

Chapter 5 Planning Chart: Measurement of Circles

Cross-Curricular Competency: Adopts effective work methods. Many of the calculations in Chapter 5 involve π . Discuss with students scenarios in which varying degrees of accuracy are needed in these calculations. Do answers need to be exact? Will one or two decimal places suffice? Explain that understanding the degree of accuracy necessary in a particular situation can eliminate unnecessary work.

Broad Area of Learning: Personal and Career Planning. Use the Math in Action feature as a basis for a discussion of careers in architecture or engineering and the role that math, particularly geometric concepts from Chapter 5, play in those careers.

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Getting Started: Designing a Label, pp. 150–151			Assessment Opportunity
Lesson 1: Exploring Circles, pp. 152–153	<p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> Plane figures <ul style="list-style-type: none"> Circle and sector <ul style="list-style-type: none"> Radius, diameter, chord, arc Measurement <ul style="list-style-type: none"> Degree: angle and arc Length Perimeter, circumference 	<p><i>Geometry</i></p> <ul style="list-style-type: none"> Geometric constructions 	
Lesson 2: Exploring Circumference and Diameter, pp. 154–155	<p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> Plane figures <ul style="list-style-type: none"> Circle and sector <ul style="list-style-type: none"> Radius, diameter, chord, arc Measurement <ul style="list-style-type: none"> Length Perimeter, circumference 	<p><i>Geometry: Finding unknown measurements</i></p> <ul style="list-style-type: none"> Lengths <ul style="list-style-type: none"> Circumference of a circle and arc length 	
Mental Imagery: Determining the Regular Price, p. 155	<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"> Using a variety of representations (e.g. numerical, graphic) 	Optional
Lesson 3: Calculating Circumference, pp. 156–159	<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"> Ratio and proportionality coefficient <p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> Plane figures <ul style="list-style-type: none"> Circle and sector <ul style="list-style-type: none"> Radius, diameter, chord, arc Measurement <ul style="list-style-type: none"> Perimeter, circumference 	<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 Use of a calculator: operations and sequences of operations performed in the proper order <p><i>Geometry: Finding unknown measurements</i></p> <ul style="list-style-type: none"> Lengths <ul style="list-style-type: none"> Circumference of a circle and arc length 	
Mid-Chapter Review: pp. 160–161			Assessment Opportunity

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Lesson 4: Estimating Area, pp. 162–163	<p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> Plane figures <ul style="list-style-type: none"> Circle and sector <ul style="list-style-type: none"> Radius, diameter, chord, arc Measurement <ul style="list-style-type: none"> Length 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 <p><i>Geometry: Finding unknown measurements</i></p> <ul style="list-style-type: none"> Areas <ul style="list-style-type: none"> Area of polygons that can be split into triangles and quadrilaterals Area of circles and sectors 	
Lesson 5: Calculating Area, pp. 164–167	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> 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 <p><i>Geometry: Finding unknown measurements</i></p> <ul style="list-style-type: none"> Lengths <ul style="list-style-type: none"> Circumference of a circle and arc length Areas <ul style="list-style-type: none"> Area of figures that can be split into circles, triangles or quadrilaterals Area of circles and sectors 	
Lesson A: Central Angles, Arc Length, and Sector Area	<p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> Plane figures <ul style="list-style-type: none"> Circle and sector <ul style="list-style-type: none"> Radius, diameter, chord, arc Central angle Measurement <ul style="list-style-type: none"> Degree: angle and arc Length Perimeter, circumference 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 <p><i>Geometry: Finding unknown measurements</i></p> <ul style="list-style-type: none"> Lengths <ul style="list-style-type: none"> Circumference of a circle and arc length Areas <ul style="list-style-type: none"> Area of circles and sectors 	New Lesson Student Resource Teacher Resource
Lesson 6: Solve Problems by Working Backward, pp. 168–171	<p><i>Arithmetic: Number Sense With Regard to Decimal and Fractional Notation and Operation Sense</i></p> <ul style="list-style-type: none"> Fractional, decimal and exponential (integral exponent) notation; percentage, square root Inverse operations: addition and subtraction, multiplication and division, square and square root <p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> Plane figures <ul style="list-style-type: none"> Circle and sector <ul style="list-style-type: none"> Radius, diameter, chord, arc 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 <p><i>Geometry: Finding unknown measurements</i></p> <ul style="list-style-type: none"> Areas <ul style="list-style-type: none"> Area of circles and sectors 	
Curious Math: Cutting Paper Strips, p. 171			Optional

Content	QEP Concepts	QEP Processes	Addressing Concepts and Processes
Math Game: Rolling Circles, p. 172	<p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> Plane figures <ul style="list-style-type: none"> Circle and sector <ul style="list-style-type: none"> Radius, diameter, chord, arc Central angle 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 <p><i>Geometry: Finding unknown measurements</i></p> <ul style="list-style-type: none"> Areas <ul style="list-style-type: none"> Area of circles and sectors 	Optional
Chapter Self-Test: p. 173			Self-Assessment Opportunity
Chapter Review: pp. 174–175			Assessment Opportunity
Chapter Task: Designing a Camp, p. 176	<p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> Plane figures <ul style="list-style-type: none"> Circle and sector <ul style="list-style-type: none"> Radius, diameter, chord, arc Measurement <ul style="list-style-type: none"> Perimeter, circumference 	<p><i>Geometry: Finding unknown measurements</i></p> <ul style="list-style-type: none"> Lengths <ul style="list-style-type: none"> Circumference of a circle and arc length 	Assessment Opportunity
Math in Action: Architect, pp. 177–178	<p><i>Geometry: Geometric Figures and Spatial Sense</i></p> <ul style="list-style-type: none"> Plane figures <ul style="list-style-type: none"> Circle and sector <ul style="list-style-type: none"> Radius, diameter, chord, arc Measurement <ul style="list-style-type: none"> Length Perimeter, circumference 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 <p><i>Geometry: Finding unknown measurements</i></p> <ul style="list-style-type: none"> Lengths <ul style="list-style-type: none"> Perimeter of a plane figure Circumference of a circle and arc length Unknown measure of a segment in a plane figure Areas <ul style="list-style-type: none"> Area of circles and sectors 	Optional