

Subject	8th Grade Mathematics
Nine Week	First 9 Weeks
Standard	<p><u>8.NS.A.1</u>: Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.</p> <p><u>8.NS.A.2</u>: Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2).</p> <p><u>8.EE.A.1</u>: Know and apply the properties of integer exponents to generate equivalent numerical expressions.</p> <p><u>8.EE.A.3</u>: Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.</p> <p><u>8.EE.A.4</u>: Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.</p> <p><u>8.G.B.7</u>: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.</p> <p><u>8.G.C.9</u>: Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.</p> <p><u>8.EE.A.2</u> Use square roots and cube root symbols to represent solutions to equations of the form.</p>
Objectives	<p>8.NS.1</p> <ul style="list-style-type: none"> • Define rational and irrational. • Convert fractions to decimals, vice versa. • Take a repeating decimal and make into a fraction. <p>8.NS.2</p> <ul style="list-style-type: none"> • Define truncating and use in approximation of location on a number line. • Estimate the value of an irrational. <p>8.EE.1</p> <ul style="list-style-type: none"> • Expanded form (repeated factors) • Negative exponent puts base number into the denominator simultaneously making exponent positive. The numerator is always 1. • Negative exponents mean to divide while positive means to multiply. • Simplify a fraction in prime factorization <p>8.EE.3</p> <ul style="list-style-type: none"> • Use single digit coefficient. • Converting between standard form and scientific notation, vice versa.

	<ul style="list-style-type: none"> • Discover how to compare numbers while in scientific notation (move decimal point while multiplying or dividing by a power of 10) • Estimating and understanding an increase or decrease of the coefficients and the powers of 10. Performing a mathematical operation with those increases or decreases. <p>8.EE.4</p> <ul style="list-style-type: none"> • Ability to convert from standard form to scientific notation, vice versa for both very large and very small numbers. • Interpret word problems to apply the appropriate operation. <p>8.G.7</p> <ul style="list-style-type: none"> • Know the Pythagorean Theorem. • Understand the legs and hypotenuse of the right triangle. • Know how to solve the Pythagorean Theorem for any missing side. • Solve real-world applications of the Pythagorean Theorem. <p>8.G.9</p> <ul style="list-style-type: none"> • Calculate the 3D volume of cones, cylinders, and spheres. • Solve real-world problems involving volume. <p>8.EE.2</p> <ul style="list-style-type: none"> • Identify perfect squares 1 – 225. • Apply square rooting/cube rooting to word problems.
Topics	<p>* Rational and Irrational Numbers * Sets of Real Numbers * Ordering Real Numbers * Finding Square and Cube Roots of Numbers * Integer Exponents * Scientific Notation with Positive Powers of 10 * Scientific Notation with Negative Powers of 10 * Operations with Scientific Notation * The Pythagorean Theorem * Volume of Cylinders, Cones, and Spheres</p>
Major Assignment/s	<p>-Exponent Rules Discovery Packet -Students use discovery to learn the Rules of Exponents. This is a 2 day group activity that is completed in class.</p> <p>-Intergalactic Tourism (Scientific Notation Activity)</p> <p>-- In "Planetary Distances" students use subtraction of scientific notation to find the distance between planets using their distance from the sun.</p> <p>-- In "Need for Speed" students will practice using scientific notation in distance, rate and time problems. This will require multiplying and dividing numbers in scientific notation.</p> <p>-- In "My Space Vacation" students will tie all of the skills together. Students will need to multiply, divide, add and subtract numbers in scientific notation. Students are given travel information for four different alien races and will use the data in an attempt to learn more about the aliens.</p>

	<p>-Frequent Performance Tasks (Topics will be chosen by standard.)</p> <p>-Students apply math knowledge to real-world contexts in Performance Tasks. These tasks come from multiple sources, including but not limited to Amplify, the textbook, and TNCore.</p>
<p>Instructional Materials</p>	<p>Handouts:</p> <p>All Things Algebra: Algebra 1 Entire Curriculum https://www.teacherspayteachers.com/Product/Algebra-1-Curriculum-749721</p> <p>Engage NY 8th Grade Math Module 7 (Rational and Irrational Topics)</p> <p>Engage NY 8th Grade Math Module 1 (Exponents and Scientific Notation Topics)</p> <p>Real-Life Unit Videos:</p> <p>my.hrw.com (Online Textbook) [Account Required] Beginning of Module Videos for Modules 1 and 2 will be shown in 1st 9 weeks.</p>
<p>Assessment(s)</p>	<p>Diagnostic Test Part 1 and Part 2</p> <p>Module 1 Quiz</p> <p>Module 2 Quiz</p> <p>Common Assessment 1</p> <p>Daily CFUs (check for understanding) (i.e. Exit Tickets)</p>
<p>Field Trip/s</p>	<p>N/A</p>