BIG IDEAS

Number represents and describes quantity: Parts of wholes can be represented by equivalent fractions.	Developing computational fluency comes from a strong sense of number: Flexibility in working with numbers extends to operations with larger (multi-digit) numbers.	We use patterns to represent identified regularities and to form generalizations: Number patterns can be expressed using variables in tables.	We can describe, measure, and compare spatial relationships: Closed shapes have area and perimeter.	Analyzing data and chance help us to compare and interpret: Graphs can be used to show many-to-one correspondence.

Learning Standards

Curricular Competencies

Students are expected to be able to do the following:

Reasoning and analyzing

- Estimate reasonably
- Develop mental math strategies and abilities to make sense of quantities
- Use reasoning and logic to explore and make connections

Understanding and solving

- Use multiple strategies *[visual, oral, role-play, experimental, written, symbolic]* to engage in problem solving (e.g., visual, oral, role-play, experimental, written, symbolic)
- Develop, construct, and apply mathematical understanding through role-play, inquiry, and problem solving
- Engage in problem-solving experiences that are connected to place, story, and cultural practices relevant to the local community

Communicating and representing

- Communicate *[concretely, pictorially, symbolically, and by*

Content

Students are expected to know the following:

- number concepts to 1 000 000 *[counting: multiples; flexible counting strategies; whole number benchmarks; numbers to 1 000 000 can be arranged and recognized: comparing and ordering numbers; estimating large quantities; place value: 100 000s, 10 000s, 1000s, 100s, 10s, and 1s; understanding the relationship between digit places and their value, to 1 000 000]*
- decimals to thousandths
- equivalent fractions
- whole-number, fraction, and decimal *[Two equivalent fractions are two ways to represent the same amount (having the same whole).; comparing and ordering of fractions and decimals; addition and subtraction of decimals to thousandths; estimating decimal sums and differences; estimating fractions with benchmarks (e.g., zero, half, whole)]* benchmarks
- addition and subtraction to 1 000 000 *[using flexible computation strategies involving taking apart (eg., decomposing using friendly numbers and compensating) and combining numbers*

using spoken or written language to express, describe, explain, and apply mathematical ideas] in many ways (concretely, pictorially, symbolically, and by using spoken or written language to express, describe, explain, and apply mathematical ideas) • Describe, create, and interpret relationships through concrete, pictorial, and symbolic representations • Use technology *[pen, pencil, paper, crayons, iPad, camera]* appropriately to explore mathematics, solve problems, record, communicate, and represent thinking	*in a variety of ways; estimating sums and differences to 10 000; using addition and subtraction in real-life contexts and problem-based situations; whole-class number talks]* • multiplication and division to three digits *[understanding the relationships between multiplication and division, multiplication and addition, division and subtraction; using flexible computation strategies (eg., decomposing, distributive principle, commutative principle, repeated addition, repeated subtraction); using addition and subtraction in real-life contexts and problem-based situations; whole-class number talks],* including division with remainders • addition and subtraction of decimals to thousandths *[estimating decimal sums and differences; using visual models such as base 10 blocks, place value mats, grid paper, and number lines; using addition and subtraction in real-life contexts and problem-based situations; whole-class number talks]* • addition and subtraction facts to 20 *[Teachers can provide opportunities for authentic practice, building on previous grade-level addition and subtraction facts; applying strategies and knowledge of addition and subtract facts in real-life contexts and problem-based situations, as well as when making math-to-math connections (eg., for 800 + 700, you can annex the zeros and use the knowledge of 8 + 7 to find the total)]* (extending computational fluency) • multiplication and division facts to 100 *[Provide opportunities for concrete and pictorial representations of multiplication. Use games to provide opportunities for authentic practice of multiplication computations.; looking for patterns in numbers such as a hundred chart to further develop their understanding of multiplication computation; Connect multiplication to skip-counting.; Connect multiplication to division and repeated addition.; Memorization of facts is not intended this level.; Students will become more fluent with these facts.; using mental math strategies such as doubling and halving, annexing, and distributive property. Students should be able to recall many multiplication facts by the end of Grade 5 (i.e. 2s, 3s, 4s, 5s, 10s); developing computational fluency with facts to 100]* (emerging computational fluency)

	• rules for increasing and decreasing patterns with words, numbers, symbols, and variables • one-step equations *[solving one-step equations with a variable; expressing a given problem as an equation using symbols (eg., 4 + X = 15)]* with variables • area measurement of squares and rectangles • relationships between area and perimeter *[measuring area of squares and rectangles using tiles, geoboards, grid paper; investigating perimeter and area and how they are related to but not dependent on each other]* • duration, using measurement of time *[understanding elapsed time and duration; applying concepts of time in real-life contexts and problem-based situations]* • classification *[investigating 3D objects and 2D shapes, based on multiple attributes; describing and sorting quadrilaterals; describing and constructing rectangular and triangular prisms; identifying prisms in the environment]* of prisms and pyramids • single transformations *[single transformations (slide/translation, flip/reflection, turn/rotation); using concrete materials with a focus on the motion of transformations]* • one-to-one correspondence and many-to-one correspondence *[many-to-one correspondence: one symbol represents a group or value (eg., on a bar graph, one square may represent five cookies)]* using double bar graphs • probability experiments *[predicting outcomes of independent events (eg., when you spin using one spinner and it lands on a single colour); predicting single outcomes (eg., when you spin using one spinner and it lands on a single colour); using spinners, rolling dice, pulling objects out of a bag],* focusing on independence • financial literacy *[predicting outcomes of independent events (eg., when you spin using one spinner and it lands on a single colour); predicting single outcomes (eg., when you spin using one spinner and it lands on a single colour); using spinners, rolling dice, pulling objects out of a bag]* – monetary calculations, including making change with amounts to 1000 dollars and developing simple financial plans

Learning Standards (continued)	
Curricular Competencies	**Content**
Connecting and reflecting • Visualize and describe mathematical concepts • Connect mathematical concepts to each other and make mathematical connections *[in daily activities, local and traditional practices, the environment, popular media and news events, cross-curricular integration]* to the real world • Share and reflect upon mathematical thinking • Draw upon local First Peoples knowledge and/or expertise of local Elders to make connections to mathematical topics and concepts	