

Chapter 9 Planning Chart: Fraction Operations

Cross-Curricular Competency: Solves problems. The Math Game and Lesson 10 require students to make choices about how to produce a desired outcome, for example by making use of the order of operations.

Broad Area of Learning: Citizenship and Community Life. The chapter task provides an opportunity to discuss the land area and population of Canada. How might community life be different in the sparsely populated territories compared to community life in Québec?

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<p>Getting Started: Pattern Block Designs, pp. 284–285</p>			Assessment Opportunity
<p>Lesson 1: Adding and Subtracting Fractions Less Than 1, pp. 286–289</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Equivalent fractions • Simplification and reduction • Locating numbers on a number line, abscissa (x-coordinate) of a point <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations 	
<p>Lesson 2: Adding and Subtracting Fractions Greater Than 1, pp. 290–293</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Equivalent fractions • Simplification and reduction • Locating numbers on a number line, abscissa (x-coordinate) of a point <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Estimating and rounding numbers in different situations • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations • Use of a calculator: operations and sequences of operations performed in the proper order 	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<p>Lesson 3: Exploring Fraction Patterns, pp. 294–295</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Equivalent fractions 	
<p>Mental Imagery: Comparing Negative Rationals, p. 295</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Comparing • Using a variety of representations (e.g. numerical, graphic) • Switching from one way of writing numbers to another or from one type of representation to another • Locating numbers on a number line, abscissa (<i>x</i>-coordinate) of a point <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Estimating and rounding numbers in different situations 	Optional
<p>Lesson 4: Fractions of Fractions, pp. 296–299</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Comparing • Using a variety of representations (e.g. numerical, graphic) • Switching from one way of writing numbers to another or from one type of representation to another 	
<p>Lesson 5: Multiplying Fractions, pp. 300–303</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Decomposition of numbers (e.g. additive, multiplicative) • Equivalent fractions • Simplification and reduction • Switching from one way of writing numbers to another or from one type of representation to another <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations 	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Mid-Chapter Review: pp. 304–307			Assessment Opportunity
Lesson 6: Multiplying Fractions Greater Than 1, pp. 308–311	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Decomposition of numbers (e.g. additive, multiplicative) • Equivalent fractions • Simplification and reduction • Switching from one way of writing numbers to another or from one type of representation to another <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Estimating and rounding numbers in different situations • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations 	
Lesson 7: Dividing Fractions I, pp. 312–315	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Decomposition of numbers (e.g. additive, multiplicative) • Equivalent fractions • Simplification and reduction • Switching from one way of writing numbers to another or from one type of representation to another <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations 	
Curious Math: Continued Fractions, p. 315			Beyond Cycle One. Do not assess.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<p>Lesson 8: Dividing Fractions II, pp. 316–319</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Decomposition of numbers (e.g. additive, multiplicative) • Equivalent fractions • Simplification and reduction • Switching from one way of writing numbers to another or from one type of representation to another <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations 	
<p>Lesson 9: Communicating about Multiplication and Division, pp. 320–322</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Using a variety of representations (e.g. numerical, graphic) • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Decomposition of numbers (e.g. additive, multiplicative) • Equivalent fractions • Simplification and reduction • Switching from one way of writing numbers to another or from one type of representation to another <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations 	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Math Game: Target $\frac{2}{3}$, p. 323	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Comparing • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Equivalent fractions • Simplification and reduction <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations 	Optional
Lesson 10: Order of Operations, pp. 324–326	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root • Order of operations and the use of no more than two levels of parentheses in different contexts 	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> • Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> • Equivalent fractions • Simplification and reduction <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations 	The student book uses the word “brackets” to refer to parentheses, in particular as part of the BEDMAS mnemonic device. Remind students that “brackets” is another name for “parentheses”.
Chapter Self-Test: p. 327			Self-Assessment Opportunity
Chapter Review: pp. 328–331			Assessment Opportunity
Chapter Task: Parts of Canada, p. 332	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root • Order of operations and the use of no more than two levels of parentheses in different contexts 	<p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Estimating and rounding numbers in different situations • Mental computation: the four operations, especially with numbers written in decimal notation, using equivalent ways of writing numbers and the properties of operations • Written computation: the four operations involving numbers that are easy to work with (including large numbers) and sequences of simple operations performed in the proper order (numbers written in decimal notation), using equivalent ways of writing numbers and the properties of operations 	Assessment Opportunity
Chapters 7–9 Cumulative Review: pp. 333–334			Assessment Opportunity: Select from Questions 1–2, 4–10.