

UNIT SIX: Exploring Quadrilaterals

Section 6-1: Parallelograms

- Quadrilaterals
- Parallelograms
- Diagonals

Section 6-2: Tests for Parallelogram

- A Quadrilateral is a parallelogram if:
 - o Both pairs of opposite sides are parallel
 - o Both pairs of opposite sides are congruent
 - o Both pairs of opposite angles are congruent
 - o Diagonals bisect each other

Section 6-3: Rectangles

- Rectangles has four right angles
- Diagonals are congruent
- Parallelogram

Section 6-4: Squares and Rhombi

- Rhombi = four congruent sides
- Square = four congruent sides/angles
- Diagonals are perpendicular and bisect opposite angles

Section 6-5: Trapezoids

- Legs and Bases
- Isosceles Trapezoid
- Median

UNIT SEVEN: Connecting Proportion and Similarity

Section 7-1: Using Proportions

- ratios
- proportion
- Equality of Cross Products

Section 7-2: Exploring Similar Polygons

- definition
 - o Congruent angles
 - o Proportional sides
- scale factor

Sections 7-3: Identifying Similar Triangles

- AA Similarity = Angle Angle
- SSS Similarity = Side Side Side
- SAS Similarity = Side Angle Side

Section 7-4: Parallel Lines and Proportional Parts

- Triangle Proportionality
- Parallel line intersecting \Leftrightarrow Proportional lengths

Section 7-5: Parts of Similar Triangles

- Similar Triangle Experiment
 - o Perimeter
 - o Altitudes
 - o Angle Bisector
 - o Medians

UNIT EIGHT: Applying Right Triangles and Trigonometry

Section 8-1: Geometric Mean and the Pythagorean Theorem

- Geometric Mean
- Altitude drawn from the right angle of a right triangle
- Pythagorean Theorem
- Converse of the Pythagorean Theorem

Section 8-2: Special Triangles

- 45-45-90 Triangle
- 30-60-90 Triangle

Section 8-3: Trigonometry

- Sine = $\frac{\textit{opposite}}{\textit{hypotenuse}}$
- Cosine = $\frac{\textit{adjacent}}{\textit{hypotenuse}}$
- Tangent = $\frac{\textit{opposite}}{\textit{adjacent}}$

UNIT NINE: Analyzing Circles

Section 9-1: Exploring Circles

- Circle
- Center
- Radius
- Diameter
- Chord
- Circumference = $\pi d = \pi 2r$

Section 9-2: Angles and Arcs

- Central Angle
- Arcs
 - o Major Arc
 - o Minor Arc
 - o Semicircle
- Arc Length

Section 9-4: Arcs and Chords

- Inscribed angles
- Intercepted arc
- Inscribed angle is half the measure of the intercepted arc
- Inscribed quadrilateral

Section 9-5: Tangents

- Tangent Line
- Point of Tangency
 - o Radius drawn to is perpendicular to the tangent line
- Common Internal Tangent
- Common External Tangent
- Two tangent segments drawn to the same exterior point are congruent

Section 9-6: Secants, Tangents and Angle Measure

- Secant
- Angle Measure
 - o Vertex on the Circle
 - o Vertex in the Circle
 - o Vertex outside the Circle

UNIT TEN: Exploring Polygons and Area

Section 10-1: Polygons

- Definition of a Polygon
- Convex
- Concave
- Common Names for 3 – 10, 12 sided Polygons
- N-gon
- Regular Polygons
- Sum of Interior Angles $\rightarrow 180(\text{side} - 2)$

Section 10-3 to 10-5: Area of Polygons

- Area and Perimeter of:
 - o Rectangles
 - o Squares
 - o Parallelograms
 - o Triangles
 - o Trapezoids
 - o Rhombi
 - o Regular Polygons
 - o Circles

Section 10-6: Networks

- Open/Closed
- Complete/Incomplete
- Traceable/Non-Traceable

UNIT ELEVEN: Exploring 3 Dimensional Solids

Section 11-1: Three-Dimensional Figures

- Polyhedra/Non Polyhedra
- Prisms/Non Prisms
- Regular Prisms
- Platonic Solids
 - o Tetrahedra
 - o Hexahedra
 - o Octahedra
 - o Dodecahedra
 - o Icosahedra

Section 11-2: Converting Two Dimensions to Three

- Shading/Dotted Lines/Corner Views
- 5 Perspective Drawings
- Nets
- Models