

Mathematics Scope & Sequence Grade 4

Strands and topics are sequenced to allow for fundamental skills and concepts to be introduced and built upon throughout the year to deepen understanding and make connections between mathematical concepts. Specific Expectations are noted, as well as any cross-strand connections. (You can create your own path on mathup.ca to match the following scope and sequence.)

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There should be an ongoing focus on the following expectations:

A1: Social and Emotional Learning

apply, to the best of their ability, a variety of social-emotional learning skills to support their use of the mathematical processes and their learning in connection with the expectations in the other five strands of the curriculum

C4: Mathematical Modeling

apply the process of mathematical modelling to represent, analyse, make predictions and provide insight into real-life situations

B2.1 Properties and Relationships

Use the properties of operations, and the relationships between addition, subtraction, multiplication and division, to solve problems involving whole numbers, including those requiring more than one operation, and check calculations

B2.2: Math Facts

- Gr. 4: recall and demonstrate multiplication facts for 1×1 to 10×10 , and related division facts
- Gr. 5: recall and demonstrate multiplication facts from 0×0 to 12×12 , and related division facts
- Gr. 6: understand the divisibility rules and use them to determine whether numbers are divisible by 2, 3, 4, 5, 6, 8, 9, and 10
- Gr. 7: understand and recall commonly used percents, fractions, and decimal equivalents
- Gr. 8: understand and recall commonly used square numbers and their square roots

B2.3 Mental Math

- Gr. 4: use mental math strategies to multiply whole numbers by 10, 100, and 1000, divide whole numbers by 10, and add and subtract decimal tenths, and explain the strategies used
- Gr. 5: use mental math strategies to multiply whole numbers by 0.1 and 0.01 and estimate sums and differences of decimal numbers up to hundredths, and explain the strategies used
- Gr. 6: use mental math strategies to calculate percents of whole numbers, including 1%, 5%, 10%, 15%, 25%, and 50%, and explain the strategies used
- Gr. 7: use mental math strategies to increase and decrease a whole number by 1%, 5%, 10%, 25%, 50%, and 100%, and explain the strategies used
- Gr. 8: use mental math strategies to multiply and divide whole numbers and decimal numbers up to thousandths by powers of ten, and explain the strategies used
- Number Talks by Shari Parish should be used 3 times a week to reinforce math facts and fluency ([Click Here](#))

*If you see a grey box, you can make note of areas to return to if students are struggling. If you do not have a combined grade you can simply move on to the next topic

Resources & Tools for Creating a Balanced Mathematics Program							
Engaging Math Tasks	Ministry Supports	Math @ Home	Math Skills Practice	Digital Manipulatives	Videos: Teaching with MathUp	MathUP Masters	Assessment
youcubed	High-Impact Instructional Practices	PVNCCDSB Math	Knowledgehook	Polypad Intro to Polypad Video	Part 1: Minds On Part 2: Action Part 3: Consolidate Part 4: Your Turn	Math Printable Masters	Math Assessment & Evaluation (It's more than a mark)
3-Act-Math Tasks	Math Curriculum Documents	Free Math Tutoring	IXL Ontario Curriculum	Toy Theatre		Teaching Combined Grades	EQAO Assessments
Learning Progression Document: Number							
Kindergarten Grade 1 Grade 2 Grade 3 Grade 4 Grade 5 Grade 6 Grade 7 Grade 8							

PVNCCDSB Scope & Sequence has been adapted from Northeastern Catholic District School Boards Fall 2022 Document:
[https://www.ncdsb.on.ca/2022%20Mathematics%20Scope%20&%20Sequence%20\(4-8\).pdf](https://www.ncdsb.on.ca/2022%20Mathematics%20Scope%20&%20Sequence%20(4-8).pdf)

 PVNCCDSB Gr. 4 Mathematics Scope and Sequence 2025		
Mathematical High Impact Practices include: Learning Goals, Success Criteria & Descriptive Feedback Direct Instruction Math Conversations Flexible Groupings Problem-Solving Tasks Small-Group Instruction Tools & Representation Deliberate Practice Effective math instruction begins when educators have high expectations of students and believe that all students have the potential to learn and do math. It uses culturally relevant practices and differentiated learning experiences to meet individual students' learning needs. It focuses on the development of conceptual understanding and procedural fluency, skill development, communication, and problem-solving skills. And it involves educators choosing from and using a variety of high-impact instructional practices (Hattie, 2009; National Council of Teachers of Mathematics, 2014).		
Time Frame	Strands	Grade 4
TERM 1 - PROGRESS REPORT		
 The First 20 Days of MathUP		
About 20 days	Social-Emotional Learning Skills First 20 Days A1 *Embed throughout	PURPOSE: Foster well-being Support math learning to high levels for all learners Develop SEL skills and the mathematical processes Contribute to equitable opportunities and outcomes Think critically and creatively EXPECTATIONS: Build relationships and communicate effectively Maintain positive motivation and perseverance Recognize sources of stress and cope with challenges Identify and manage emotions

Time Frame	Strands	Grade 4
About 15 days	Number B1	<u>REPRESENTING WHOLE NUMBERS</u> - Read and represent whole numbers up to and including 1000 using units of thousands, hundreds, or tens - Represent numbers using words - Describe various ways these numbers are used everyday
	Number B1 Algebra C4	<u>ESTIMATING & COMPARING WHOLE NUMBERS</u> - Compare and order whole numbers up to and including 10 000 - Round whole numbers to the nearest 10, 100 or 1000 - Round whole numbers to the nearest 10, 100 or 1000 - Use math models to represent real-life situations
About 6-12 days		Return to areas students may be struggling with.
About 6 days	Spatial Sense E1, E2	<u>SHAPES & ANGLES</u> - Identify angles and classify them as right, straight, acute or obtuse - Identify geometric properties of rectangles, including the number of right angles, parallel and perpendicular sides, and lines of symmetry
About 5 days	Spatial Sense E2 Algebra C4	<u>TIME</u> - Compare, estimate and determine elapsed time - Solve problems involving elapsed time by applying the relationship between different units of time - Use math models to represent real-life situations
About 9 days	Number B1, B2 Algebra C4	<u>ADDING & SUBTRACTING WHOLE NUMBERS</u> - Compose and decompose whole numbers up to and including 10 000 - Estimate sums and differences with whole numbers up to and including 10 000 - Add and subtract 4-digit numbers and recognize the relationship between adding and subtracting - Solve and create addition and subtraction - Use math models to represent real-life situations
About 7 days	Data D1, D2 Number B2	<u>DESCRIBING & SUMMARIZING DATA</u> - Determine the mean, median and mode(s) - Describe the relationship of the mean to the set of data - Make and test predictions about the mean, median, and mode(s)
TERM 1 - AFTER PROGRESS REPORTS		
About 6-10 days		Return to areas students may be struggling with.
About 9 days	Number B2	<u>SIMPLE MULTIPLICATION & DIVISION</u> - Recall multiplication facts for 1 x 1 to 10 x 10, and related division facts - Show simple multiplicative relationships involving whole-number rates - Solve problems that compare two amounts - Describe situations and solve problems
About 6 days	Spatial Sense E1	<u>LOCATIONS & TRANSFORMATIONS</u> - Plot and read coordinates in the first quadrant of a Cartesian plane - Describe translations that move a point from one coordinate to another - Describe and perform translations and reflections on a grid
About 7 days	Algebra C1	<u>PATTERNS</u> - Identify and describe repeating and growing patterns - Create and translate repeating and growing patterns using tables of values and graphs - Determine pattern rules and use them to extend patterns and make predictions
About 8 days	Number B1, B2 Algebra C4	<u>REPRESENTING FRACTIONS</u> - Represent fractions from halves to tenths (i.e. on a number line). Explain the meaning of the denominator and the numerator - Count to 10 by halves, thirds, fourths, fifths, sixths, eighths, and tenths - Represent the relationship between the repeated addition of a unit fraction and the multiplication of that unit fraction by a whole number - Use math models to represent real-life situations
About 4 days	Number B1, B2 Algebra C4	<u>COMPARING & ORDERING FRACTIONS</u> - Represent fractions from halves to tenths - Explain the meaning of the denominator and the numerator - Use drawings and models to represent, compare, and order fractions - Compare fair-share situations - Use math models to represent real-life situations
About 7 days	Number B1	<u>REPRESENTING DECIMAL NUMBERS</u> - Count to 10 by halves, thirds, fourths, fifths, sixths, eighths, and tenths, with and without tools - Read and represent decimals tenths (use place value) - Describe relationships and show equivalences among fractions and decimal tenths
TERM 2		
About 10 days	Spatial Sense E2 Number B2	<u>LENGTH</u> - Estimate and measure lengths - Use metric units - Apply relationships between lengths, widths, and perimeters of rectangles and regular shapes <u>CAPACITY</u> - Explain the relationship between litres and millilitres - Use L and mL as benchmarks to estimate

		Choose appropriate units and tools to measure capacity
About 4 days	Number B1	ESTIMATING & COMPARING DECIMAL NUMBERS - Count to 10 by halves, thirds, fourths, fifths, sixths, eighths, and tenths, with and without tools - Read, represent, compare and order decimal tenths (use place value) - Round decimal numbers to the nearest whole number
About 5 days	Number B2 Algebra C1	ADDING & SUBTRACTING DECIMAL NUMBERS - Add and subtract decimal tenths using place value - Describe patterns to illustrate relationships among whole numbers and decimal tenths - Solve and create problems that involve adding and subtracting decimals - Use patterns to describe or make predictions about real-life scenarios
About 8 days	Data D1	DISPLAYING & INTERPRETING DATA - Describe the difference between qualitative and quantitative data - Collect data from primary and secondary sources to answer questions that compare two or more sets of data - Use frequency tables - Create and interpret stem-and-leaf plots and multiple bar graphs, using titles, labels and appropriate scales - Analyse different sets of data presented in various ways, by drawing conclusions
About 5 days	Number B2	USING PLACE VALUE TO MULTIPLY & DIVIDE - Use mental math strategies to multiply whole numbers by 10, 100 and 1000 - Divide whole numbers by 10 - Represent and solve problems involving the multiplication of two- or three-digit whole numbers by 10, 100 and 1000
MARCH BREAK		
About 5 days	Spatial Sense E2	AREA - Use rows and columns to measure the areas of rectangles - Develop and apply the formula for the area of a rectangle - Find unknown measurements when given two of the three sides
About 7 days	Algebra C2, C4	ALGEBRA - Identify and use symbols as variables in expressions and equations - Solve equations that involve whole numbers up to 50 - Solve inequalities that involve the addition and subtraction of whole numbers up to 20 and graph the solutions
About 9 days	Number B2 Algebra C4	MORE COMPLEX MULTIPLICATION & DIVISION - Estimate and solve problems involving products and quotients involving one-digit and two-digit numbers - Solve problems involving dividing two-digit or three-digit numbers by one-digit whole numbers; express any remainder as a fraction - Use arrays - Use math models to represent real-life situations
About 8 days	Spatial Sense E1, E2 Algebra C4	MASS - Explain the relationship between g and kg as metric units of mass, and compare them - Use benchmarks of g and kg to estimate mass - Choose appropriate tools and units to measure mass - Use math models to represent real-life situations
About 7 days	Financial Literacy F1 Algebra C4	FINANCIAL LITERACY - Identify various methods of payment to purchase goods and services - Estimate and calculate the cost of multiple items in whole-dollar amounts, not including sFs tax - Use mental math to calculate change - Explain the concepts of spending, saving, earning, investing and donating - Relationship between spending and saving - Understand whether something is reasonably priced and therefore a good purchase - Use math models to represent real-life situations
About 8 days	Data D1, D2	PROBABILITY - Likelihood of an event: impossible, unlikely, equally likely, likely and certain - Represent likelihoods on a probability line and use it to make predictions and informed decisions
About 6 days	Algebra C1, C3 Spatial Sense E1	CODING - Create and execute code for sequential, concurrent, repeating, and nested events - Read and alter code - Describe how changes to the code affect the outcomes - Describe and represent shape, location and movement when using properties and relationships - Use patterns to describe or make predictions about real-life scenarios
About 5-12 days		Return to areas students may be struggling with.