

Chapter 8 Planning Chart: Variables, Expressions, and Equations

Cross-Curricular Competency: Communicates appropriately. Lesson 6 and the Curious Math feature provide students with an opportunity to improve and demonstrate their communication skills.

Broad Area of Learning: Environmental Awareness. Use the Learn about the Math in Lesson 5 to encourage a discussion about environmental issues. While trees are used as a windbreak for picnic tables in this paragraph, discuss how planting trees can help avoid soil erosion, for example.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Getting Started: Finding Checkerboard Patterns, pp. 270–271			Assessment Opportunity: Use prompts A–H and Questions 1–5, 6a), c).
Lesson 1: Exploring Pattern Relationships, pp. 272–273	<i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> Reading, writing, various representations, patterns, properties 	<i>Algebra</i> <ul style="list-style-type: none"> Overall representation of a situation by means of a graph 	Teaching and Learning: Prompt D instructs students to make a scatter plot. This reference can be changed to “Draw a graph.” The reference to “scatter plot” in Reflecting Question 1 should also be changed to “graph.”
Mental Math: Subtracting Decimals in Parts, p. 273	<i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> Reading, writing, various representations, patterns, properties Fractional, decimal and exponential (integral exponent) notation; percentage, square root 	<i>Arithmetic: Different Ways of Writing and Representing Numbers</i> <ul style="list-style-type: none"> Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> Decomposition of numbers (e.g. additive, multiplicative) <i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i> <ul style="list-style-type: none"> 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: Using Variables to Write Pattern Rules, pp. 274–277	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> Algebraic Expression <ul style="list-style-type: none"> Variable 	<i>Algebra</i> <ul style="list-style-type: none"> Constructing an algebraic expression 	
Lesson 3: Creating and Evaluating Expressions, pp. 278–281	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> Algebraic Expression <ul style="list-style-type: none"> Variable 	<i>Algebra</i> <ul style="list-style-type: none"> Constructing an algebraic expression Numerical evaluation of an algebraic expression 	Use Questions 1, 3–17.
Mid-Chapter Review: pp. 282–283			Assessment Opportunity
Lesson 4: Solving Equations by Inspection, pp. 284–287	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> Algebraic Expression <ul style="list-style-type: none"> Variable Equality, equation and unknown 	<i>Algebra</i> <ul style="list-style-type: none"> Constructing an algebraic expression Numerical evaluation of an algebraic expression Solving first-degree equations with one unknown <ul style="list-style-type: none"> Validation of the solution by substitution 	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Lesson 5: Solving Equations by Systematic Trial, pp. 288–291	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> Algebraic Expression <ul style="list-style-type: none"> Variable Equality, equation and unknown 	<i>Algebra</i> <ul style="list-style-type: none"> Constructing an algebraic expression Numerical evaluation of an algebraic expression Solving first-degree equations with one unknown <ul style="list-style-type: none"> Validation of the solution by substitution 	
Lesson 6: Communicating the Solutions for an Equation, pp. 292–294	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> Algebraic Expression <ul style="list-style-type: none"> Variable Equality, equation and unknown 	<i>Algebra</i> <ul style="list-style-type: none"> Constructing an algebraic expression Numerical evaluation of an algebraic expression Solving first-degree equations with one unknown <ul style="list-style-type: none"> Validation of the solution by substitution 	
Math Game: Alge-Match, p. 295	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> Algebraic Expression <ul style="list-style-type: none"> Variable Equality, equation and unknown 	<i>Algebra</i> <ul style="list-style-type: none"> Solving first-degree equations with one unknown 	Optional
Curious Math: Using Algebra to Solve Number Tricks, p. 296	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> Algebraic Expression <ul style="list-style-type: none"> Variable 	<i>Algebra</i> <ul style="list-style-type: none"> Constructing an algebraic expression Manipulating algebraic expressions <ul style="list-style-type: none"> Multiplication and division by a constant 	Optional
Chapter Self-Test: p. 297			Self-Assessment Opportunity
Chapter Review: pp. 298–299			Assessment Opportunity
Chapter Task: Letters, Patterns, and Algebra, p. 300	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> Algebraic Expression <ul style="list-style-type: none"> Variable Equality, equation and unknown 	<i>Algebra</i> <ul style="list-style-type: none"> Constructing an algebraic expression Solving first-degree equations with one unknown 	Assessment Opportunity
Math in Action: Business, pp. 301–302	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> Algebraic Expression <ul style="list-style-type: none"> Variable Equality, equation and unknown 	<i>Algebra</i> <ul style="list-style-type: none"> Constructing an algebraic expression Solving first-degree equations with one unknown 	Optional