Peterborough Victoria Northumberland and Clarington Catholic District School Board

Mathematics Scope & Sequence Grade 6/7

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.)
Specific Expectations are noted, as well as any cross-strand connections. Please refer to the curriculum teacher supports for further details.

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	DESMOS		Teaching Combined Grades	EQAO Assessments
Learning Progression Documents: Number Sense and Numeration 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

Peterborough Victoria Northumberland and Clarington Catholic District School Board

PVNCCDSB Gr. 6/7 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).

TERM 1 - PROGRESS REPORT

The First 20 Days of MathUP

About 20 days	Social-Emotional Learning Skills First 20 Days Gr. 6 First 20 days Gr. 7 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 6	Grade 7
About 14 days	**Grade 6:** Number B1 Alegbra C4 **Grade 7:** Number B1, B2	REPRESENTING WHOLE NUMBERS • Read and represent whole numbers up to and including 1 000 000 • Use standard and expanded forms, and write number in words • Make connections to the way these numbers are used everyday	POWERS & ROOTS • Represent and compare whole numbers up to and including one billion (power of 10) • Identify and represent perfect squares and determine their roots • Evaluate and express repeated multiplication of whole numbers using exponential notation
	Grade 6: Number B1 **Grade 7:** Number B1	ESTIMATING & COMPARING WHOLE NUMBERS • Read and represent whole numbers up to and including 1 000 000 • Use place value to estimate number size • Compare numbers using benchmarks • order sets of numbers and explain the orderings	RATIONAL NUMBERS • Read, represent, compare and order rational numbers, including positive and negative fractions and decimal numbers to thousandths
About 7 days	**Grade 6:** Number B1 **Grade 7:** Number B2 Algebra C1	INTEGERS • Read and represent integers (use horizontal and vertical number lines) and identify real life connections • Compare and order integers	ADDING & SUBTRACTING INTEGERS • Use objects, diagrams, and equations to represent, describe, and solve situations • Represent positive and negative integers by adding zeros • Use patterns to describe or make predictions about real-life scenarios
About 4 days	**Grade 6:** Spatial Sense E2 **Grade 7:** Spatial Sense E Algebra C3	ANGLES • Use a protractor to measure and construct angles up to 360° • Use angle relationships to figure out the measures of unknown angles	DILATIONS & SIMILARITY • Perform dilations and describe the similarity between the image and the original shape • Write and execute code, including code that involves events influenced by a defined count and /or sub-program and other control structures • Read and alter code
About 7 days	**Grade 7:** Spatial Sense E1	EQAO practice questions **OR** return to areas students may be struggling with.	GEOMETRIC REPRESENTATIONS • Draw top, front, and side views, as well as perspective views, of objects (3D structures) and physical spaces • Use appropriate scales
About 8 days	**Grade 6:** Number B2 Algebra C1 **Grade 7:** Number B1 Algebra C4	CLASSIFYING WHOLE NUMBERS • Classify numbers as prime or composite • Use factor trees • Observe patterns in multiples of numbers and in special types of numbers	REPRESENTING LARGE NUMBERS • Represent and compare whole numbers up to and including one billion • Expanded form using powers of ten • Use of place value • Use math models to represent real-life situations
About 8 days	**Grade 6:** Data D1 **Grade 7:** Data D1	COLLECTING, ORGANIZING & DESCRIBING DATA • Discrete and continuous data • Collect qualitative data and discrete and continuous quantitative data to answer questions about the population • Organize sets of data using intervals • Determine the range and use it to compare two or more sets of data	DISPLAYING DATA • Explain why percentages are used to represent the distribution of a variable for a population or sample in large sets of data • Graph various sets of data, using proper sources, titles, labels, and scales • Create and interpret infographics
TERM 1 - AFTER PROGRESS REPORTS			
About 10 days	**Grade 6:** Number B2 Algebra C4 **Grade 7:** Number B2 Algebra C4	RATES & RATIOS • Describe situations involving ratios • Solve problems involving rates and ratios • Use alternative forms of ratio including equivalent ratios and fractions • Use math models to represent real-life situations PERCENTS • Relate fractions, decimals, and percents • Estimate benchmark percents of whole numbers • Calculate percents of whole numbers, including !%, 5%, 10%, 15%, 25%, and 50%, and explain the strategies used • Solve problems involving ratios, rates and percents	RATES & RATIOS • Identify proportional (equivalent) and non-proportional situations: equivalent ratios • Apply proportional reasoning to solve problems: ratio and rate problems
About 10 days	**Grade 6:** Number B2	WHOLE NUMBER OPERATIONS • Use properties of operations, the inverse operations and mental math strategies	DECIMAL OPERATIONS • Round decimal numbers to the nearest tenth, hundredth, or whole number

	Algebra C4 **Grade 7:** Number B1, B2	• Represent and solve problems, using estimation and algorithms • Use multiplication and division to solve problems with rates • Apply BDMAS to determine the value of a numeric expression • Use math models to represent real-life situations	• Solve problems involving whole and decimal numbers • Multiply and divide decimal numbers by decimal numbers
About 6 days	**Grade 6:** Spatial Sense E1 **Grade 7:** Spatial Sense E1 Algebra C1	LOCATIONS & TRANSFORMATIONS • Plot and read coordinates in the first quadrant of a Cartesian plane • Describe the translations that move a point from one coordinate to another • Describe and perform translations, reflections, and rotations up to 360° on a grid • Predict transformations	TRANSFORMATIONS • Describe and perform translations, reflections, and rotations on a Cartesian plane • Predict the results of transformations • Identify and compare repeating patterns found in real-life contacts
About 6 days	**Grade 6:** Algebra C1 **Grade 7:** Algebra C1	PATTERNS • Identify and describe repeating, growing, and shrinking patterns • Specify which growing patterns are linear • Create and translate growing and shrinking patterns using tables of values and graphs • Identify and create pattern rules, including algebraic pattern rules • Apply pattern rules and use them to extend patterns • Make and justify predictions of missing elements	PATTERNS • Identify and compare repeating, growing, and shrinking patterns • Compare linear growing patterns on the basis of their constant rates and initial values • Create and translate repeating, growing, and shrinking patterns, involving whole and decimal numbers • Use algebraic expressions and equations for linear growing patterns • Determine pattern rules and use them to extend patterns • Make predictions and identify missing elements in patterns with whole and decimal numbers • Use algebraic representations to solve for unknown values in linear growing patterns
About 5 days	**Grade 6:** Number B1 Algebra C4 **Grade 7:** Number B1, B2 Algebra C4	REPRESENTING, COMPARING & ORDERING FRACTIONS • Compare and order proper fractions, improper fractions, and mixed numbers • Relate numerators and denominators to compare and order • Write mixed numbers as improper fractions and vice versa • Use math models to represent real-life situations	PERCENT • Convert between fractions and percents • Solve problems involving whole numbers, decimal numbers, fractions, ratios, rates, and percents • Understand and recall commonly used percents, fractions, and decimal equivalents • Use mental math strategies to increase and decrease a whole number by 1%, 5%, 10%, 25%, 50%, and 100% • Use math models to represent real-life situations
About 10 days	**Grade 6:** Number B2 Algebra C4 **Grade 7:** Number B1, B2	ADDING & SUBTRACTING FRACTIONS • Add and subtract fractions with like and unlike denominators using models OPERATIONS WITH FRACTIONS & WHOLE NUMBERS • Multiply whole numbers by proper fractions • Divide whole numbers by proper fractions • Use math models to represent real-life situations	FRACTIONS • Use equivalent fractions to simplify fractions • Generate fractions and decimal numbers between any two quantities • Add and subtract fractions, including creating equivalent fractions • Multiply and divide fractions by fractions
About 7 days	Number B1 Algebra C1	REPRESENTING DECIMAL NUMBERS • Read, represent, compare, and order decimal numbers up to thousandths • Round decimal numbers to the nearest tenth, hundredth, or whole number • Describe relationships and show equivalences among fractions and decimals • Create and describe patterns to illustrate relationships among whole numbers and decimal numbers.	Return to areas students may be struggling with.
TERM 2			
About 6 days	**Grade 6:** Spatial Sense E2 **Grade 7:** Spatial Sense E2 Algebra C4	LENGTH, MASS & CAPACITY • Measure length, mass, and capacity using metric units • Convert metric units • Solve problems involving conversions	CIRCLE MEASUREMENT • Relationships between the radius, diameter, and circumference of a circle • Explain the formula for finding the circumference • Solve problems • Construct circles when given the radius, diameter, or circumference • Formula for the area of a circle • Spatial Sense • Use math models to represent real-life situations
About 5 days	**Grade 6:** Number B1	ESTIMATING & COMPARING DECIMAL NUMBERS • Compare and order decimal numbers and fractions • Use place value concepts to compare and order decimal numbers up to thousandths	Return to areas students may be struggling with.
About 5 days	**Grade 6:** Number B2 Algebra	ADDING AND SUBTRACTING DECIMAL NUMBERS • Represent and solve problems involving the addition and subtraction of decimal tenths, hundredths, and thousandths, using estimation and algorithms	Return to areas students may be struggling with.

	C1	• Justify strategies • Use patterns to describe or make predictions about real-life scenarios	
About 8 days	**Grade 6:** Data D1 **Grade 7:** Data D1	DISPLAYING & INTERPRETING DATA • Describe the difference between discrete and continuous data • Select among a variety of graphs: histograms, broken-line graphs • Display data in graphs with proper sources, titles, labels, and scales, and justify the graph choice • Represent a set of data in an infographic	COLLECTING, USING & DESCRIBING DATA • Analyse different sets of data presented in various ways, including circle graphs and in misleading graphs • Determine the impact of adding or removing data from a data set on a measure of central tendency, and describe how these changes alter the shape and distribution of the data • Collect qualitative data and discrete and continuous quantitative data to answer questions • Organize sets of data and use percentages
About 8 days	**Grade 6:** Number B2 Spatial Sense E2 **Grade 7:** Number B2	MULTIPLYING & DIVIDING DECIMAL NUMBERS • Multiply and divide decimals by 10, 100, 1000, and 10 000 • Multiply and divide three-digit whole numbers by decimal tenths • Represent and solve problems involving the division of decimal numbers up to thousandths by whole numbers up to 10 • Measure length, area, mass, and capacity using the appropriate metric units	FACTORS & MULTIPLES • Use properties and order of operations and inverse operations, to solve problems involving whole numbers • Determine the greatest common factor for a variety of whole numbers up to 144 • Determine the lowest common multiple for two or three whole numbers
MARCH BREAK			
About 14 days	**Grade 6:** Spatial Sense E1 Algebra C4 **Grade 7:** Spatial Sense	AREA • Measure area using metric units • Solve problems that require converting metric units • Determine the areas of trapezoids, rhombuses, kites, and composite polygons by decomposing them into shapes with known areas • Develop the formula for the area of a trapezoid • Use math models to represent real-life situations SURFACE AREA • Create and use nets to demonstrate the relationship between the faces of prisms and pyramids and their surface areas • Determine the surface areas of prisms and pyramids	AREA & SURFACE AREA • Solve problems involving perimeter and area that require converting metric units • Represent cylinders as nets and determine their surface area by adding the areas of their parts
About 6 days	**Grade 6:** Algebra C2 **Grade 7:** Algebra C2	ALGEBRA • Add monomials with a degree of 1 that involve whole numbers • Evaluate algebraic expressions that involve whole numbers and decimal tenths • Solve equations that involve multiple terms and whole numbers • Solve inequalities that involve two operations and whole numbers up to 100 • Verify and graph solutions	ALGEBRA • Add and subtract monomials with a degree of 1 that involve whole numbers • Evaluate algebraic expressions that involve whole and decimal numbers • Solve equations that involve multiple terms, whole numbers, and decimal numbers • Solve inequalities that involve multiple terms and whole numbers, and verify and graph the solutions
About 7 days	**Grade 6:** Number B2 Algebra C3	DIVISIBILITY TESTS • Understand the divisibility rules and use them to determine whether numbers are divisible by 2, 3, 4, 5, 6, 8, 9, and 10 • Write and execute code, including conditional statements and other control structures • Read and alter code	Return to areas students may be struggling with.
About 6 days	**Grade 6:** Spatial Sense E1 Algebra C3 **Grade 7:** Spatial Sense E1	2D SHAPES & 3D OBJECTS • List the properties of the diagonals, rotational symmetry, and line symmetry of various types of quadrilaterals • Construct 3D objects when given their top, front, and side views • Link to Coding (C3) • Coding: properties of quadrilaterals: • Write and execute code, including conditional statements and other control structures • Read and alter code	DESCRIBING & CLASSIFYING 3D OBJECTS • Describe and classify cylinders, pyramids, and prisms according to their geometric properties • Identify plane and rotational symmetry
About 10 days	**Grade 6:** Financial Literacy F1 Algebra C4 **Grade 7:** Financial Literacy F1 Algebra	FINANCIAL LITERACY • Identify different types of financial goals, including earning and saving goals • Identify factors that may help or interfere with reaching financial goals • Describe the advantages and disadvantages of various methods of payment that can be used to purchase goods and services • Explain the concept of interest rates • Identify the types of interest rates and fees associated with different accounts and loans offered by banks and other financial institutions • Describe trading, lending, borrowing and donating	FINANCIAL LITERACY • Identify and compare exchange rates, and convert foreign currencies to Canadian dollars and vice versa • Identify and describe various reliable sources of information that can help with planning for and reaching a financial goal • Create, track, and adjust sample budgets designed to meet longer-term financial goals • Identify various societal and personal factors that may influence financial decision-making and the effects each might have • Explain how interest rates can impact saving, investments, and the cost of borrowing to pay for goods and services over time

	C4	• Use math models to represent real-life situations	• Compare interest rates and fees for different accounts and loans offered by various financial institutions • Use math models to represent real-life situations
About 6 days	**Grade 6:** Data D2 Algebra C4 **Grade 7:** Data D2	PROBABILITY • Use fractions, decimals, and percents to express the probability of events happening • Represent probability on a probability line and use it to make predictions/decisions • Determine and compare the theoretical and experimental probabilities of two independent events happening • Use math models to represent real-life situations	PROBABILITY • Describe the difference between independent and dependent events • Explain how probabilities differ • Determine and compare theoretical and experimental probabilities of two events
About 4 days	**Grade 7:** Algebra C4 Number B2	Return to areas students may be struggling with.	REPRESENTING LINEAR RELATIONSHIPS • Identify proportional (equivalent) and non-proportional situations • Apply proportional reasoning to solve problems • Graph linear relationships and describe them algebraically
About 12 days	**Grade 7:** Spatial Sense E2 Algebra C3	Return to areas students may be struggling with.	VOLUME • Relating volume to capacity (mL to cm3) • Solve problems involving area and volume that require conversion • Volume of a prism or cylinder • Write and execute code • Read and alter code