



Langley School District
**Prioritized Essential Learning
Standards in Math K-7**
September 2021



“An innovative, inspiring and unified Learning Community”

Prioritized Essential Learning Standards in Math K-7

INTRODUCTION

As we move forward in the implementation of Response to Intervention structures in Langley schools, it is imperative to determine essential learning standards in mathematics within the District AND within the school, based on what we know about students' strengths and growth areas. All mathematics curricular content and competencies are important and connected, but when having to prioritize learning standards, the idea of what is foundational or essential needed to be addressed. It is important to continue to embed aboriginal worldviews and perspectives into mathematics learning. This document represents the prioritized essential learning standards in mathematics K-7, developed by teachers from the BC Numeracy Network. Schools can use document as the foundation for this work and add to the essential learning standards from what they know about their own students in their school context.

THE FOLLOWING QUESTIONS WERE CONSIDERED IN PRIORITIZING ESSENTIAL LEARNING STANDARDS:

What is new curricular content at the grade level?

Look at the previous grade levels to see what new curricular content is being introduced at the grade level. For examples, fractions, multiplication and division are all new concepts introduced in grade 3.

What curricular content is necessary to review, practice and enhance knowledge of, that is essential for continuous mathematics learning?

Some curricular topics need ongoing review and practice, such as number operations. Other content area knowledge can be enhanced by connecting or applying that mathematics in a project or connected to another area of math.

What curricular competencies are connected to your prioritized curricular content learning standards?

Is it possible to include one curricular competency from each of the four curricular competency areas?

What curricular competencies are connected to your core competencies area/s of focus?

Many teachers have chosen one or two core competencies to focus on each term. What curricular competencies are aligned with that focus?

The following pages include suggested essential learning standards for each grade level.

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Essential Curricular Content	Indicators of Proficiency
Number concepts to 10	Represent quantities to 10 with materials, pictures and numbers
Ways to make 5	Match sets of materials or pictures to corresponding numerals
Decomposing numbers to 10	Count to 10 in sequence and with one-to-one correspondence Subitize to 5 with dot images Build five in many ways (i.e., 2 and 3, 4 and 1, 2 and 2 and 1) using concrete materials

Essential Curricular Competencies (connect with the content)

Develop mental math strategies

Problem-solving

Explain and justify mathematical ideas and decisions

Represent mathematical ideas in concrete, pictorial and symbolic forms

Connect mathematical ideas to each other, other areas and personal interests

Instructional and Assessment Practices

- ▶ Number Talks (dot images, ten frames) - assess contributions during number talks and discussions
- ▶ Counting Collections - administer task-based interviews including observations while solving problems, engaging in tasks and working with materials
- ▶ Math Games - confer with students; listening and observing
- ▶ Open Questions - collect products that involve representing mathematical ideas with concrete, pictorial and symbolic forms

GRADE 1

Essential Curricular Content	Indicators of Proficiency
Number concepts to 20	Represent, compare, order numbers to 20 Demonstrate understanding of teen numbers as ten and ones Count in various ways (by 1s, 2s, 5s, ascending and descending, counting on from a number)
Ways to make 10	Compose and decompose 10 in many ways using concrete, pictorial and symbolic forms (i.e., $5+5$, $5+3+2$, $6+3+1$)
Addition and subtraction of numbers to and within 20	Demonstrate understanding of the processes of addition and subtraction using materials, pictures and numbers/symbols Use more than one strategy to add and subtract (i.e., counting all, counting on or back, making and bridging 10, decomposing, using doubles)

Essential Curricular Competencies (connect with the content)

Develop mental math strategies

Problem-solving

Explain and justify mathematical ideas and decisions

Represent mathematical ideas in concrete, pictorial and symbolic forms

Connect mathematical ideas to each other, other areas and personal interests

Instructional and Assessment Practices

- ▶ Number Talks (dot images, ten frames etc.) - assess contributions during number talks and discussions
- ▶ Counting Collections - administer task-based interviews, include observations while solving problems, engaging in tasks and working with materials
- ▶ Math Games - confer with students; listening and observing
- ▶ Open Questions - collect products that involve representing mathematical ideas with concrete, pictorial and symbolic forms

GRADE 2

Essential Curricular Content	Indicators of Proficiency
Place value understanding to 100	Represent, compare, order and decompose numbers to 100 Count in various ways (by 2s, 5s, 10s from different starting points, ascending and descending)
Developing fluency with +/- facts to 20	Develop fluency and strategies for addition facts to 20 and related subtraction facts (making and bridging 10, decomposing, using doubles, counting on)
Addition and subtraction of two-digit numbers	Add and subtract numbers two-digit numbers using decomposing, compensating, finding the difference and regrouping strategies and with using tools such as ten frames, hundred charts and number lines

Essential Curricular Competencies (connect with the content)

Develop mental math strategies

Problem-solving

Explain and justify mathematical ideas and decisions

Represent mathematical ideas in concrete, pictorial and symbolic forms

Connect mathematical ideas to each other, other areas and personal interests

Instructional and Assessment Practices

- ▶ Number Talks - assess contributions during number talks and discussions
- ▶ Counting Collections - administer task-based interviews including observations while solving problems, engaging in tasks and working with materials
- ▶ Math Games - confer with students; listening and observing
- ▶ Open Questions - collect products that involve representing mathematical ideas with concrete, pictorial and symbolic forms

GRADE 3

Essential Curricular Content	Indicators of Proficiency
Place value understanding to 1000	Represent, compare, order and decompose numbers to 1000 Count in various ways (skip-counting by any number from any starting point, increasing and decreasing)
Fluency with +/- facts to 20	Recall of most addition facts to 20
Addition and subtraction of two and three-digit numbers	Add and subtract numbers within 1000 using decomposing, compensating and regrouping strategies
Introduction to multiplication, division and fraction concepts	Demonstrate an understanding of the processes of multiplication and division and what fractions are, using concrete and pictorial forms and symbols

Essential Curricular Competencies (connect with the content)

Develop mental math strategies

Problem-solving

Explain and justify mathematical ideas and decisions

Represent mathematical ideas in concrete, pictorial and symbolic forms

Connect mathematical ideas to each other, other areas and personal interests

Instructional and Assessment Practices

- ▶ Number Talks - assess contributions during number talks and discussions
- ▶ Counting Collections - administer task-based interviews including observations while solving problems, engaging in tasks and working with materials
- ▶ Math Games - confer with students; listening and observing
- ▶ Open Questions - collect products that involve representing mathematical ideas with concrete, pictorial and symbolic forms

GRADE 4

Essential Curricular Content	Indicators of Proficiency
Place value understanding to 10 000	Represent, compare, order and decompose numbers to 10 000 and count in various ways (by various multiples, starting points, increasing/decreasing)
Fluency with +/- and \times/\div facts	Recall of addition facts and related subtraction facts to 20 Recall of 2x, 5x and 10x multiplication facts to 100 with developing fluency of other multiples
Addition and subtraction to and within 10 000	Add and subtract numbers within 10 000 using decomposing, compensating and regrouping strategies
Comparing and ordering fractions	Compare and order fractions with common denominators, using benchmarks of 0, $\frac{1}{2}$ and 1 on a number line
Introduction to decimals – tenths and hundredths	Represent decimal tenths and hundredths with concrete materials, pictures and symbols; show equivalence between fraction and decimal notation; add and subtract decimals numbers (tenths and hundredths)

Essential Curricular Competencies (connect with the content)

Develop mental math strategies

Problem-solving

Explain and justify mathematical ideas and decisions

Represent mathematical ideas in concrete, pictorial and symbolic forms

Connect mathematical ideas to each other, other areas and personal interests

Instructional and Assessment Practices

- ▶ Number Talks - assess contributions during number talks and discussions
- ▶ Show Ways to Represent Fractions & Decimals - administer task-based interviews including observations of students engaging in tasks/working with materials
- ▶ Math Games - confer with students; listening and observing
- ▶ Open Questions - collect products that involve representing mathematical ideas with concrete, pictorial and symbolic forms

GRADE 5

Essential Curricular Content	Indicators of Proficiency
Place value understanding to 1 000 000	Represent, compare, order and decompose numbers to 1000 Count in various ways (skip-counting by any number from any starting point, increasing and decreasing)
Fluency with +/- facts to 20	Recall of most addition facts to 20
Addition and subtraction of two and three-digit numbers	Add and subtract numbers within 1000 using decomposing, compensating and regrouping strategies
Introduction to multiplication, division and fraction concepts	Demonstrate an understanding of the processes of multiplication and division and what fractions are, using concrete and pictorial forms and symbols

Essential Curricular Competencies (connect with the content)
Develop mental math strategies
Problem-solving
Explain and justify mathematical ideas and decisions
Represent mathematical ideas in concrete, pictorial and symbolic forms
Connect mathematical ideas to each other, other areas and personal interests

Instructional and Assessment Practices

- ▶ Number Talks (whole numbers and decimal numbers) - assess contributions during number talks and discussions
- ▶ Ways to Represent Equivalent Fractions - administer task-based interviews including observations of students engaging in tasks and working with materials
- ▶ Math Games - confer with students; listening and observing
- ▶ Open Questions - collect products that involve representing mathematical ideas with concrete, pictorial and symbolic forms

GRADE 6

Essential Curricular Content	Indicators of Proficiency
Place value understanding from thousandths to billions	Represent, compare, order and decompose numbers from thousandths to billions and count in various ways (by various multiples, starting points, increasing/decreasing)
Fluency with \times and \div facts	Recall of most multiplication facts and related division facts
Factors and multiples	Identify common factors and multiples
Multiplication and division of decimal numbers	Multiply and divide decimal numbers using related strategies used for whole numbers
Order of operations	Solve equations including multiple operations and brackets/parentheses, applying order of operations
Improper fractions and mixed numbers	Use materials, pictures and symbols to compare and order fractions, including improper fractions and mixed numbers, using benchmarks such as 0, $\frac{1}{2}$ and 1 along a number line
Introduction to ratios and percents	Represent ratios and percents in different forms and relate to fractions and decimal numbers
Patterns – algebraic relationships	Describe visual patterns with words, numbers, expressions, tables, and graphs
One-step equations	Solve one-step equations with whole number co-efficients such as $3x=12$ or $x+5=11$

Essential Curricular Competencies (connect with the content)

Develop mental math strategies

Problem-solving

Explain and justify mathematical ideas and decisions

Represent mathematical ideas in concrete, pictorial and symbolic forms

Connect mathematical ideas to each other, other areas and personal interests

Instructional and Assessment Practices

- ▶ Number Talks (whole numbers and decimal numbers) - assess contributions during number talks and discussions
- ▶ Visual Patterns - observe students engaging in tasks and working with symbols, pictures and materials
- ▶ Math Games - confer with students; listening and observing
- ▶ Open Questions - collect products that involve representing mathematical ideas with concrete, pictorial and symbolic forms

GRADE 7

Essential Curricular Content	Indicators of Proficiency
Place value understanding and number operations with whole numbers	Apply place value understanding and fluency with all number operations to problem-solving contexts, numeracy tasks and interdisciplinary projects
Fluency with \times and \div facts	Recall of multiplication facts and related division facts and application of this facts when multiplying and dividing greater numbers
Operations with decimal numbers	Fluency with all operations using decimal numbers, including order of operations
Integers	Represent positive and negative integers using concrete, pictorial and symbolic forms; add, subtract, multiply and divide with integers and represent these processes
Relationship between fractions, decimals, ratios and percents	Demonstrate understanding of relationship between fractions, decimals, ratios and percents through equivalency; represent in different forms (concrete, pictorial, symbolic)
Two-step equations	Solve two-step equations with whole number co-efficients and constants such as $3x + 4 = 19$
Cartesian coordinates and graphing	Graph coordinate pairs from an expression on a Cartesian grid and predict and explain the resulting graph
Circle properties and measurement	Identify and calculate properties of circle (radius, diameter, area and perimeter)
Place value understanding and number operations with whole numbers	Apply place value understanding and fluency with all number operations to problem-solving contexts, numeracy tasks and interdisciplinary projects

Essential Curricular Competencies (connect with the content)

Develop mental math strategies

Problem-solving

Explain and justify mathematical ideas and decisions

Represent mathematical ideas in concrete, pictorial and symbolic forms

Connect mathematical ideas to each other, other areas and personal interests

Instructional and Assessment Practices

- ▶ Number Talks (whole numbers and decimal numbers) - assess contributions during number talks and discussions
- ▶ Math Tasks - observe students engaging in tasks and working with symbols, pictures and materials
- ▶ Math Games - confer with students – listening and observing
- ▶ Open Questions - collect products that involve representing mathematical ideas with concrete, pictorial and symbolic forms