



The Mathematical Reasoning with Connections (MRWC) Curriculum Development Committee believes that any attempt to improve the college and career readiness of high school graduates must address three critical and synergistic elements that influence the extent and nature of mathematics learning in K-12 classrooms. These elements are (i) the curriculum, (ii) the teachers, and (iii) the students.

Mathematical Reasoning with Connections (MRWC)

Key Principles

The following key principles have served as the guidelines for the committee's work in developing the MRWC curriculum:

1. Mathematics consists of many strands – arithmetic, algebra, geometry, trigonometry, data analysis – and the power of mathematics lies in the interconnected fusing of those strands into a cohesive body of knowledge.
2. The Common Core *Standards for Mathematical Practice* should be an integral part of every lesson and should be seamlessly woven into the curriculum.
3. Mathematics is far more than executing procedures that yield correct answers. It is a way of organizing information so as to extract and convey meaning. An expectation for mathematics should always be that it makes sense.
4. Mathematics learning involves productive struggle to develop conceptual understandings that when coupled with procedural fluency leads to robust knowledge.
5. Fluency in the language of mathematics is an important component of discovering, exploring, and communicating mathematical knowledge.
6. The curriculum should highlight the beauty inherent in mathematics. This beauty is found intrinsically in the consistency, logic, and completeness of mathematics, and extrinsically in mathematics' ability to provide explanations for the complexity and orderliness of the world we live in.
7. The curriculum should provide opportunities for teachers to explore new mathematical connections so as to grow both mathematically and pedagogically.
8. All students can learn and enjoy mathematics provided it is taught in a meaningful way that logically and purposefully builds on previously acquired mathematical knowledge.
9. Since acquiring mathematical knowledge is a social endeavor, classroom activities must include collaborative discussions and explorations that encourage individual and communal meaning and sense making.
10. All high school students should be provided with a strong foundational knowledge of high school mathematics that can serve as a springboard to a broad range of college and career options in a modern technological society.