

Examples of Teacher and Student Moves for the MTRs

Below are examples that demonstrate the embedding of the MTRs within the mathematics classroom. The provided teacher and student moves are examples of how some MTRs could be incorporated into student learning and instruction. The information included in this table is not a comprehensive list, and educators are encouraged to incorporate other teacher and student moves that support the MTRs.

MTR	Student Moves	Teacher Moves
<p>MA.K12.MTR.1.1 <i>Actively participate in effortful learning both individually and collectively.</i></p>	<ul style="list-style-type: none"> • Student asks questions to self, others and teacher when necessary. • Student stays engaged in the task and helps others during the completion of the task. • Student analyzes the task in a way that makes sense to themselves. • Student builds perseverance in self by staying engaged and modifying methods as they solve a problem. 	<ul style="list-style-type: none"> • Teacher builds a classroom community by allowing students to build their own set of “norms.” • Teacher creates a culture in which students are encouraged to ask questions, including questioning the accuracy within a real-world context. • Teacher chooses differentiated, challenging tasks that fit the students’ needs to help build perseverance in students. • Teacher builds community of learners by encouraging students and recognizing their effort in staying engaged in the task and celebrating errors as an opportunity for learning.
<p>MA.K12.MTR.2.1 <i>Demonstrate understanding by representing problems in multiple ways.</i></p>	<ul style="list-style-type: none"> • Student chooses their preferred method of representation. • Student represents a problem in more than one way and is able to make connections between the representations. 	<ul style="list-style-type: none"> • Teacher plans ahead to allow students to choose their tools. • While sharing student work, teacher purposefully shows various representations to make connections between different strategies or methods. • Teacher helps make connections for students between different representations (i.e., table, equation or written description).
<p>MA.K12.MTR.3.1 <i>Complete tasks with mathematical fluency.</i></p>	<ul style="list-style-type: none"> • Student uses feedback from teacher and peers to improve efficiency. 	<ul style="list-style-type: none"> • Teacher provides opportunity for students to reflect on the method they used, determining if there is a more efficient way depending on the context.

MTR	Student Moves	Teacher Moves
<p>MA.K12.MTR.4.1 <i>Engage in discussions that reflect on the mathematical thinking of self and others.</i></p>	<ul style="list-style-type: none"> • Student effectively justifies their reasoning for their methods. • Student can identify errors within their own work and create possible explanations. • When working in small groups, student recognizes errors of their peers and offers suggestions. • Student communicates mathematical vocabulary efficiently to others. 	<ul style="list-style-type: none"> • Teacher purposefully groups students together to provide opportunities for discussion. • Teacher chooses sequential representation of methods to help students explain their reasoning.
<p>MA.K12.MTR.5.1 <i>Use patterns and structure to help understand and connect mathematical concepts.</i></p>	<ul style="list-style-type: none"> • Student determines what information is needed and logically follows a plan to solve problems piece by piece. • Student is able to make connections from previous knowledge. 	<ul style="list-style-type: none"> • Teacher allows for students to engage with information to connect current understanding to new methods. • Teacher provides opportunities for students to discuss and develop generalizations about a mathematical concept. • Teacher provides opportunities for students to develop their own steps in solving a problem.
<p>MA.K12.MTR.6.1 <i>Assess the reasonableness of solutions.</i></p>	<ul style="list-style-type: none"> • Student provides explanation of results. • Student continually checks their calculations. • Student estimates a solution before performing calculations. 	<ul style="list-style-type: none"> • Teacher encourages students to check and revise solutions and provide explanations for results. • Teacher allows opportunities for students to verify their solutions by providing justifications to self and others.
<p>MA.K12.MTR.7.1 <i>Apply mathematics to real-world contexts.</i></p>	<ul style="list-style-type: none"> • Student relates their real-world experience to the context provided by the teacher during instruction. • Student performs investigations to determine if a scenario can represent a real-world context. 	<ul style="list-style-type: none"> • Teacher provides real-world context in mathematical problems to support students in making connections using models and investigations.