Grade Eight – Suggested Math Instructional Resources

Access Digital copy here.

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	Represent perfect squares and cubes using colour tiles, pictures, or multi-link cubes Determine if a number is a perfect square or cube using prime factorization.	🔢 [Painted Cube](#) 🔢 [Exponential Functions - Desmos](#)	*Elementary and Middle School Mathematics* (Van de Walle, 2022) • pp. 592-597
Square and cube roots	estimate the square root of numbers find the square root of numbers find the cube root of numbers	▶ [Exponents and Square Roots](#) 🔢 [Open Middle Activities](#)	*Radical Math* (Felling, 2021) • Radical Roots (p. 57) *Elementary and Middle School Mathematics* (Van de Walle, 2022) • pp. 614-656

▶ video   ☀ teacher backgrounder   🔢 learning activity   🖨 printable   ⚙ strategies & routines   👤 device required

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	Percent - Desmos Percent Change Open Middle Activities	*Number Talks: Fractions, Decimals and Percentages* (Parrish, 2016) • pp. 130-131 • pp. 122-124
Proportional reasoning (rates, ratio, proportions, and percent)	Solve problems involving rate, unit rate, percentage of, tax and discounts	Surrey Video Series Proportional Reasoning - Desmos Rates and Ratios Proportions Interactive Simulation Lesson Series	*Elementary and Middle School Mathematics* (Van de Walle, 2022) • Chapter 17 (pp. 429-452) *Good Questions 5-8* (Fullerton, 2018) *Proportional Reasoning* (Fullerton, 2019) • pp. 154-186

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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	▶ [Surrey Video Series](#) ⊞ [Fractions - Desmos](#) ▶ [Multiplying Fractions](#) ⊞ [Open Middle Activities](#) ⊞ [Lesson Series](#)	*Radical Math* (Felling, 2021) • Fractions and Ratios (pp. 102-117) *Elementary and Middle School Mathematics* (Van de Walle, 2022) • Chapter 15 (pp. 367-398) *Number Talks: Fractions, Decimals and Percentages* (Parrish, 2016) • Chapter 6 Addition (pp. 135-178) • Chapter 7 Subtraction (pp. 179-218) • Chapter 8 Subtraction (pp. 219-272) • Chapter 9 Subtraction (pp. 273-315) *Proportional Reasoning* (Fullerton, 2019) • Addition & Subtraction (pp. 135-153) • Multiplication & Division (pp. 239-251)

▶ video   ☀ teacher backgrounder   ⊞ learning activity   🖶 printable   ⚙ strategies & routines   👤 device required

Patterning

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

Discrete linear relations (extended to larger numbers, limited to integers)	Represent two-variable discrete linear relations in a variety of ways (concrete, table of values, graphs)	🔢 Which One Doesn't Belong ▶ Surrey Video Series 🔢 Mathematical Mindsets Algebra	*Radical Math* (Felling, 2021) • Linear Equations (pp. 67-72) • Coordinate Geometry (pp. 74-78) *Elementary and Middle School Mathematics* (Van de Walle, 2022) • pp. 293-331 Algebraic Thinking (Fullerton) • pp. 43-76 • pp. 154-165
Expressions - writing and evaluating using substitution	use an expression to describe a relationship evaluate expressions (eg. 0.5n − 3n + 25, if n = 14)	🔢 When Seagull Stole the Sun 🔢 Linear Functions - Desmos 🔢 Lesson Series	*Elementary and Middle School Mathematics* (Van de Walle, 2022) • pp. 293-331 *Algebraic Thinking* (Fullerton, 2020) • pp. 62-75
Two-step equations with integer coefficients, constants, and solutions	solve and verify equations (eg. $3x − 4 = −12$) model the preservation of equality (e.g., using a balance, manipulatives, algebra tiles, diagrams)	▶ Solving Basic Equations 🔢 Open Middle Activities 👤 Interactive Simulation 🔢 Lesson Series	*Elementary and Middle School Mathematics* (Van de Walle, 2022) • pp. 293-331 *Algebraic Thinking* (Fullerton, 2020) • pp. 103-115 • pp. 130-148

▶ video 🔅 teacher backgrounder 🔢 learning activity 🖨 printable ⚙ strategies & routines 👤 device required

General Resources

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

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.

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