



Mathematics Grade 8 Number (N)				
Outcome	1 – Little Evidence With help, I understand parts of the simpler ideas and do a few of the simpler skills.	2 – Partial Evidence I understand the simpler ideas and can do the simpler skills. I am working on the more complex ideas and skills.	3 – Sufficient Evidence I understand the more complex ideas and can master the complex skills that are taught in class. <b>I achieve the outcome.</b>	4- Extensive Evidence I have a deep understanding of the complex ideas, and I can use the skills I have learned in situations that were not taught in class.
<b>8N.1</b> <b>I can demonstrate understanding of the square and principle square root of whole numbers concretely or pictorially and symbolically.</b> <b>[CN, ME, R, T, V]</b>	<ul style="list-style-type: none"> <li>• <b>With help</b>, I can represent the square <b>OR</b> square root of whole numbers using objects or pictures.</li> </ul>	<ul style="list-style-type: none"> <li>• I can recognize and represent the square <b>OR</b> square root of whole numbers using objects or pictures <b>AND</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can represent the square <b>AND</b> square root of whole numbers using objects <b>OR</b> pictures <b>AND</b> symbols, and explain my thinking.</li> </ul>	<ul style="list-style-type: none"> <li>• I can extend my understanding of squares <b>OR</b> square roots to include <b>representing</b> the square <b>OR</b> square root of <b>some positive rational numbers</b> and <b>explain my thinking.</b></li> </ul>
	<ul style="list-style-type: none"> <li>• <b>With help</b>, I can apply <b>estimation strategies</b> to determine the approximate values for square roots.</li> </ul>	<ul style="list-style-type: none"> <li>• I can apply <b>estimation strategies</b> to determine the approximate values for square roots.</li> </ul>	<ul style="list-style-type: none"> <li>• I can apply <b>estimation strategies</b> to determine the approximate values for square roots, <b>and explain my thinking.</b></li> </ul>	<ul style="list-style-type: none"> <li>• I can apply <b>estimation strategies</b> to determine the approximate values for square roots of <b>some positive rational numbers</b> and <b>explain my thinking.</b></li> </ul>
	<ul style="list-style-type: none"> <li>• <b>With help</b>, I can determine square roots of perfect squares.</li> </ul>	<ul style="list-style-type: none"> <li>• I can determine square roots of whole numbers with or without the use of technology.</li> </ul>	<ul style="list-style-type: none"> <li>• I can <b>determine the square root of whole numbers</b> with or without the use of technology.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show the application of square roots in real life situations.</li> </ul>
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<b>8N.2</b> <b>I can expand and demonstrate understanding of percents greater than or equal to 100% (including fractional and decimal percents) concretely, pictorially, and symbolically.</b> <b>[CN, PS, R, V]</b>	<ul style="list-style-type: none"> <li>• <b>With help</b>, I can represent the number, decimal or fraction of a percent between 1% and 100%.</li> </ul>	<ul style="list-style-type: none"> <li>• I can <b>represent percentages</b> <math>\neq 100\%</math> using objects, pictures <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can <b>solve problems</b> involving percentages <math>\neq 100\%</math> <b>and explain my thinking.</b></li> </ul>	<ul style="list-style-type: none"> <li>• I can solve <b>complex, multi-step</b> problems using analysis and decision making based upon percentages.</li> </ul>
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<b>8N.3</b> <b>I can demonstrate understanding of rates, ratios, and proportional reasoning concretely, pictorially, and symbolically. [C, CN, PS, R, V]</b>	<ul style="list-style-type: none"> <li>I can write the ratios <b>AND</b> rates using numbers <b>AND</b> symbols from a concrete, physical, or pictorial representation.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>recognize, write and simplify ratios AND rates</b> using numbers and symbols from simple word problems.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>solve</b> problems involving ratios <b>AND</b> rates from real life situations in various forms using proportional reasoning.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>recognize, create</b> and solve problems from personal situations using ratios, rates and proportional reasoning.</li> </ul>
	<ul style="list-style-type: none"> <li><b>With help</b>, I can <b>identify the difference between ratios and rates</b> in familiar situations.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>identify and explain the difference between ratios and rates</b> in familiar situations.</li> </ul>	<ul style="list-style-type: none"> <li>I can identify and explain <b>when a relationship involving ratios and rates can and cannot be expressed in fraction, percent or probability form.</b></li> </ul>	<ul style="list-style-type: none"> <li>I can, using personal situations, verify or contradict the use of ratios and rates in the given situation.</li> </ul>
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<b>8N.4</b> <b>I can demonstrate understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially, and symbolically.</b> <b>[C, CN, ME, PS]</b>	<ul style="list-style-type: none"> <li>• <b>With help</b>, I can show how to multiply common fractions using objects, pictures, <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to multiply common fractions using objects, pictures, <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to <b>multiply common fractions</b> using objects, pictures, <b>AND</b> symbols, <b>use simplification strategies</b>, and <b>explain my reasoning</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to <b>efficiently</b> multiply common fractions using objects, pictures, and symbols and explain my reasoning.</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>With help</b>, I can show how to multiply mixed numbers using objects, pictures, <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to multiply mixed numbers using objects, pictures, <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to <b>multiply mixed numbers</b> using objects, pictures, <b>AND</b> symbols, <b>use simplification strategies</b>, and explain my reasoning.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to <b>efficiently</b> multiply mixed numbers using objects, pictures, and symbols.</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>With help</b>, I can show how to divide common fractions using objects, pictures, <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to divide common fractions using objects, pictures, <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to <b>divide common fractions</b> using objects, pictures, <b>AND</b> symbols, <b>use simplification strategies</b>, and explain my reasoning.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to <b>efficiently</b> divide common fractions using objects, pictures, and symbols.</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>With help</b>, I can show how to divide mixed numbers using objects, pictures, <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to divide mixed numbers using objects, pictures, <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to divide mixed numbers using objects, pictures, <b>AND</b> symbols, <b>use simplification strategies</b>, and explain my reasoning.</li> </ul>	<ul style="list-style-type: none"> <li>• I can show how to <b>efficiently</b> divide mixed numbers using objects, pictures, and symbols.</li> </ul>



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	<ul style="list-style-type: none"><li>With help, I can determine the important information in a problem involving fractions.</li></ul>	<ul style="list-style-type: none"><li>I can <b>use symbols to represent significant quantities and operations</b> in a problem.</li></ul>	<ul style="list-style-type: none"><li>I can <b>solve word problems</b> involving fractions.</li></ul>	<ul style="list-style-type: none"><li>I can solve word problems involving fractions, <b>AND</b> debate generalities such as “multiplication always results in a larger quantity and division always results in a smaller quantity.”</li></ul>
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<b>8N.5</b> <b>I can demonstrate understanding of multiplication and division of integers concretely, pictorially, and symbolically.</b> <b>[C, CN, PS, R, V]</b>	<ul style="list-style-type: none"> <li>I can <b>identify the operation needed</b> in an integer problem.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>solve integer problems</b> using all four operations.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>create and solve</b> an integer problem, including problems using the order of operations.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>create and solve complex multi-step integer problems</b>, including problems using the order of operations.</li> </ul>
	<ul style="list-style-type: none"> <li><b>With help</b> I can recognize the patterns for the sign of integer product <b>OR</b> quotient.</li> </ul>	<ul style="list-style-type: none"> <li>I can recognize the patterns for the sign of integer product <b>OR</b> quotient.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>recognize the patterns</b> for the sign of integer product <b>AND</b> quotient.</li> </ul>	<ul style="list-style-type: none"> <li>I can recognize and <b>explain</b> the patterns for the sign of integer product <b>AND</b> quotient.</li> </ul>
	<ul style="list-style-type: none"> <li>With help I can divide integers using pictures, materials <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>I can divide integers using pictures, materials <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>divide integers</b> using pictures, materials <b>AND</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>apply division of integers to complex problems.</b></li> </ul>
	<ul style="list-style-type: none"> <li>With help I can multiply integers using pictures, materials <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>I can multiply integers using pictures, materials <b>OR</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>multiply</b> integers using pictures, materials <b>AND</b> symbols.</li> </ul>	<ul style="list-style-type: none"> <li>I can <b>apply multiplication of integers to complex problems.</b></li> </ul>
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