

# Reporting in Mathematics

By Anne Davies

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Learning is complex; our curriculum documents, standards, and outcomes reflect this complexity. Gone are the days when we can 'measure' learning in the traditional way, since learning that is more than simple rote memory cannot be measured like weight, height or distance. Assessment and evaluation necessarily involves professional judgment, which is learned. We gain expertise as we learn about the subject area, discipline or undertaking, as well as the standards of quality and success.

Some people think assessment and evaluation in Mathematics must be easy since the work is either right or wrong. This is an overly simplistic view. Teachers are beginning to use their professional judgment to assess and evaluate by defining Mathematics in such a way that the complexity of the discipline is acknowledged, yet managed. The following example is a description of quality and success, given complex Mathematical standards and outcomes. The outline includes all the concepts taught, as well as Mathematical 'habits of mind.' Based on curriculum documents and relevant standards, it describes the learning destination – that is, what quality and success looks like.

This description is intended to guide teachers and students as they collect evidence of learning, while informing parents of what is needed to achieve success. Notice that it also includes the evidence of learning, both qualitative and quantitative, that will be considered as teachers engage in making a professional judgment prior to a report card grade being reported. Notice that the expectations are the same for all students regardless of their level of achievement. After all, the learning destination and the quality expectation is the same for everyone (unless students have an Individual Education Plan that impacts their learning in Mathematics). The factor that changes from level to level is the differing types of support needed by students to achieve success.

<b>Mathematics – Evidence of learning demonstrates the student ....</b>		
<b>Consistently and independently:</b>	<b>Usually needs some support to:</b>	<b>Needs lots of support is order to:</b>
<ul style="list-style-type: none"> <li>• Understands, remembers and applies mathematical concepts being studied</li> <li>• Articulates clear understanding of mathematical concepts and is able to give everyday examples of use</li> <li>• Applies concepts, skills and strategies to propose solutions to problems</li> <li>• Analyzes problems, uses a variety of effective strategies to find possible solutions, and is able to check and evaluate the effectiveness of the process used</li> <li>• Works effectively by self and with others</li> <li>• Communicates effectively using words, symbols, and representations</li> <li>• Connects ideas to self, to others and to other ideas or tasks</li> <li>• Uses mathematical 'habits of mind' including, for example, persistence, questioning, drawing on past knowledge, precision of language and thought</li> </ul>	<ul style="list-style-type: none"> <li>• Understand, remember and apply mathematical concepts being studied</li> <li>• Articulate clear understanding of mathematical concepts and give everyday examples of use</li> <li>• Apply concepts, skills and strategies to propose solutions to problems</li> <li>• Analyze problems, use a variety of effective strategies to find possible solutions, and be able to check and evaluate the effectiveness of the processes used</li> <li>• Work effectively by self and with others</li> <li>• Communicate effectively using words, symbols, and representations</li> <li>• Connect ideas to self, to others and to other ideas or tasks</li> <li>• Use mathematical 'habits of mind' including, for example, persistence, questioning, drawing on past knowledge, precision of language and thought</li> </ul>	<ul style="list-style-type: none"> <li>• Understand, remember and apply mathematical concepts being studied</li> <li>• Articulate clear understanding of mathematical concepts and be able to give everyday examples of use</li> <li>• Apply concepts, skills and strategies to propose solutions to problems</li> <li>• Analyze problems, use a variety of effective strategies to find possible solutions, and be able to check and evaluate the effectiveness of the process used</li> <li>• Work effectively by self and with others</li> <li>• Communicate effectively using words, symbols, and representations</li> <li>• Connect ideas to self, to others and to other ideas or tasks</li> <li>• Use mathematical 'habits of mind' including, for example, persistence, questioning, drawing on past knowledge, precision of language and thought</li> </ul>

<p>Common assessment scores: 4 Evaluations such as performance tasks, projects, tests and quizzes receive grades in the 91% –100% range.</p>	<p>Common assessment scores: 3's and 4's Evaluations such as performance tasks, projects, tests and quizzes receive grades in the 81% –90% range.</p>	<p>Common assessment scores: mostly 3's Evaluations such as performance tasks, projects, tests and quizzes receive grades in the 71% –80% range.</p>
<p>Evidence of learning is demonstrated in a range of ways including:</p> <ul style="list-style-type: none"> <li>●Products (e.g. work samples, tests, quizzes)</li> <li>●Observations (e.g. class work, demonstrations, performance tasks, teacher observations)</li> <li>●Conversations (e.g. discussions, written reflections, journal entries, conferences, interviews)</li> </ul>	<p>Evidence of learning is demonstrated in a range of ways including:</p> <ul style="list-style-type: none"> <li>●Products (e.g. work samples, tests, quizzes)</li> <li>●Observations (e.g. class work, demonstrations, performance tasks, teacher observations)</li> <li>●Conversations (e.g. discussions, written reflections, journal entries, conferences, interviews)</li> </ul>	<p>Evidence of learning is demonstrated in a range of ways including:</p> <ul style="list-style-type: none"> <li>●Products (e.g. work samples, tests, quizzes)</li> <li>●Observations (e.g. class work, demonstrations, performance tasks, teacher observations)</li> <li>●Conversations (e.g. discussions, written reflections, journal entries, conferences, interviews)</li> </ul>