



**Wisconsin Mathematics Council
Position Statement
Highly Effective Teachers of Mathematics**

The Wisconsin Mathematics Council (WMC) supports the NCTM position on “High Qualified Teachers” and the supporting rationale.

WMC Position

Highly effective Wisconsin teachers of mathematics must expect mathematics to make sense for themselves and their students. They promote an active engagement in the problem solving process when encountering routine and non-routine problems. Their students are encouraged to persevere and to actively engage in experimenting with procedural and conceptual tools in the quest for reasonable and efficient solutions.

Every highly effective teacher of mathematics must have adequate knowledge of the teaching and learning of mathematics, as well as, the scope and sequence of content and curriculum. A highly effective mathematics teacher must:

- possess a strong content knowledge of mathematics,
- understand how students learn mathematics,
- utilize multiple approaches, representations, and insights to meet the needs of every student at all levels of achievement.
- carefully study and evaluate current mathematics education research and incorporate relevant findings into their teaching when appropriate.

Classrooms of highly effective mathematics teachers are places of engaged learning where students persevere in rigorous problem solving activities. Students are encouraged to work individually and collaboratively. Teachers orchestrate learning so students see connections between multiple mathematics topics, as well as, outside the field of mathematics. Students are encouraged to think strategically becoming experimenters and inventors, who can generalize their knowledge to new problem situations. Mathematics is found to be useful and makes sense to students.

Local school districts will:

- seek professionals who exhibit these characteristics of a highly effective teacher of mathematics,
- promote and support opportunities for staff to develop and maintain the qualities that enhance these characteristics.

The Wisconsin Mathematics Council and institutes of higher education will offer professional development opportunities and classes to support the development of highly effective teachers of mathematics.

NCTM Position Highly Qualified Teachers

Question: What qualities should a teacher have for students to learn mathematics well?

NCTM Position

Every student has the right to be taught mathematics by a highly qualified teacher—a teacher who knows mathematics well and who can guide students' understanding and learning. A highly qualified teacher understands how students learn mathematics, expects all students to learn mathematics, employs a wide range of teaching strategies, and is committed to lifelong professional learning.

The No Child Left Behind (NCLB) legislation defines “highly qualified teachers” as teachers who have a bachelor’s degree and full state certification or licensure. But teaching mathematics well demands much more. Mathematics teaching at any level requires that teachers have an extensive knowledge of mathematics, including the specialized content knowledge specific to the work of teaching, as well as a knowledge of the mathematics curriculum and how students learn.

NCTM expects that high school teachers will have completed mathematics coursework equivalent to that required for a major in mathematics. Middle school teachers should have acquired the depth and proficiency in mathematics equivalent to at least an undergraduate minor in mathematics. Elementary teachers, resource teachers, and all others charged with providing instruction in mathematics should have completed the equivalent of at least three college-level mathematics courses that emphasize the mathematical structures essential to the elementary grades (including number and operations, algebra, geometry, data analysis, and probability). Furthermore, all teachers need to know how mathematics is used in interpreting the statements, solutions, and questions of students, using such responses to build future understandings.

All teachers must understand how students learn mathematics. They must know how to plan, conduct, and assess the effectiveness of mathematics lessons and know how and when to make teaching decisions (e.g., listening, modeling, questioning). Highly qualified teachers of mathematics not only understand—but also invest in—the particular culture of their students and school. They are adept at knowing how to actively engage students of diverse backgrounds and strengths in significant and challenging mathematical tasks that help them understand concepts, learn skills, and solve problems. A highly qualified mathematics teacher at any level recognizes the need for, and commits to, lifelong professional learning involving mathematics and its instruction. Overall, the mathematical knowledge, informed actions, positive attitudes, and high expectations of highly qualified mathematics teachers lead to mathematics learning, confidence, and the development of a positive attitude toward mathematics on the part of students.

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