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Geometry

Sessions 1 to 144

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Sessions 1 - 16

Basics of Geometry

- Points, Lines, and Planes
- Measuring and Constructing Segments
- Using Midpoint and Distance Formulas
- Perimeter and Area in the Coordinate Plane
- Measuring and Constructing Angles
- Describing Pairs of Angles
- **Checkpoint Assessment-1**

Sessions 17 - 24

Reasoning and Proofs

- Conditional Statements
- Inductive and Deductive Reasoning
- Postulates and Diagrams
- Algebraic Reasoning
- Proving Statement about Segments and Angles
- Proving Geometric Relationships
- **Checkpoint Assessment- 2**

Sessions 25 - 32

Parallel and Perpendicular Lines

- Pairs of Lines and Angles
- Parallel Lines and Transversals
- Proofs with Parallel Lines
- Proofs with Perpendicular Lines
- Equations of Parallel and Perpendicular Lines
- **Checkpoint Assessment-3**

Sessions 33 - 48

Transformations

- Translations
- Reflections
- Rotations
- Congruence and Transformations
- Dilations
- Similarity and Transformations
- **Checkpoint Assessment-4**

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Sessions 49 - 60

Congruent Triangles

- Angles of Triangles
- Congruent Polygons
- Proving Triangle Congruence by SAS
- Equilateral and Isosceles Triangles
- Proving Triangle Congruence by SSS
- Proving Triangle Congruence by ASA and AAS
- Using Congruent Triangles
- Coordinate Proofs
- **Checkpoint Assessment- 5**

Sessions 61 - 68

Relationships Within Triangles

- Perpendicular and Angle Bisectors
- Bisectors of Triangles
- Medians and Altitudes of Triangles
- The Triangle Midsegment Theorem
- Indirect Proof and Inequalities in One Triangle
- Inequalities in Two Triangles
- **Checkpoint Assessment- 6**

Sessions 69 - 76

Quadrilaterals and Other Polygons

- Angles of Polygons
- Properties of Parallelograms
- Proving That a Quadrilateral is a Parallelogram
- Properties of Special Parallelograms
- Properties of Trapezoids and Kites
- **Checkpoint Assessment- 7**

Sessions 77 - 82

Similarity

- Similar Polygons
- Proving Triangle Similarity by AA
- Proving Triangle Similarity by SSS and SAS
- Proportionality Theorems
- **Checkpoint Assessment- 8**

Sessions 83 - 94

Right Triangles and Trigonometry

- The Pythagorean Theorem
- Special Right Triangles
- Similar Right Triangles
- The Tangent Ratio
- The Sine and Cosine Ratios
- Solving Right Triangles
- Law of Sines and Law of Cosines
- **Checkpoint Assessment- 9**

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Sessions 95 - 104

Circles

- Lines and Segments that Intersect Circles
- Finding Arc Measures
- Using Chords
- Inscribed Angles and Polygons
- Angle Relationships in Circles
- Segment Relationships in Circles
- Circles in the Coordinate Plane
- **Checkpoint Assessment- 10**

Sessions 105 - 120

Circumference, Area, and Volume

- Circumference and Arc Length
- Areas of Circles and Sectors
- Areas of Polygons
- Three Dimensional Figures
- Volumes of Prisms and Cylinders
- Volumes of Pyramids
- Surface Areas and Volumes of Cones
- Surface Areas and Volumes of Spheres
- **Checkpoint Assessment- 11**

Sessions 121 - 144

Probability

- Sample Spaces and Probability
- Independent and Dependent Events
- Two-Way Tables and Probability
- Probability of Disjoint and Overlapping Events
- Permutations and Combinations
- Binomial Distributions
- Finding cubes of numbers just near 10 and 100
- **Checkpoint Assessment- 12**