

**Chapter 2 Planning Chart: Ratio, Rate, and Percent**

**Cross-Curricular Competency: Cooperates with others.** The Chapter Task requires students to work together to collect information.

**Broad Area of Learning: Personal and Career Planning.** Lesson 4 and the Math in Action feature provide contexts for discussing possible careers and how mathematics is involved in those careers.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<b>Getting Started:</b> Making Number Comparisons, pp. 38–39			Assessment Opportunity
<b>Lesson 1:</b> Exploring Ratio Relationships, pp. 40–41	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>Reading, writing, various representations, patterns, properties</li> </ul> <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> <li>Proportion                             <ul style="list-style-type: none"> <li>Equality of ratios and rates</li> </ul> </li> </ul> <p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> <li>Congruent and similar figures</li> </ul>	<p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>Comparison of ratios and rates</li> <li>Recognizing a proportional situation by referring to the context, a table of values or a graph</li> </ul>	
<b>Lesson 2:</b> Solving Ratio Problems, pp. 42–45	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>Reading, writing, various representations, patterns, properties</li> <li>Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul> <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> <li>Proportion                             <ul style="list-style-type: none"> <li>Equality of ratios and rates</li> <li>Ratio and proportionality coefficient</li> </ul> </li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>Recognizing and using equivalent ways of writing numbers:                                     <ul style="list-style-type: none"> <li>Equivalent fractions</li> <li>Simplification and reduction</li> </ul> </li> </ul> <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>Comparison of ratios and rates</li> <li>Solving a proportional situation</li> </ul>	In the lesson, the term “scale factor” is used for what the QEP refers to as “the factor of change”.
<b>Lesson A:</b> Recognizing a Proportional Situation	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>Reading, writing, various representations, patterns, properties</li> <li>Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul> <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> <li>Ratio and rate                             <ul style="list-style-type: none"> <li>Ratios and equivalent rates</li> </ul> </li> <li>Proportion                             <ul style="list-style-type: none"> <li>Equality of ratios and rates</li> </ul> </li> </ul>	<p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>Comparison of ratios and rates</li> <li>Recognizing a proportional situation by referring to the context, a table of values or a graph</li> <li>Solving a proportional situation</li> </ul>	New Lesson Student Resource Teacher Resource

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<b>Lesson 3:</b> Solving Rate Problems, pp. 46–49	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul> <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> <li>• Ratio and rate <ul style="list-style-type: none"> <li>• Ratios and equivalent rates</li> <li>• Unit rate</li> </ul> </li> <li>• Proportion <ul style="list-style-type: none"> <li>• Equality of ratios and rates</li> </ul> </li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>• Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> <li>• Equivalent fractions</li> <li>• Simplification and reduction</li> </ul> </li> <li>• Switching from one way of writing numbers to another or from one type of representation to another</li> </ul> <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>• Comparison of ratios and rates</li> <li>• Recognizing a proportional situation by referring to the context, a table of values or a graph</li> <li>• Solving a proportional situation</li> </ul>	
<b>Lesson 4:</b> Communicating about Ratio and Rate Problems, pp. 50–52	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul> <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> <li>• Ratio and rate <ul style="list-style-type: none"> <li>• Ratios and equivalent rates</li> </ul> </li> <li>• Proportion <ul style="list-style-type: none"> <li>• Equality of ratios and rates</li> </ul> </li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>• Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> <li>• Equivalent fractions</li> <li>• Simplification and reduction</li> </ul> </li> </ul> <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>• Comparison of ratios and rates</li> <li>• Recognizing a proportional situation by referring to the context, a table of values or a graph</li> <li>• Solving a proportional situation</li> </ul>	
<b>Curious Math:</b> Food Ratios, p. 53	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul> <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> <li>• Ratio and rate <ul style="list-style-type: none"> <li>• Ratios and equivalent rates</li> </ul> </li> <li>• Proportion <ul style="list-style-type: none"> <li>• Equality of ratios and rates</li> </ul> </li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>• Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> <li>• Equivalent fractions</li> <li>• Simplification and reduction</li> </ul> </li> </ul> <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>• Comparison of ratios and rates</li> <li>• Recognizing a proportional situation by referring to the context, a table of values or a graph</li> <li>• Solving a proportional situation</li> </ul>	Optional
<b>Mid-Chapter Review:</b> pp. 54–55			Assessment Opportunity
<b>Lesson 5:</b> Ratios as Percents, pp. 56–59	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul> <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> <li>• Ratio and rate <ul style="list-style-type: none"> <li>• Ratios and equivalent rates</li> </ul> </li> <li>• Proportion <ul style="list-style-type: none"> <li>• Equality of ratios and rates</li> <li>• Ratio and proportionality coefficient</li> </ul> </li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>• Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> <li>• Equivalent fractions</li> <li>• Simplification and reduction</li> </ul> </li> <li>• Switching from one way of writing numbers to another or from one type of representation to another</li> </ul> <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>• Comparison of ratios and rates</li> <li>• Recognizing a proportional situation by referring to the context, a table of values or a graph</li> <li>• Solving a proportional situation</li> </ul>	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<p><b>Mental Math:</b> Multiplying by Tenths and Hundredth, p. 59</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul>	<p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <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> </ul>	
<p><b>Lesson 6:</b> Solving Percent Problems, pp. 60–63</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul> <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> <li>• Ratio and rate <ul style="list-style-type: none"> <li>• Ratios and equivalent rates</li> </ul> </li> <li>• Proportion <ul style="list-style-type: none"> <li>• Equality of ratios and rates</li> </ul> </li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>• Recognizing and using equivalent ways of writing numbers: <ul style="list-style-type: none"> <li>• Equivalent fractions</li> <li>• Simplification and reduction</li> </ul> </li> <li>• Switching from one way of writing numbers to another or from one type of representation to another</li> </ul> <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> <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> <li>• Use of a calculator: operations and sequences of operations performed in the proper order</li> </ul> <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>• Recognizing a proportional situation by referring to the context, a table of values or a graph</li> <li>• Solving a proportional situation</li> </ul>	
<p><b>Lesson 7:</b> Decimal Multiplication, pp. 64–67</p>	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>• Using a variety of representations (e.g. numerical, graphic)</li> <li>• Switching from one way of writing numbers to another or from one type of representation to another</li> </ul> <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> <li>• Estimating and rounding numbers in different situations</li> <li>• Approximating the result of an operation</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>	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<b>Lesson 8:</b> Decimal Division, pp. 68–71	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>• Using a variety of representations (e.g. numerical, graphic)</li> <li>• Switching from one way of writing numbers to another or from one type of representation to another</li> </ul> <p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> <li>• Estimating and rounding numbers in different situations</li> <li>• Approximating the result of an operation</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>	
<b>Math Game:</b> Wastepaper Basketball, p. 72	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>• Switching from one way of writing numbers to another or from one type of representation to another</li> </ul> <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>• Comparison of ratios and rates</li> <li>• Recognizing a proportional situation by referring to the context, a table of values or a graph</li> </ul>	Optional
<b>Chapter Self-Test:</b> p. 73			Self-Assessment Opportunity
<b>Chapter Review:</b> pp. 74–75			Assessment Opportunity
<b>Chapter Task:</b> Ball Bounce-ability, p. 76	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul> <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> <li>• Proportion <ul style="list-style-type: none"> <li>• Equality of ratios and rates</li> </ul> </li> </ul>	<p><i>Arithmetic: Different Ways of Writing and Representing Numbers</i></p> <ul style="list-style-type: none"> <li>• Switching from one way of writing numbers to another or from one type of representation to another</li> </ul> <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>• Comparison of ratios and rates</li> <li>• Recognizing a proportional situation by referring to the context, a table of values or a graph</li> </ul>	Assessment Opportunity
<b>Math in Action:</b> Rock Band Manager, pp. 77–78	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> <li>• Reading, writing, various representations, patterns, properties</li> <li>• Fractional, decimal and exponential (integral exponent) notation; percentage, square root</li> </ul>	<p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> <li>• Recognizing a proportional situation by referring to the context, a table of values or a graph</li> <li>• Solving a proportional situation</li> </ul>	Optional