



OSSD Scope & Sequence: Math 6

Scope & Sequence (S&S) is an overview of the skills and content covered in your curriculum at each class/instructional level. It provides an overview of the length of time (scope) and the order (sequence) in which key content will be taught.

Grade Level(s):

Content Area and/or Course Title:

Unit Title	Time/Term	Focus Standards and Unit Outcomes
		<p>Standards from the Vermont Content Areas: Mathematics, as delivered by Carnegie Learning.</p> <p>Essential Standards are indicated in blue font.</p>
Composing and Decomposing	34 sessions	<p><u>Factors and Multiples:</u> In this topic, students extend their knowledge of area and number to compose and decompose areas that represent numeric expressions. They decompose numbers into factors and apply the Distributive Property to compute products efficiently. Students use the Distributive Property to express sums of two numbers as a product of two factors. They then use their knowledge of factors to determine the greatest common factors and least common multiples.</p> <p><u>Area, Volume, and Surface Area:</u> In this topic, students investigate how to compose or decompose different shapes into rectangles. They use what they know about the area of rectangles to develop the area formulas for parallelograms, triangles, trapezoids, and composite figures.</p> <p><u>Decimals:</u> In this topic, students begin by reviewing number skills developed in previous grades: plotting decimals on a number line and comparing and ordering decimal values. They then use place value strategies to establish the standard algorithm for adding and subtracting decimals.</p> <p>5.NF.4, 5.NF.5a, 5.NF.6, 6.NS.1, 6.NS.4, 6.EE.1, 6.EE.2b, 6.EE.3, 6.G.1, 6.G.2, 6.G.4, 5.NBT.1, 5.NBT.3b, 6.NS.2, 6.NS.3,</p>
Relating Quantities	36 sessions	<p><u>Ratios:</u> In this topic, students engage in high-level representational and definitional thinking about ratios. The focus is on ratio reasoning and preparing students to apply this reasoning in future topics and courses. They begin by associating ratios with multiplicative</p>

		<p>comparisons, contrasting them with additive comparisons. Students learn about quantitative relationships represented by ratios, which they write in different forms. They then consider percents as a special type of ratio: a rate per 100.</p> <p><u>Percents:</u> In this topic, students transition from general ratio reasoning to focusing on one type of ratio. Students define a percent multiple ways: a ratio in which the whole is 100; a fraction with a denominator of 100; and a decimal to the hundredths place.</p> <p><u>Unit Rates and Conversions:</u> In this topic, students explore unit rates using a previously learned skill: measurement conversions. They learn that converting within and between systems of measurement involves conversion rates, another special type of ratio. Students use their knowledge of multiplicative and reasoning to convert within and between measurement systems. They solve various unit rate problems. Students analyze real-world situations and identify unit rates from tables and graphs.</p> <p>6.RP.1, 6.RP.3, 6.RP.3a, 6.RP.3c, 6.RP.2, 6.RP.3b, 6.RP.3d,</p>
<p>Determining Unknown Quantities</p>	<p>33 sessions</p>	<p><u>Expressions:</u> In this topic, students build on their existing knowledge of operations and geometric measurement to develop their understanding of variables and algebraic expressions. Students formalize their understanding of powers as repeated multiplication and evaluate expressions involving whole-number exponents, expanding their application of the Order of Operations to include exponents.</p> <p><u>Equations:</u> In this topic, students need to understand solving an equation as a process of reasoning to determine what numbers make equations true. They use what they learned in Expressions to understand the equals sign as an indicator of a relationship, not as an operator. Students use a double number line to visualize an equation as two equivalent expressions and create additional equivalent relationships.</p> <p><u>Graphing Quantitative Relationships:</u> In this topic, students use multiple representations to model and solve problems. Focused on graphical representations, this topic is the culmination of the module, requiring students to use prior knowledge of graphing in the first quadrant of the coordinate plane and their new knowledge from the Expressions and Equations topics.</p> <p>6.EE.1, 6.EE.2, 6.EE.2a, 6.EE.2b, 6.EE.2c, 6.EE.3, 6.EE.4, 6.EE.6, 6.EE.7, 6.EE.5, 6.EE.8, 6.EE.9</p>
<p>Moving Beyond Positive Quantities</p>	<p>17 sessions</p>	<p><u>Signed Numbers:</u> In this topic, students explore the entire system of rational numbers, including negative rational numbers. Through this topic's activities, they will see negative rational numbers as an extension of prior</p>

		<p>learning about number systems.</p> <p><u>The Four Quadrants:</u> In this topic, students explore the four-quadrant coordinate plane. They use reflections of the first quadrant on patty paper and their knowledge of the rational number line to build a fourquadrant coordinate plane. Students look for patterns in the signs of the ordered pairs in each quadrant and for ordered pairs that lie along the vertical and horizontal axes.</p> <p>6.NS.5, 6.NS.6a, 6.NS.6c, 6.NS.7a, 6.NS.7b, 6.NS.7c, 6.NS.7d, 6.NS.6, 6.NS.C.5, 6.NS.C.6a, 6.EE.8, 6.NS.C.7b, 6.NS.6b, 6.NS.8, 6.G.3, 6.NS.C.8, 6.EE.C.9, 6.NS.C.6b, 6.NS.C.6c, 6.EE.9, 6.G.A.3</p>
<p>Describing Variability of Quantities</p>	<p>19 sessions</p>	<p><u>The Statistical Process:</u> In this topic, students learn a statistical problem-solving process: formulate questions, collect data, analyze data, and interpret the results. They will use this process throughout their studies of statistics, increasing the complexity of each step of the process as they develop their statistical literacy.</p> <p><u>Numeric Summaries of Data:</u> In this topic, students learn about measures of central tendency and measures of variability and when each is the most appropriate to describe a data set. Students may have an informal or intuitive understanding of "average," but this topic formalizes the ideas of the mean and median of a data set. They learn that the median is the middle value in a set of data and that they can think of the mean as a fair share or balance point of a data set.</p> <p>6.SP.1, 6.SP.2, 6.SP.4, 6.SP.5a, 6.SP.5b, 6.SP.5c, 6.SP.3, 6.SP.5, 6.SP.5d</p>