COWICHAN VALLEY School District

Grade Four – Suggested Math Instructional Resources

Access Digital copy here.

Number Sense

(Fractions and decimals are types of numbers that can represent quantities.)

Curricular Content	Curricular Competencies (The student can…)	Online Resources	Print Resources (all are available in the DLC or in schools)
Place value understanding to 10 000	**Represent** and **decompose** numbers to 10 000. Count in various ways (by various multiples, starting points, increasing/decreasing) with numbers up to 10 000. **Compare** and order numbers to 10 000 (put numbers in **sequence,** be able to tell what number is 5, 10, 100, and 1000 greater/less than another number).	Number Concepts Grades 3 - 5 Skip counting	*Place Value in Intermediate (*Fullerton, 2017) • Big Numbers: Giant stick and Strange Facts, p. 159 • Metric Madness 2: From km to kg, p. 164 • Ten times more: Number lines Gone Crazy p. 170 *All Hands on Deck (*Felling, 2022) • Place Value Games (Including decimals) pp 67-106 *Elementary and Middle School Mathematics* (Van de Walle, 2022) • pp. 332-338 *Number Talks – Fractions, Decimals and Percentages* (Parrish, 2016) • Chapter 4 – (pp. 72-82)

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Curricular Content	Curricular Competencies (The student can…)	Online Resources	Print Resources (all are available in the DLC or in schools)
Fraction and decimal concepts	**Represent** fraction and decimal numbers in different forms including with concrete materials, ten frames, pictures and symbols. Compare and order fractions (within 0-1) and decimal numbers (focus on tenths). Begin to use greater than and less than symbols.	Fraction Strip Exploration Decimal Place value tents Fractions with Cuisenaire Rods Clothesline activities Intro to Class Fraction wars (cards)	*Proportional Reasoning in Intermediate* (Fullerton, 2019) • Using a set model. pp. 32-36 • Using an area model. Pp. 60 -41 (using tangrams) • Linear model pp. 89 – 94 *Number Talks – Fractions, Decimals, and Percentages* (Parrish, 2016) • Chapter 3 (pp. 61-71)

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Computational Fluency

(Development of computational fluency and multiplicative thinking requires analysis of patterns and relations in multiplication and division.)

Curricular Content	Curricular Competencies (The student can…)	Online Resources	Print Resources (all are available in the DLC or in schools)
Fluency with addition and subtraction facts and multiplication (and related division) facts	Demonstrate **fact fluency** with addition and subtraction facts to 20 (with efficiency, accuracy and flexibility). Demonstrate fact fluency with 1x, 2x, 5x and 10x multiplication facts to 100 with developing fluency of other multiples derived from known facts.	Facts fluency resources and strategies Adding whole number Desmos activity 1-2 Nim Rich Task 4th Grade Number Sense Routines	*Mastering the Multiplication Facts* (Fullerton, 2020) • The 1's (pp. 11-14) • The 2's (pp. 15 - 19 + games) • The 10's (pp. 35 - 39 + games) • The 5's (pp. 40 - 44 + games) *Number Talks: Whole Number Computation* (Parrish, 2014) • Addition and subtraction (pp. 157 - 229) • Addition and subtraction (pp. 230 - 299) • Multiplication and Division Strategies (pp. 231-261) • Multiplication and Division Number Talks (pp. 262-299) *Elementary and Middle School Mathematics* (Van de Walle, 2022) • Chapter 9 (pp.174-201)
Addition and subtraction within 10 000	Add and subtract numbers within 10 000 using **decomposing**, **compensating** and regrouping strategies. Develop computational fluency through mental Math strategies and abilities to make sense of quantities	5 Types of Addition Strategies Number talk fifth grade friendly numbers Number Talks with Equations	*Number Talks: Whole Number Computation* (Parrish, 2014) • Addition & subtraction (pp. 157 - 229) • Addition & subtraction (pp. 230 - 299)

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Curricular Content	Curricular Competencies (The student can…)	Online Resources	Print Resources (all are available in the DLC or in schools)
			Elementary and Middle School Mathematics (Van de Walle, 2022) • Chapter 11 (pp. 230-266) *Good Questions 2-4* (Fullerton, 2018)
Addition and subtraction with decimal numbers with tenths and hundredths	Add and subtract decimal numbers to the hundredths using whole number strategies such as decomposing by place value, compensating, finding the difference and regrouping.	Ten frames Online manipulatives Adding or Subtracting Decimals with Models	*Place Value in Intermediate* (Fullerton, 2017) • beginning on p. 183 *Elementary and Middle School Mathematics* (Van de Walle, 2022) • pp. 415-417 *Good Questions 2-4* (Fullerton, 2018)

Multiplication including two or three-digit numbers by one digit.	Multiply numbers with two or three digits by one digit using **more than one strategy** such as area models, decomposing, regrouping, compensating, repeated addition.
	
	Develop an understanding of multiplication with larger numbers using models.
		Decomposing Numbers to Multiply:
		Multiplying by Decomposing Numbers
		Decomposing & distributive property
		
		Open middle:
		Multiplying Two-Digit Numbers – Closest to 7,000
		Multiplication Decisions
		Four Digit Products
			Multiplicative Thinking (Fullerton, 2015)
			• To Multiply or Not Multiply (p. 105)
			• Multiplication and Area (p. 105)
			• Multiplying by 10 & multiples of 10 (p. 112)
			• Multiplying Bigger numbers:
			  ○ Decomposition and X 5 (p. 118)
			  ○ Using the Distributive property (p. 121)
			  ○ Area Models and the Distributive property (p. 124)
			
			Elementary and Middle School Mathematics (Van de Walle, 2022)
			• Chapter 12 (pp. 267-276)
			
			Good Questions 2-4 (Fullerton, 2018)

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Curricular Content	Curricular Competencies (The student can…)	Online Resources	Print Resources (all are available in the DLC or in schools)
Division including two or three-digit numbers by one digit.	Divide numbers with two or three digits by one digit using **more than one strategy** such as, repeated subtraction, partial quotient and area models. Develop an understanding of division of larger numbers using models.	Division using an Area Model Division Using an Area Model Partial Quotient Strategy for Division RY	*Number Talks: Whole Number Computation* (Parrish, 2014) • Multiplication and Division Strategies (pp. 231-261) • Multiplication and Division Number Talks (pp. 262-299) *Elementary and Middle School Mathematics* (Van de Walle, 2022) • Chapter 12 (pp. 279-284)
Algebraic relationships among quantities	Use reasoning to **verbally explain and represent** with numbers and symbols, the process of **solving for an unknown**.	Using Balance Scale and Algebra Tiles on Mathigon or Solve Me Mobiles	
One-step equations with an unknown number, using all operations	Solve equations with the **unknown number** in different spots such as: 2000 X 30 = n, 450 + n = 700, n - 2500 = 500, n = 6000 ÷ 200 using strategies such as rewriting the equation, using related operations, using an open number line.	Solving for an unknown change Solving addition/subtraction and multiplication/division equations	*Algebraic Thinking* (Fullerton, 2020) • Solving Equations (pp 77-84, 97-102) *Elementary and Middle School Mathematics* (Van de Walle, 2022) • p. 319

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General Resources

General Strategies and Routines	Which One Doesn't Belong Dot Card and Number Talks Number Talk Images Coast Metro Math Project Interactive Simulations	Esti-Mysteries The Estimation Clipboard Cube Conversations Estimation Math Applications	Estimation 180 Week of Inspirational Math Building Thinking Classrooms Puzzles, Problems and Tasks
Building Our Understanding	Number Talks and Number Strings Coast Metro Math Project Concreteness Fading	Number Talks & Number Strings Spiraling the Curriculum Progression of Fractions	Number Talks Progression of Multiplication Progression of Division Building Math Fact Fluency
Classroom Assessment	Coast Metro Math Project	Island Numeracy Assessment	Assessing Curricular Competencies
Indigenous Connections	Coast Metro Math Project	When Seagull Stole the Sun	BC Numeracy Network
Planning	BC Numeracy Network Math Year Plan For K-5	Critical Concepts Map	Planning - Year, Week, Day

This document intentionally focusses on number sense and computational fluency 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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