

**Chapter 4 Planning Chart: Patterns and Relationships**

**Cross-Curricular Competency: Uses creativity.** Lesson 4 focuses on solving problems by examining simpler problems. Encourage students to broaden their problem solving skills by looking at a problem in many ways. Simplifying a problem in a creative way often leads to a solution of the more complicated problem.

**Broad Area of Learning: Citizenship and Community Life.** The Chapter Task provides a starting point for a discussion of sharing and giving to others in need.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<b>Getting Started</b> Calendar Patterns, pp. 122–123			Assessment Opportunity
<b>Lesson 1:</b> Exploring Relationships in the Fibonacci Sequence, pp. 124–125	<i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> <li>Reading, writing, various representations, patterns, properties</li> </ul>		
<b>Lesson 2:</b> Creating Pattern Rules from Models, pp. 126–129	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> <li>Algebraic expression                             <ul style="list-style-type: none"> <li>Variable</li> </ul> </li> </ul>	<i>Algebra</i> <ul style="list-style-type: none"> <li>Constructing an algebraic expression</li> <li>Recognizing and finding equivalent algebraic expressions</li> <li>Numerical evaluation of an algebraic expression</li> </ul>	
<b>Mental Imagery:</b> Moving Toothpicks, p. 129			Beyond Cycle One. Do not assess.
<b>Lesson 3:</b> The General Term of a Sequence, pp. 130–133	<i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> <li>Algebraic expression                             <ul style="list-style-type: none"> <li>Variable</li> </ul> </li> </ul>	<i>Algebra</i> <ul style="list-style-type: none"> <li>Constructing an algebraic expression</li> <li>Numerical evaluation of an algebraic expression</li> </ul>	
<b>Mid-Chapter Review:</b> pp. 134–135			Assessment Opportunity
<b>Lesson 4:</b> Solve Problems by Examining Simpler Problems, pp. 136–138	<i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> <li>Reading, writing, various representations, patterns, properties</li> </ul>		
<b>Curious Math:</b> Adding a Special Sequence of Numbers, p. 139	<i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> <li>Reading, writing, various representations, patterns, properties</li> <li>Properties of operations:                             <ul style="list-style-type: none"> <li>Commutative and associative properties</li> </ul> </li> </ul>	<i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i> <ul style="list-style-type: none"> <li>Mental computation: the four operations, especially with numbers written in decimal notation, using equivalent ways of writing numbers and the properties of operations</li> <li>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</li> </ul>	Optional
<b>Lesson 5:</b> Relating Number Sequences to Graphs, pp. 140–143			Beyond Cycle One. Do not assess.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<b>Math Game:</b> Sprouts, p. 144	<i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> </ul>		Optional
<b>Chapter Self-Test:</b> p. 145			Self-Assessment Opportunity: Select from Questions 1–5.
<b>Chapter Review:</b> pp. 146–147			Assessment Opportunity Omit the Frequently Asked Questions. Use Questions 1–4.
<b>Chapter Task:</b> Pyramid Patterns, p. 148	<i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> </ul> <i>Algebra: Understanding Algebraic Expressions</i> <ul style="list-style-type: none"> <li>• Algebraic expression               <ul style="list-style-type: none"> <li>• Variable</li> </ul> </li> </ul>	<i>Algebra</i> <ul style="list-style-type: none"> <li>• Constructing an algebraic expression</li> <li>• Numerical evaluation of an algebraic expression</li> </ul>	Assessment Opportunity