/Course: _____ Date: _____ Start/End Times: _____ # of Students: _____

Mathematics Practices		Students:	Teachers:
Overarching habits of mind of a productive math thinker	1. Make sense of problems and persevere in solving them	<input type="checkbox"/> Analyze information and explain the meaning of the problem <input type="checkbox"/> Actively engaged in problem solving (Develop, carry out, and refine a plan) <input type="checkbox"/> Show patience and positive attitudes <input type="checkbox"/> Ask if their answers make sense <input type="checkbox"/> Check their answers with a different method Comments:	<input type="checkbox"/> Pose rich problems and/or ask open ended questions <input type="checkbox"/> Provide wait-time for processing/finding solutions <input type="checkbox"/> Circulate to pose probing questions and monitor student progress <input type="checkbox"/> Provide opportunities and time for cooperative problem solving and reciprocal teaching Comments:
	6. Attend to precision	<input type="checkbox"/> Calculate accurately and efficiently <input type="checkbox"/> Explain thinking using mathematics vocabulary <input type="checkbox"/> Use appropriate symbols and specify units of measure Comments:	<input type="checkbox"/> Recognize and model efficient strategies for computation <input type="checkbox"/> Use (and challenge students to use) mathematics vocabulary precisely and consistently Comments:
Reasoning and Explaining	2. Reason abstractly and quantitatively	<input type="checkbox"/> Represent a problem symbolically <input type="checkbox"/> Explain their thinking <input type="checkbox"/> Use numbers and quantities flexibly by applying properties of operations and place value <input type="checkbox"/> Examine the reasonableness of their answers/calculations Comments:	<input type="checkbox"/> Ask students to explain their thinking regardless of accuracy <input type="checkbox"/> Highlight flexible use of numbers <input type="checkbox"/> Facilitate discussion through guided questions and representations <input type="checkbox"/> Accept varied solutions/representations Comments:
	3. Construct viable arguments and critique the reasoning of others	<input type="checkbox"/> Make conjectures to explore their ideas <input type="checkbox"/> Justify solutions and approaches <input type="checkbox"/> Listen to the reasoning of others, compare arguments, and decide if the arguments of others makes sense <input type="checkbox"/> Ask clarifying and probing questions Comments:	<input type="checkbox"/> Provides opportunities for students to listen to or read the conclusions and arguments of others <input type="checkbox"/> Establish and facilitate a safe environment for discussion <input type="checkbox"/> Ask clarifying and probing questions <input type="checkbox"/> Avoid giving too much assistance (e.g., providing answers or procedures) Comments:

* All indicators are not necessary for providing full evidence of practice(s). Each practice may not be evident during every lesson.
 Howard County Public School System • Elementary and Secondary Mathematics Offices • Draft 2011

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Mathematics Practices		Students:	Teacher(s) promote(s) by:
Modeling and Using Tools	4. Model with mathematics	<input type="checkbox"/> Apply prior knowledge to new problems and reflect <input type="checkbox"/> Use representations to solve real life problems <input type="checkbox"/> Apply formulas and equations where appropriate Comments:	<input type="checkbox"/> Pose problems connected to previous concepts <input type="checkbox"/> Provide a variety of real world contexts <input type="checkbox"/> Use intentional representations Comments:
	5. Use appropriate tools strategically	<input type="checkbox"/> Select and use tools strategically (and flexibly) to visualize, explore, and compare information <input type="checkbox"/> Use technological tools and resources to solve problems and deepen understanding Comments:	<input type="checkbox"/> Make appropriate tools available for learning (calculators, concrete models, digital resources, pencil/paper, compass, protractor, etc.) <input type="checkbox"/> Embed tools with their instruction Comments:
Seeing structure and generalizing	7. Look for and make use of structure	<input type="checkbox"/> Look for, develop, and generalize relationships and patterns <input type="checkbox"/> Apply conjectures about patterns and properties to new situations Comments:	<input type="checkbox"/> Provides time for applying and discussing properties <input type="checkbox"/> Ask questions about the application of patterns <input type="checkbox"/> Highlight different approaches for solving problems Comments:
	8. Look for and express regularity in repeated reasoning	<input type="checkbox"/> Look for methods and shortcuts in patterns in repeated calculations <input type="checkbox"/> Evaluate the reasonableness of intermediate results and solutions Comments:	<input type="checkbox"/> Provide tasks and problems with patterns <input type="checkbox"/> Ask about possible answers before, and reasonableness after computations Comments:

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