

# High School Math Standards

## High School Math Standards Configurations

In the learning standards documents, the high school math standards are arranged in three different configurations: Integrated 1, 2, and 3; Geometry, Algebra 1, and Algebra 2; and High School Credit 3 which contains all the high school standards with the third-year-plus standards. These configurations were done at the request of high school math educators. They wanted clarification of what students should learn in their first two credits of high school math, and what standards would support students' third credit of math to align with their postsecondary plan and pathway (in keeping with [WAC 180-51-210](#)). The Office of Superintendent of Public Instruction (OSPI) collaborated with teachers from across the state to identify essential concepts every high school student should access in their high school math experience.

The Washington State K–12 Learning Standards for Mathematics (WA Math 2026) are intended to be applicable to every student's postsecondary plan or pathway in any course sequence or context in which they are learning.

## Standards in Credits 1 and 2 of High School Math

All of the standards a student needs to learn in their first two credits of high school math are in the Integrated 1 and Integrated 2 sections, and in the Geometry and Algebra 1 sections of the learning standards documents. The standards listed in these sections match what is eligible to be tested in the grade 10 Smarter Balanced Assessment for Mathematics. The sequencing of standards by course was built upon the information provided in *Common Core Standards in Math Appendix A Pathways* and was cross-referenced with national resources.

Standard FIF.4 in the original Common Core was stated as:

“For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.”

It has been revised to reflect how this standard is addressed in the first two credits of high school math specifically. For Integrated 1, 2, and Algebra 1, FIF.4 now states:

“For a function that models a relationship between two quantities in context of the relationship, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; maximums and minimums; and symmetries. Functions could be linear, exponential, or quadratic.”



This change shows that students are not expected to learn relative maximums, relative minimums, or end behavior in their first two high school math credits. Those ideas are part of polynomial functions and are meant for students to learn later, based on their future plans and High School and Beyond Plan (HSBP). Periodicity, which is part of trigonometric functions, is also included later based on a student's postsecondary goals and HSBP. Therefore, in Integrated 3 and Algebra 2 FIF.4 states:

"For any function that models a relationship between two quantities in context of the relationship, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; maximums and minimums; and symmetries. May include any families of functions, and relative maximums and minimums, end behavior, and periodicity."

This revision indicates, in the third credit of math and beyond, that any family of functions may be examined and reintroduces relative maximums and minimums, end behavior, and periodicity.

It is also important to note that *Common Core Standards in Math Appendix A* included Conditional Probability standards in Geometry, and Trigonometric Functions standards in Algebra 2/Integrated 3. The addition of data science in WA Math 2026 provides a way for examining the content standards, including statistics and probability standards through the lens of related content, including algebra and functions standards.

## Connecting and Aligning High Quality Instructional Materials

Local districts choose their own instructional materials, which can lead to different learning sequences and additional content in the first two math credits beyond the standard course arrangements. For example, a set of district-adopted instructional materials may include algebraic and geometric sequences as part of the Algebra/Integrated 1 content.

The ideas of sequences build on understandings in middle and elementary school including ratios and seeing structure in number patterns. Sequences also connect to creating and understanding linear and exponential equations, tables, and graphs. However, sequences are closely related to series where students move from finding the value of  $n^{\text{th}}$  terms (a quantitative reasoning skill that is used in the real world to predict or extrapolate a later value like step increases to salary or predicting savings or investments) to determining sums of terms. The extension of sequences to series moves from a concept that supports and amplifies linear and exponential applications to a complex idea that is present in Algebra 2/Integrated 3.

Further, the concept of sequences and series are helpful mathematical ideas, and yet the foundations of these ideas are substantively addressed in other standards that deeply explore linear and exponential functions in the first two credits of high school math. Sequences and

series are standards that could be addressed in the first two credits of high school math based on the high-quality instructional materials a district has selected.

These topics are not skills that every student must learn before graduating unless they connect to the student's HSBP. Schools have flexibility in how and when they teach standards in the first two years of high school math. However, the standards in Integrated 1 and 2, and in Algebra 1 and Geometry, show the math standards all students should have a chance to learn before taking their third math credit.

Skills and concepts taught in Algebra 2 and Integrated Math 3 are identified in WA Math 2026, which also highlight the most important standards within those courses. Students should take a third math credit that matches their HSBP. This may or may not include Algebra 2 or Integrated 3. The standards are not written as a step-by-step order for teaching. Instead, they are grouped to show connections across math ideas and describe what students should know and be able to do by the end of each course.

## **Efficient, Flexible, and Accurate Strategies in High School Math**

Throughout WA Math 2026, problem-solving strategies emphasize efficiency, flexibility, and accuracy for students solving problems. This approach is based on the research-based understandings of mathematical proficiency and supports equitable instructional practices. Fluency is often misinterpreted as speed-based memorization of facts or the rigid application of standard algorithms. Similar misinterpretations appear in high school math when there is an emphasis on shortcuts, tricks, or memorizing rules that take away from the key ideas that support learning. As a result, students remember the frustration of concepts without the meaning behind them when those concepts connect to their future careers and daily life.

While high school math involves more complex thinking, fluency still depends on students selecting efficient, flexible, and accurate strategies to solve problems and reach correct answers with understanding. Students build quantitative reasoning skills over their entire K–12 education. Early math strategies (numeracy) help them learn to solve problems accurately while using a variety of efficient and flexible approaches. In high school, these foundations continue to be essential as students consider slopes, intercepts, symmetries, zeros, and asymptotes.

An additional layer of mathematical fluency in high school is efficient, flexible, and accurate ways to interact with functions in context. The high school standards direct students to use math concepts in different ways including tables, graphs, and equations. Efficient, flexible, and accurate in this context may mean that Student A chooses to solve a system of equations using the graph of two relationships and describe the solution as it relates to the real world context conveyed by the graph, while Student B chooses to solve a system of equations through elimination or substitution with the understanding that different parts of the equations hold meaning to describe the same real world context. The solution both Student A and Student B achieve is accurate, and the strategies to communicate the relationship (table, graph, equation) are efficiently and flexibly applied.

## Prioritization in High School Standards

In WA Math 2026, some standards are prioritized. These standards represent enduring, high leverage, and readiness standards that equip students with mathematical skills and knowledge to connect ideas within and across grade levels. In high school, students are preparing for their postsecondary goals, goals that are individualized for each student. Priority standards in high school are broad ideas that will support students' quantitative reasoning and critical problem solving of mathematics in context, no matter the path students take after graduation.

For example, data analysis standards are prioritized so students can learn how to understand and question data in a data-driven society. For a priority standard like M.HS.R.ASSE.3, which states in part: "Efficiently, flexibly, and accurately rewrite expressions to equivalent forms that are suitable for the purposes of revealing and explaining a specific property about those functions," the idea of algebraically rearranging an equation to solve for a variable is mathematical thinking that is embedded in different arts, crafts, industries, and as a part of daily life as people work on household budgets and plan for a future purchase. The enduring skill in ASSE.3 that students will continue to use in their postsecondary path is the relationship between quantities that can be used for decision making, including but not limited to: how many stops for gas are needed to get to the destination of a road trip, budgeting a home project, or working in business to determine pricing that maximizes profit while maintaining affordability.

## Domain Revisions in the High School Standards

The four domains of WA Math 2026 focus on Data Analysis, Spatial Reasoning, Quantities, and Relationships within each grade and across grade levels, helping students understand math ideas in ways that match how math is used in careers and everyday experiences. The National Council of Teachers of Mathematics has stated, "Traditionally, mathematics learning is seen as a series of isolated processes intended to build upon each other. This approach often makes it difficult for students to develop their understanding of the concept or see the connections between concepts (NCTM, 2024)." The Washington State K–12 Learning Standards for Mathematics embody the opportunity to see and explore connections within and across grades through the reorganization of the standards within the four domains.

Within the new structure of four domains, districts still have the ability to align instructional materials to the Common Core as the root coding within the original standards remains. For example, M.HS.S.ID.A.3, a measurement and data standard concerning line plots of data sets is now M.HS.DA.SID.3 to reflect its interconnection with other standards within data analysis (bold added to show the similarity in the codes).

Now, more than ever, students need not only to develop mathematical and data skills that allow them to calculate and compute, but they also need to be able to ask meaningful questions and evaluate their findings. For this reason, and to prepare Washington students for diverse careers and postsecondary goals that are not exclusively in service of Calculus, the domains across K–12 have been changed to connect broad concepts students will interact with over their K–12 math

career. This shift connects related math concepts that were separated in the Common Core mathematics standards and equips students with deeper mathematical fluency and reasoning strategies. Teaching math as interconnected concepts increases flexible problem solving, and critical examination of mathematics and data that are an ever-present element of society.