

Chapter 2 Planning Chart: Proportional Relationships

Cross-Curricular Competency: Achieves his/her potential. The Learn about the Math in Lesson 5 provides an opportunity to discuss overcoming difficulties and reaching one's potential.

Broad Area of Learning: Health and Well-Being. The Learn about the Math in Lessons 1 and 5 and Question 11 in Lesson 6 provide opportunities to discuss eating well and exercising as part of a healthy lifestyle.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Getting Started: Buying Fish, pp. 46–47			Assessment Opportunity
Lesson 1: Expressing Fractions as Decimals, pp. 48–50	<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"> • Estimating the order of magnitude • 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 (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 • Looking for equivalent expressions • Approximating the result of an operation • Mental computation: the four operations, especially with 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 	
Curious Math: Repeating Decimal Patterns, p. 51	<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 	<p><i>Arithmetic: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Use of a calculator: operations and sequences of operations performed in the proper order 	Optional
Lesson 2: Multiplying and Dividing Decimals, pp. 52–55	<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: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <ul style="list-style-type: none"> • Estimating and rounding numbers in different situations • Approximating the result of an operation • 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 Ratios, pp. 56–57	<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 <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates 	<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) 	
Math Game: Equivalent Concentration, p. 57	<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: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates 	<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 • Switching from one way of writing numbers to another or from one type of representation to another <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Comparison of ratios and of rates 	Optional
Lesson 4: Ratios, pp. 58–61	<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 <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates • Ratio and proportionality coefficient 	<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"> • 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 • Use of a calculator: operations and sequences of operations performed in the proper order <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Comparison of ratios and of rates • Recognizing a proportional situation by referring to the context, a table of values or a graph • Solving a proportional situation 	The lesson uses the term “scale factor” to refer to what is called “proportionality coefficient” in the QEP. Explain to students that the terms have the same meaning.
Mid-Chapter Review: pp. 62–63			Assessment Opportunity

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<p>Lesson 5: Rates, 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"> • Reading, writing, various representations, patterns, properties <p><i>Arithmetic: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Unit rate • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates • Ratio and proportionality coefficient 	<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"> • 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 • Use of a calculator: operations and sequences of operations performed in the proper order <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Comparison of ratios and of rates • Recognizing a proportional situation by referring to the context, a table of values or a graph • Solving a proportional situation 	
<p>Lesson 6: Representing Percent, pp. 68–71</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: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates • Ratio and proportionality coefficient 	<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 • Switching from one way of writing numbers to another or from one type of representation to another <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Recognizing a proportional situation by referring to the context, a table of values or a graph • Solving a proportional situation 	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<p>Lesson 7: Solving Percent Problems, pp. 72–75</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: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates • Ratio and proportionality coefficient 	<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 • 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 • Use of a calculator: operations and sequences of operations performed in the proper order <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Recognizing a proportional situation by referring to the context, a table of values or a graph • Solving a proportional situation 	
<p>Lesson 8: Solving Percent Problems Using Decimals, pp. 76–78</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: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates • Ratio and proportionality coefficient 	<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 • 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 • Use of a calculator: operations and sequences of operations performed in the proper order <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Recognizing a proportional situation by referring to the context, a table of values or a graph • Solving a proportional situation 	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Lesson A: Direct Variation	<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: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Unit rate • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates • Ratio and proportionality coefficient • Direct or inverse variation 	<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 • Switching from one way of writing numbers to another or from one type of representation to another <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Comparison of ratios and of rates • Recognizing a proportional situation by referring to the context, a table of values or a graph • Solving a proportional situation 	New Lesson Student Resource Teacher Resource
Lesson B: Inverse Variation	<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: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Unit rate • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates • Ratio and proportionality coefficient • Direct or inverse variation 	<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 • Switching from one way of writing numbers to another or from one type of representation to another <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Comparison of ratios and of rates • Recognizing a proportional situation by referring to the context, a table of values or a graph • Solving a proportional situation 	New Lesson Student Resource Teacher Resource
Mental Math: Simplifying Percents and Fractions, p. 79	<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: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates • Ratio and proportionality coefficient 	<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 • 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"> • Mental computation: the four operations, especially with numbers written in decimal notation, using equivalent ways of writing numbers and the properties of operations <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Comparison of ratios and of rates 	

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<p>Lesson 9: Solve Problems by Changing Your Point of View, pp. 80–82</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: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates <p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> • Plane figures <ul style="list-style-type: none"> • Measurement <ul style="list-style-type: none"> • Area, lateral area, total area 	<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 • Approximating the result of an operation • 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 <p><i>Geometry</i></p> <ul style="list-style-type: none"> • Finding unknown measurements <ul style="list-style-type: none"> • Areas <ul style="list-style-type: none"> • Areas of polygons that can be split into triangles and quadrilaterals 	
<p>Chapter Self-Test: p. 83</p>			Self-Assessment Opportunity
<p>Chapter Review: pp. 84–85</p>			Assessment Opportunity
<p>Chapter Task: An Unexpected Inheritance, p. 86</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: Operations Involving Numbers Written in Decimal and Fractional Notation</i></p> <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 <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Recognizing a proportional situation by referring to the context, a table of values or a graph • Solving a proportional situation 	Assessment Opportunity

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
<p>Math in Action: Coach, pp. 87–88</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: Understanding Proportionality</i></p> <ul style="list-style-type: none"> • Ratio and rate <ul style="list-style-type: none"> • Ratios and equivalent rates • Unit rate • Proportion <ul style="list-style-type: none"> • Equality of ratios and rates • Ratio and proportionality coefficient 	<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"> • 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 • Use of a calculator: operations and sequences of operations performed in the proper order <p><i>Arithmetic: Working With a Proportional Situation</i></p> <ul style="list-style-type: none"> • Recognizing a proportional situation by referring to the context, a table of values or a graph • Solving a proportional situation 	<p>Optional</p>