





# Grade Eight – Suggested Math Instructional Resources










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## Number Sense






([Number](#) represents, describes, and compares the quantities of ratios, rates, and percents.)

Curricular Content	Curricular Competencies (The student can...)	Online Resources	Print Resources (all are available in the DLC or in schools)
Perfect squares and cubes	<p>Represent perfect squares and cubes using colour tiles, pictures, or multi-link cubes</p> <p>Determine if a number is a perfect square or cube using prime factorization.</p>	<p> <a href="#">Painted Cube</a></p> <p> <a href="#">Exponential Functions - Desmos</a></p>	<p><i>Elementary and Middle School Mathematics</i> (Van de Walle, 2022)</p> <ul style="list-style-type: none"> <li>pp. 592-597</li> </ul>
Square and cube roots	<p>estimate the square root of numbers</p> <p>find the square root of numbers</p> <p>find the cube root of numbers</p>	<p> <a href="#">Exponents and Square Roots</a></p> <p> <a href="#">Open Middle Activities</a></p>	<p><i>Radical Math</i> (Felling, 2021)</p> <ul style="list-style-type: none"> <li>Radical Roots (p. 57)</li> </ul> <p><i>Elementary and Middle School Mathematics</i> (Van de Walle, 2022)</p> <ul style="list-style-type: none"> <li>pp. 614-656</li> </ul>

Curricular Content	Curricular Competencies (The student can...)	Online Resources	Print Resources (all are available in the DLC or in schools)
Percent less than 1 and greater than 100 (decimal and fractional percents)	Use a variety of models to represent percent  Solve percentage problems utilizing multiple strategies	 <a href="#">Percent - Desmos</a>   <a href="#">Percent Change</a>   <a href="#">Open Middle Activities</a>	<i>Number Talks: Fractions, Decimals and Percentages</i> (Parrish, 2016) <ul style="list-style-type: none"> <li>• pp. 130-131</li> <li>• pp. 122-124</li> </ul>
Proportional reasoning (rates, ratio, proportions, and percent)	Solve problems involving rate, unit rate, percentage of, tax and discounts	 <a href="#">Surrey Video Series</a>   <a href="#">Proportional Reasoning - Desmos</a>   <a href="#">Rates and Ratios</a>   <a href="#">Proportions</a>   <a href="#">Interactive Simulation</a>   <a href="#">Lesson Series</a>	<i>Elementary and Middle School Mathematics</i> (Van de Walle, 2022) <ul style="list-style-type: none"> <li>• Chapter 17 (pp. 429-452)</li> </ul> <i>Good Questions 5-8</i> (Fullerton, 2018)  <i>Proportional Reasoning</i> (Fullerton, 2019) <ul style="list-style-type: none"> <li>• pp. 154-186</li> </ul>











## Computational Fluency

(Computational [fluency](#) and flexibility extend to operations with fractions.)

Curricular Content	Curricular Competencies (The student can...)	Online Resources	Print Resources (all are available in the DLC or in schools)
Fractions (addition, subtraction, multiplication, division, and order of operations)	Solve problems using operations with fractions  Use a variety of strategies and models to represent operations with fractions	<p> <a href="#">Surrey Video Series</a></p> <p> <a href="#">Fractions - Desmos</a></p> <p> <a href="#">Multiplying Fractions</a></p> <p> <a href="#">Open Middle Activities</a></p> <p> <a href="#">Lesson Series</a></p>	<p><i>Radical Math</i> (Felling, 2021)</p> <ul style="list-style-type: none"> <li>Fractions and Ratios (pp. 102-117)</li> </ul> <p><i>Elementary and Middle School Mathematics</i> (Van de Walle, 2022)</p> <ul style="list-style-type: none"> <li>Chapter 15 (pp. 367-398)</li> </ul> <p><i>Number Talks: Fractions, Decimals and Percentages</i> (Parrish, 2016)</p> <ul style="list-style-type: none"> <li>Chapter 6 Addition (pp. 135-178)</li> <li>Chapter 7 Subtraction (pp. 179-218)</li> <li>Chapter 8 Subtraction (pp. 219-272)</li> <li>Chapter 9 Subtraction (pp. 273-315)</li> </ul> <p><i>Proportional Reasoning</i> (Fullerton, 2019)</p> <ul style="list-style-type: none"> <li>Addition &amp; Subtraction (pp. 135-153)</li> <li>Multiplication &amp; Division (pp. 239-251)</li> </ul>
























## Patterning

([Discrete linear relationships](#) can be represented in many connected ways and used to identify and make generalizations.)

<p>Discrete linear relations (extended to larger numbers, limited to integers)</p>	<p>Represent two-variable discrete linear relations in a variety of ways (concrete, table of values, graphs)</p>	<p> <a href="#">Which One Doesn't Belong</a></p> <p> <a href="#">Surrey Video Series</a></p> <p> <a href="#">Mathematical Mindsets Algebra</a></p>	<p><i>Radical Math</i> (Felling, 2021)</p> <ul style="list-style-type: none"> <li>Linear Equations (pp. 67-72)</li> <li>Coordinate Geometry (pp. 74-78)</li> </ul> <p><i>Elementary and Middle School Mathematics</i> (Van de Walle, 2022)</p> <ul style="list-style-type: none"> <li>pp. 293-331</li> </ul> <p>Algebraic Thinking (Fullerton)</p> <ul style="list-style-type: none"> <li>pp. 43-76</li> <li>pp. 154-165</li> </ul>
<p>Expressions - writing and evaluating using substitution</p>	<p>use an expression to describe a relationship evaluate expressions (e.g. <math>0.5n - 3n + 25</math>, if <math>n = 14</math>)</p>	<p> <a href="#">When Seagull Stole the Sun</a></p> <p> <a href="#">Linear Functions - Desmos</a></p> <p> <a href="#">Lesson Series</a></p>	<p><i>Elementary and Middle School Mathematics</i> (Van de Walle, 2022)</p> <ul style="list-style-type: none"> <li>pp. 293-331</li> </ul> <p><i>Algebraic Thinking</i> (Fullerton, 2020)</p> <ul style="list-style-type: none"> <li>pp. 62-75</li> </ul>
<p>Two-step equations with integer coefficients, constants, and solutions</p>	<p>solve and verify equations (eg. <math>3x - 4 = -12</math>) model the preservation of equality (e.g., using a balance, manipulatives, algebra tiles, diagrams)</p>	<p> <a href="#">Solving Basic Equations</a></p> <p> <a href="#">Open Middle Activities</a></p> <p> <a href="#">Interactive Simulation</a></p> <p> <a href="#">Lesson Series</a></p>	<p><i>Elementary and Middle School Mathematics</i> (Van de Walle, 2022)</p> <ul style="list-style-type: none"> <li>pp. 293-331</li> </ul> <p><i>Algebraic Thinking</i> (Fullerton, 2020)</p> <ul style="list-style-type: none"> <li>pp. 103-115</li> <li>pp. 130-148</li> </ul>



## General Resources

General Strategies and Routines	 <a href="#">Which One Doesn't Belong</a>  <a href="#">Interactive Simulations</a>  <a href="#">Math Applications</a>	 <a href="#">Esti-Mysteries</a>  <a href="#">The Estimation Clipboard</a>  <a href="#">Cube Conversations</a>	 <a href="#">Week of Inspirational Math</a>  <a href="#">Building Thinking Classrooms</a>  <a href="#">Estimation</a>
Building Our Understanding	 <a href="#">Surrey Video Series</a>  <a href="#">Concreteness Fading</a>	 <a href="#">Spiraling the Curriculum</a>  <a href="#">Progression of Fractions</a>	 <a href="#">Progression of Multiplication</a>  <a href="#">Progression of Division</a>
Classroom Assessment		 <a href="#">Island Numeracy Assessment</a>	 <a href="#">Assessing Curricular Competencies</a>
Indigenous Connections	 <a href="#">Coast Metro Math Project</a>	 <a href="#">When Seagull Stole the Sun</a>	 <a href="#">BC Numeracy Network</a>
Planning	 <a href="#">BC Math Grade 8</a>	 <a href="#">Critical Concepts Map</a>	 <a href="#">Planning - Year, Week, Day</a>

**Focusing on the content areas of number sense and computational fluency in this document is intentional as these are foundational skills that can be spiraled throughout the rest of the content standards while being grounded in the curricular competencies.**