

The Standards for Mathematical Practice describe the skills that mathematics educators should seek to develop in their students. The descriptions of the mathematical practices in this document provide examples of how student performance will change and grow as they engage with and master new and more advanced mathematical ideas across the grade levels.

MP.1 Make sense of problems and persevere in solving them.

Students construct accurate diagrams of geometry problems to help make sense of them. They organize their work so that others can follow their reasoning (e.g., in proofs).

MP.2 Reason abstractly and quantitatively.

Students understand that the coordinate plane can be used to represent geometric shapes and transformations, and therefore they connect their understanding of number and algebra to geometry.

MP.3 Construct viable arguments and critique the reasoning of others.

Students reason through the solving of equations, recognizing that solving an equation involves more than simply following rote rules and steps. They use language such as “if ____, then ____” when explaining their solution methods and provide justification for their reasoning.

MP.4 Model with mathematics.

Students apply their new mathematical understanding to real-world problems. They learn how transformational geometry and trigonometry can be used to model the physical world.

MP.5 Use appropriate tools strategically.

Students make use of visual tools for representing geometry, such as simple patty paper, transparencies, or dynamic geometry software.

MP.6 Attend to precision.

Students develop and use precise definitions of geometric terms. They verify that a particular shape has specific properties and justify the categorization of the shape (e.g., a rhombus versus a quadrilateral).

MP.7 Look for and make use of structure.

Students construct triangles in quadrilaterals or other shapes and use congruence criteria of triangles to justify results about those shapes.

MP.8 Look for and express regularity in repeated reasoning.

Students explore rotations, reflections, and translations, noticing that some attributes of shapes (e.g., parallelism, congruency, orientation) remain the same. They develop properties of transformations by generalizing these observations.