

**Summer on the Hill**  
**Mathematics Curriculum**

Grade	Curriculum Units
<p><b>Grades 3, 4, and 5</b></p>	<p><b><i>The goals of SOH's 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grades mathematics curriculum, which is based on the Horace Mann curriculum, are to help children develop their ability to think, reason, and compute mathematically through a sequential range of learning experiences and a broad array of content.</i></b> The Sadlier-Oxford program used by SOH covers the following areas of study:</p> <ul style="list-style-type: none"> <li>○ Number and Numeration,</li> <li>○ Operations and Computation,</li> <li>○ Geometry and Measurement,</li> <li>○ Probability and Statistics, and</li> <li>○ Problem Solving.</li> </ul> <p>Teachers introduce and reinforce basic concepts such as</p> <ul style="list-style-type: none"> <li>○ computational skills in the four math operations</li> <li>○ reading, writing, and understanding place value of numerals through the millions,</li> <li>○ adding and subtracting fractions with like denominators, and</li> <li>○ engaging in mental computation.</li> </ul> <p>Geometry and measurement units move from the study of points, lines, and line segments in 3<sup>rd</sup> grade to finding the perimeters of polygons and determining the area of squares and rectangles in 5<sup>th</sup> grade. Students learn to organize data in chart, table, and graph form. Throughout the years, students learn strategies for solving word problems and engaging in critical thinking and estimation activities.</p> <p>The mathematics program aims to strike a balance between computational skills and topics focusing on conceptual understanding and problem solving techniques. Hands-on experiences encourage an understanding of the concepts.</p>
<p><b>Grades 6, 7, and 8</b></p>	<p>SOH's middle school math program, also based on Horace Mann's curriculum, is designed to increase students' skills and understanding, and prepare students for more advanced high school math. <b><i>The goals of the 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade math curriculum are to give students a solid foundation in arithmetic and algebra, integrated with other areas of mathematics including geometry, statistics, probability, and data analysis.</i></b> The middle school math program emphasizes teaching students to apply concepts to new situations and to solve a range of problems.</p> <p><b>Grade 6:</b> The emphasis is on integrating students' current math knowledge with new concepts as they progress from arithmetic to algebra. The curriculum includes operations, computation, problem-solving with fractions and percent, geometry and metric conversion, probability in tables, charts, and graphs, and critical thinking.</p> <p><b>Grade 7:</b> Teachers review computation with numbers, fractions, decimals, and word problems involving percentages, and then introduce variable expressions. Students learn to solve one and two-step number sentences with variables, and practice algebraic problem-solving using critical thinking strategies.</p> <p><b>Grade 8:</b> Topics such as functions, coordinate graphing, and polynomials, are taught on a more abstract level. Additional topics include: factoring, quadratic equations, algebraic fractions, inequalities, irrational numbers, and the quadratic formula. Word problems and critical thinking strategies are a mainstay of the course.</p>