Math Practices	Beginning: Learners can...	Intermediate: Learners can...	Advanced: Learners can...
M1: Make sense of problems & persevere in solving them.	Explain their thought processes in solving a problem at least one way. Stay with a challenging problem for more than one attempt.	Explain their thought processes in solving a problem, and they can represent it in several ways. Try several approaches in finding a solution… seeking hints only if they are stuck.	Discuss, explain, and demonstrate solving a problem with multiple representations and in multiple ways. Struggle with attempts over a period of time while learning from previous attempts.
M2: Reason abstractly & quantitatively.	Reason using models or pictorial representations to solve problems.	Translate situations into symbols for solving problems.	Move between appropriate situations and symbols to solve problems; they can convert symbols into meaningful situations and vice versa.
M3: Construct viable arguments & critique the reasoning of others.	Explain their process for finding a solution. Understand and discuss other ideas and approaches.	Explain their own and others' thinking with accurate vocabulary. Explain other students' solutions while discerning the strengths and weaknesses of the process.	Explain and justify their solutions in a concise & logical way using appropriate language & vocabulary. Explain the reasoning of others and compare/ contrast the strategies leading to the solution.
M4: Model with mathematics.	Use models to represent and solve a problem; translate the solution into mathematical symbols.	Use models and symbols to represent and solve a problem and justify their explanation.	Use a variety of models, symbolic representations, and technology tools to demonstrate a solution to a problem.
M5: Use appropriate tools strategically.	Use the appropriate tool(s) to find a solution.	Select, from a variety of tools, those that can be used to solve a problem, and they can defend the selection.	Combine various tools and technology to explore and solve problems; they can defend both their solution and the selected tools.
M6: Attend to Precision.	Communicate their reasoning and solution to others.	Incorporate appropriate vocabulary and symbols when communicating with others; they can speak in a concise and organized manner.	Use appropriate symbols, vocabulary, and labeling to effectively communicate and exchange ideas in an organized and concise manner.
M7: Look for & make use of structure.	Look for structure within mathematics to help them solve problems efficiently (ex: commutative property of multiplication).	Compose and decompose number situations and relationships through observed patterns in order to simplify and understand solutions.	See complex/complicated mathematical expressions as component parts; they can move between perspectives: part to whole and whole to parts.
M8: Look for & express regularity in repeated reasoning.	Look for obvious patterns and use if/then reasoning strategies to extend/check patterns.	Find and explain subtle patterns; they can extend multiple-layer patterns.	Reflect upon deep underlying relationships and contemplate the symbolic/mathematical unification of those relationships.