BIG IDEAS

Mixed **numbers** and decimal numbers represent quantities that can be decomposed into parts and wholes.	Computational **fluency** and flexibility with numbers extend to operations with whole numbers and decimals.	**Linear relations** can be identified and represented using expressions with variables and line graphs and can be used to form generalizations.	**Properties** of objects and shapes can be described, measured, and compared using volume, area, perimeter, and angles.	**Data** from the results of an experiment can be used to predict the theoretical probability of an event and to compare and interpret.

Learning Standards

Curricular Competencies	Content
Students are expected to do the following: **Reasoning and analyzing** • Use **logic and patterns** to solve puzzles and play games • Use **reasoning and logic** to explore, analyze, and apply mathematical ideas • **Estimate reasonably** • Demonstrate and **apply** mental math strategies • Use tools or technology to explore and create patterns and relationships, and test conjectures • **Model** mathematics in contextualized experiences **Understanding and solving** • Apply **multiple strategies** to solve problems in both abstract and contextualized situations • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Visualize to explore mathematical concepts • Engage in problem-solving experiences that are **connected** to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures **Communicating and representing** • Use mathematical vocabulary and language to contribute to mathematical discussions	*Students are expected to know the following:* • **small to large numbers** (thousandths to billions) • multiplication and division **facts to 100** (developing computational fluency) • **order of operations** with whole numbers • **factors and multiples** — greatest common factor and least common multiple • **improper fractions** and mixed numbers • introduction to **ratios** • whole-number **percents** and percentage discounts • multiplication and division of **decimals** • increasing and decreasing **patterns**, using expressions, tables, and graphs as functional relationships • **one-step equations** with whole-number coefficients and solutions • **perimeter** of complex shapes • **area** of triangles, parallelograms, and trapezoids • **angle** measurement and classification • **volume and capacity** • **triangles**

• **Explain and justify** mathematical ideas and decisions • **Communicate** mathematical thinking in many ways • Represent mathematical ideas in concrete, pictorial, and symbolic forms **Connecting and reflecting** • **Reflect** on mathematical thinking • Connect mathematical concepts to each other and to **other areas and personal interests** • Use mathematical arguments to support **personal choices** • **Incorporate First Peoples** worldviews and perspectives to **make connections** to mathematical concepts	• combinations of **transformations** • **line graphs** • **single-outcome probability**, both theoretical and experimental • **financial literacy** — simple budgeting and consumer math

BIG IDEAS

Decimals, fractions, and percents are used to represent and describe parts and wholes of **numbers**.	Computational **fluency** and flexibility with numbers extend to operations with integers and decimals.	**Linear relations** can be represented in many connected ways to identify regularities and make generalizations.	The constant ratio between the circumference and diameter of circles can be used to describe, measure, and compare **spatial relationships.**	**Data** from circle graphs can be used to illustrate proportion and to compare and interpret.

Learning Standards

Curricular Competencies	Content
Students are expected to do the following: **Reasoning and analyzing** • Use **logic and patterns** to solve puzzles and play games • Use **reasoning and logic** to explore, analyze, and apply mathematical ideas • **Estimate reasonably** • Demonstrate and **apply** mental math strategies • Use tools or technology to explore and create patterns and relationships, and test conjectures • **Model** mathematics in contextualized experiences **Understanding and solving** • Apply **multiple strategies** to solve problems in both abstract and contextualized situations • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Visualize to explore mathematical concepts • Engage in problem-solving experiences that are **connected** to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures **Communicating and representing** • Use mathematical vocabulary and language to contribute to mathematical discussions • **Explain and justify** mathematical ideas and decisions	*Students are expected to know the following:* • multiplication and division **facts to 100** (extending computational fluency) • **operations with integers** (addition, subtraction, multiplication, division, and order of operations) • **operations with decimals** (addition, subtraction, multiplication, division, and order of operations) • **relationships** between decimals, fractions, ratios, and percents • **discrete linear relations**, using expressions, tables, and graphs • **two-step equations** with whole-number coefficients, constants, and solutions • **circumference** and area of circles • **volume** of rectangular prisms and cylinders • **Cartesian coordinates** and graphing • combinations of **transformations** • **circle graphs** • **experimental probability** with two independent events • **financial literacy** — financial percentage

• **Communicate** mathematical thinking in many ways • Represent mathematical ideas in concrete, pictorial, and symbolic forms **Connecting and reflecting** • **Reflect** on mathematical thinking • Connect mathematical concepts to each other and to **other areas and personal interests** • Use mathematical arguments to support **personal choices** • **Incorporate First Peoples** worldviews and perspectives to **make connections** to mathematical concepts	

BIG IDEAS

Number represents, describes, and compares the quantities of ratios, rates, and percents.	Computational **fluency** and flexibility extend to operations with fractions.	**Discrete linear relationships** can be represented in many connected ways and used to identify and make generalizations.	The relationship between surface area and volume of **3D objects** can be used to describe, measure, and compare spatial relationships.	Analyzing **data** by determining averages is one way to make sense of large data sets and enables us to compare and interpret.

Learning Standards

Curricular Competencies	Content
Students are expected to do the following: **Reasoning and analyzing** • Use **logic and patterns** to solve puzzles and play games • Use **reasoning and logic** to explore, analyze, and apply mathematical ideas • **Estimate reasonably** • Demonstrate and **apply** mental math strategies • Use tools or technology to explore and create patterns and relationships, and test conjectures • **Model** mathematics in contextualized experiences **Understanding and solving** • Apply **multiple strategies** to solve problems in both abstract and contextualized situations • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Visualize to explore mathematical concepts • Engage in problem-solving experiences that are **connected** to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures **Communicating and representing** • Use mathematical vocabulary and language to contribute to mathematical discussions • **Explain and justify** mathematical ideas and decisions	*Students are expected to know the following:* • **perfect squares and cubes** • **square and cube roots** • **percents** less than 1 and greater than 100 (decimal and fractional percents) • numerical **proportional reasoning (**rates, ratio, proportions, and percent) • operations with **fractions** (addition, subtraction, multiplication, division, and order of operations) • **discrete linear relations** (extended to larger numbers, limited to integers) • **expressions**- writing and evaluating using substitution • **two-step equations** with integer coefficients, constants, and solutions • **surface area and volume** of regular solids, including triangular and other right prisms and cylinders • **Pythagorean theorem** • construction, views, and nets of **3D objects** • **central tendency** • **theoretical probability** with two independent events • **financial literacy** — best buys

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BIG IDEAS

The principles and processes underlying operations with **numbers** apply equally to algebraic situations and can be described and analyzed.	Computational fluency and flexibility with numbers extend to operations with rational numbers.	**Continuous linear relationships** can be identified and represented in many connected ways to identify regularities and make generalizations.	Similar shapes have **proportional relationships** that can be described, measured, and compared.	Analyzing the validity, reliability, and representation of **data** enables us to compare and interpret.

Learning Standards

Curricular Competencies	Content
Students are expected to do the following: **Reasoning and analyzing** • Use **logic and patterns** to solve puzzles and play games • Use **reasoning and logic** to explore, analyze, and apply mathematical ideas • **Estimate reasonably** • Demonstrate and **apply** mental math strategies • Use tools or technology to explore and create patterns and relationships, and test conjectures • **Model** mathematics in contextualized experiences **Understanding and solving** • Apply **multiple strategies** to solve problems in both abstract and contextualized situations • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Visualize to explore mathematical concepts • Engage in problem-solving experiences that are **connected** to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures **Communicating and representing** • Use mathematical vocabulary and language to contribute to mathematical discussions • **Explain and justify** mathematical ideas and decisions	*Students are expected to know the following:* • **operations** with rational numbers (addition, subtraction, multiplication, division, and order of operations) • **exponents** and exponent laws with whole-number exponents • operations with **polynomials**, of degree less than or equal to 2 • **two-variable linear relations**, using graphing, interpolation, and extrapolation • **multi-step** one-variable linear equations • spatial **proportional reasoning** • **statistics** in society • **financial literacy** — simple budgets and transactions

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