

## Math 2 / Math Academy Comparison

Scotts Valley High School offers two different options for advanced math placement for freshmen.

Course Content	Math 2	Math Academy 1
<b>Topics</b>	First semester covers math fundamentals in depth, followed by geometry topics and right-triangle trigonometry. Second semester focuses on quadratics, followed by a chapter on probability.	First semester quickly covers math fundamentals and then covers functions (including exponential and logarithmic) and quadratics in depth, followed by right-triangle trig. Second semester is not algebra-based, covering probability, spreadsheet coding, statistics, and research methods.
<b>Math Fundamentals</b>	Before starting Math 2, students should have fluency and understanding of the majority of the fundamentals and at least a basic understanding of most of the rest. However, these are covered in depth in the first two chapters.	Before starting Math Academy, students should have full algebraic fluency and mastery of most or all of the fundamentals. The fundamentals are reviewed at the start of the year, but at a rapid pace.
<b>Instruction</b>	All instruction is provided in class.	There is direct instruction and exploratory learning in class. Some content is provided as online or textbook learning at home and is covered in less detail in class.
<b>Homework</b>	Homework assignments are infrequent and/or are largely done in class.	There are usually one to three homework assignments per week, and they are not started in class.
<b>Projects</b>	There are no major projects.	Each chapter has a substantial application students do outside of class, alone or in small groups.
<b>Most likely semester grades</b>	Students who have felt successful in Math 1 in 8th grade are thoroughly prepared for Math 2 and should get an A with reasonable effort. Students who did not feel successful in Math 1 in 8th grade, or who haven't taken Math 1, could end up with any grade.	Students who have felt successful in Math 1 in 8th grade are prepared for Math Academy and should get an A or a B with reasonable effort. Students who did not feel successful in Math 1 in 8th grade, or who haven't taken Math 1, are likely to get a C or lower.

Course Approach	Math 2	Math Academy 1
<b>Concepts vs Procedures</b>	The focus is on procedures. The concepts behind the procedures are explained in detail but are not assessed to the same extent.	The focus is on concepts and reasoning. Most procedures are taught in detail, but students are expected to derive some procedures on their own from the concepts. Assessments have a significant conceptual component.
<b>Rigor</b>	Algebraic notation is treated rigorously. Other than this, the level of rigor is kept moderate in order to be accessible to all students who have completed the previous course.	The level of rigor is very high.
<b>What makes it advanced</b>	Math 2 is a standard-level sophomore course. Freshman taking Math 2 are advanced in terms of timeline, but advanced content will not take place until Honors Math 3 the following year.	Math Academy is taught at a highly advanced level and relies heavily on critical thinking. The concepts and rigor (but not necessarily the content) are more challenging than other math courses besides IB Math HL.
<b>Most likely high school pathway</b>	Math 2 → Honors Math 3 → IB Math SL → Statistics & Research Methods	Math Academy 1 → Math Academy 2 → IB Math HL 1 → IB Math HL 2