

**Mathematical Disposition Scale,
Grades 3-12**

Level 1	Level 2	Level 3	Level 4	Level 5
<p>Generally lacks confidence when doing mathematics. May avoid working or give up easily—needs guidance and support when completing assignments and solving problems. May need help understanding the problem, knowing how to proceed, and usually solves problems using fairly limited approaches (e.g., only drawing a picture or using guess and check by 6th grader), or low level arithmetic (e.g., repeated additions instead of multiplication). Has difficulty explaining how a problem was solved, and understanding a different approach. Almost never chooses to do mathematics on own.</p>	<p>May have limited confidence and persistence when doing mathematics. May need encouragement and support to complete work and to participate in mathematical discussions. Generally knows only one way to solve a problem and may not consider whether the answer is reasonable in the problem context. Oral and written explanations about work may be unclear and generally describes procedures used rather than why they make sense. Has difficulty understanding approaches and explanations of others. Seldom pursues a mathematical idea on own.</p>	<p>Confidence and persistence may vary depending on the familiarity of the task. May be hesitant to ask for help understanding a concept or solving a problem. With support, can solve a problem in more than one way. When prompted, can interpret the reasonableness of the solution within the problem context. Can describe processes used to solve problems and generally uses correct mathematical notation and vocabulary for procedures and concepts the student knows. Can understand explanations of others if similar to own. Occasionally may pursue a mathematical idea on own.</p>	<p>Usually confident and persistent in solving a problem. Solves a variety of problems, analyzing the problem situations, using a variety of approaches, and interpreting the solutions sensibly. May need a probing question to open up a different way of thinking about a problem. Willing to be confused, and asks for help when stuck. Generally communicates clearly about how a problem was solved and why the solution makes sense; and generally understands solution strategies of others. When encouraged, will make connections among important mathematical ideas and make some generalizations beyond the assignment. Sometimes may pursue mathematical ideas on own.</p>	<p>Confident and persistent when solving problems. Solves a variety of problems—analyzing the situation, flexibly using various strategies, interpreting the solution in the original context, and reflecting on the methods used and solution obtained. Frequently extends thinking beyond the immediate problem. Recognizes when own understanding is limited, generates ways to reenter a problem, and seeks assistance when needed. Oral and written communications are clear, convincing, and mathematically sound. Able to modify thinking when given a convincing argument. Makes connections among mathematical ideas and can construct generalizations. May pursue mathematical ideas on own.</p>