Chapter 6 Planning Chart: Integer Operations

Cross-Curricular Competency: Communicates appropriately. Lesson 8 provides students with several opportunities for communicating about everyday situations in a mathematical way.

Broad Area of Learning: Health and Well-Being. The introduction to Lessons 4 and 6 are presented in terms of hiking and playing basketball. Use these opportunities to discuss the importance of exercise as part of a healthy lifestyle.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Getting Started: Spinning Numbers, pp. 180–181			Assessment Opportunity
Lesson 1: Exploring Integer Addition and Subtraction, pp. 182–183	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties *Arithmetic: Understanding Proportionality* • Ratio and rate • Unit rate	*Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • 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	
Lesson 2: Relating Integer Subtraction to Addition, pp. 184–187	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties	*Arithmetic: Different Ways of Writing and Representing Numbers* • Comparing • Using a variety of representations (e.g. numerical, graphic) • Locating numbers on a number line, abscissa (x-coordinate) of a point *Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • Looking for equivalent expressions • 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 • Use of a calculator: operations and sequences of operations performed in the proper order	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Lesson 3: Exploring Integer Multiplication, pp. 188–189	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties	*Arithmetic: Different Ways of Writing and Representing Numbers* • Using a variety of representations (e.g. numerical, graphic) • Locating numbers on a number line, abscissa (*x*-coordinate) of a point *Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • Looking for equivalent expressions • 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	
Lesson 4: Multiplying Integers, pp. 190–193	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties *Arithmetic: Understanding Proportionality* • Ratio and rate • Unit rate	*Arithmetic: Different Ways of Writing and Representing Numbers* • Using a variety of representations (e.g. numerical, graphic) • Locating numbers on a number line, abscissa (*x*-coordinate) of a point *Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • 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	
Mid-Chapter Review: pp. 194–196			Assessment Opportunity
Curious Math: Subtracting with an Adding Machine, p. 197	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties	*Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • Mental computation: the four operations, especially with numbers written in decimal notation, using equivalent ways of writing numbers and the properties of operations	Optional

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Lesson 5: Exploring Integer Division, pp. 198–199	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties	*Arithmetic: Different Ways of Writing and Representing Numbers* • Using a variety of representations (e.g. numerical, graphic) • Locating numbers on a number line, abscissa (*x*-coordinate) of a point *Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • 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	
Lesson 6: Dividing Integers, pp. 200–203	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties *Statistics: Statistical Reports* • Arithmetic mean	*Arithmetic: Different Ways of Writing and Representing Numbers* • Using a variety of representations (e.g. numerical, graphic) *Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • 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 • Use of a calculator: operations and sequences of operations performed in the proper order	
Lesson 7: Order of Operations with Integers, pp. 204–207	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties • Order of operations and the use of no more than two levels of parentheses in different contexts *Statistics: Statistical Reports* • Arithmetic mean	*Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • 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 • Use of a calculator: operations and sequences of operations performed in the proper order	The student book uses the word “brackets” to refer to parentheses. Remind students that “brackets” is another name for “parentheses”.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes

Lesson A: The Distributive Property	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense*
	• Reading, writing, various representations, patterns, properties
	• Properties of operations:
	  • Distributive property of multiplication over addition or subtraction and factoring out the common factor
		Arithmetic: Different Ways of Writing and Representing Numbers
		• Recognizing and using equivalent ways of writing numbers:
		  • Decomposition of numbers (e.g. additive, multiplicative)
		  • Simplification and reduction
		Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation
		• Looking for equivalent expressions
		• 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
			New Lesson
			Student Resource
			Teacher Resource

Lesson B: The Distributive Property in Reverse	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense*
	• Reading, writing, various representations, patterns, properties
	• Inverse operations: addition and subtraction, multiplication and division, square and square root
	• Properties of operations:
	  • Distributive property of multiplication over addition or subtraction and factoring out the common factor
		Arithmetic: Different Ways of Writing and Representing Numbers
		• Recognizing and using equivalent ways of writing numbers:
		  • Decomposition of numbers (e.g. additive, multiplicative)
		  • Simplification and reduction
		Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation
		• Looking for equivalent expressions
		• 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 operationsNew Lesson
			New Lesson
			Student Resource
			Teacher Resource

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Lesson C: Rules of Signs for Decimals	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root • Rules of signs for numbers written in decimal notation • Inverse operations: addition and subtraction, multiplication and division, square and square root • Order of operations and the use of no more than two levels of parentheses in different contexts *Statistics: Statistical Reports* • Arithmetic mean	*Arithmetic: Different Ways of Writing and Representing Numbers* • Using a variety of representations (e.g. numerical, graphic) • Locating numbers on a number line, abscissa (x-coordinate) of a point *Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • 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 • Use of a calculator: operations and sequences of operations performed in the proper order	New Lesson Student Resource Teacher Resource
Lesson 8: Communicating about Calculations, pp. 208–210	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties • Inverse operations: addition and subtraction, multiplication and division, square and square root	*Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • 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	

Mental Math: Using Fractions to Solve Percent Problems, p. 211	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense*
	• Reading, writing, various representations, patterns, properties
	• Fractional, decimal and exponential (integral exponent) notation; percentage, square root
	Arithmetic: Understanding Proportionality
	• Ratio and rate
	  • Ratios and equivalent rates
	• Proportion
	  • Equality of ratios and rates
		Arithmetic: Different Ways of Writing and Representing Numbers
		• Recognizing and using equivalent ways of writing numbers:
		  • Equivalent fractions
		• Switching from one way of writing numbers to another or from one type of representation to another
		Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation
		• Mental computation: the four operations, especially with 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 Zero, p. 212	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties • Order of operations and the use of no more than two levels of parentheses in different contexts	*Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • 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	Optional
Chapter Self-Test: p. 213			Self-Assessment Opportunity
Chapter Review: pp. 214–215			Assessment Opportunity
Chapter Task: Mystery Integers, p. 216	*Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense* • Reading, writing, various representations, patterns, properties • Fractional, decimal and exponential (integral exponent) notation; percentage, square root • Rules of signs for numbers written in decimal notation • Order of operations and the use of no more than two levels of parentheses in different contexts	*Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation* • 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: To adjust this task for rules of operations with decimals, the numbers in the classroom can be changed to positive and negative decimals.
Chapters 4–6 Cumulative Review: pp. 217–218			Assessment Opportunity