

Math 5 Rs for Active Student Engagement Look Fors



<p>Mathematical Thinkers show <u>RESILIENCE</u> by:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Understanding the context of the problem to solve. <input type="checkbox"/> Using strategies to analyze given information. <input type="checkbox"/> Formulating a plan or strategy based on current understanding and previous attempts. <input type="checkbox"/> Using a range of appropriate skills and strategies to determine a solution. <input type="checkbox"/> Monitoring and evaluating their progress when solving problems and adjusting as needed. <input type="checkbox"/> Monitoring progress and changing course as necessary. 	<p>Mathematical Thinkers show <u>REASONING</u> by:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Making sense of quantities and relationships in mathematical and real-world situations. <input type="checkbox"/> Creating an appropriate symbolic representation of a real-world situation. <input type="checkbox"/> Considering the units and meaning of numbers and variables when reasoning about a situation. <input type="checkbox"/> Comfortably alternating between a problem's context and its mathematical representation. <input type="checkbox"/> Flexibly using properties of operations. <input type="checkbox"/> Representing mathematical thinking clearly and logically. <input type="checkbox"/> Checking answers and asking, "Does this make sense?" <input type="checkbox"/> Translating from contextualized to generalized or vice versa. 	<p>Mathematical Thinkers show <u>REFLECTION</u> by:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Organizing, explaining, and defending their reasoning using precise mathematical language and notation. <input type="checkbox"/> Conveying numerical answers with a degree of accuracy appropriate for the problem context. <input type="checkbox"/> Asking probing questions of themselves and others to justify when a method is more appropriate, efficient, flexible, and/or accurate. <input type="checkbox"/> Explaining the connections between multiple representations (visual, symbolic, contextual, verbal, and physical). <input type="checkbox"/> Refining their mathematical explanations as a result of the mathematical discourse. <input type="checkbox"/> Making conjectures and using counterexamples to build a logical progression of statements to support ideas. <input type="checkbox"/> Using definitions and previously established results.
<p>Mathematical Thinkers show <u>REPRESENTATION</u> by:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Selecting and using representations (symbolic, verbal, visual, contextual, physical) that help them make sense of the mathematics. <input type="checkbox"/> Choosing from a variety of tools available to them. <input type="checkbox"/> Selecting and using appropriate tools and representations to support and deepen their mathematical knowledge. <input type="checkbox"/> Choosing tools that are appropriate for the task and revising their choices of representations and tools when needed. <input type="checkbox"/> Using technological tools to visualize the results of assumptions, explore consequences, and compare predictions with data. <input type="checkbox"/> Identifying relevant external math resources and using them to pose or solve problems. 	<p>Mathematical Thinkers show <u>RELATIONSHIPS</u> by:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Finding structure or patterns in diagrams, graphs, and algebraic expressions to make rules that can be used to solve problems. <input type="checkbox"/> Seeing how repeated calculations, patterns, and relationships can be used to develop an efficient approach (such as an algorithm, general formula, process, method, or model) to a non-routine situation. <input type="checkbox"/> Assessing the reasonableness of solutions. <input type="checkbox"/> Pausing to see patterns, both simple and complex, within the broader scope of the problem as well as notice details that connect to previous learning. <input type="checkbox"/> Making use of connections among concepts established over the course of a unit or multiple units to solve problems. 	<p>Notes:</p>