

Geometry
West Aurora School District
State Goal 7 – Measurement

STATE GOAL 7 – Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.

Concepts: Need to Know About Measurement

- Common Geometric Figure Measurements
 - Length, Width, Height
 - Perimeter/Circumference
 - Area
 - Volume
 - Surface Area
 - Angle Measures (and Sums of Angles)

Skills: Be Able to Do

- **Determine** (Common Geometric Figure Measurements)
- **Calculate** (Common Geometric Figure Measurements)

Topics or Contexts: Grocery Store Geometry, Robot Project

Various lessons in textbook

Problem solving activities involving real-life situations

Big Ideas

Essential Questions

Geometry
West Aurora School District
State Goal 8 – Algebra

STATE GOAL 8 – Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.

Concepts: Need to Know About Algebra

- Circle Equations

Skills: Be Able to Do

- **Identify** (Equations that Represent the Family of Circles)
- **Interpret** (Information Found in Equations of Circles)
- **Write** (Equations of Circles Given Algebraic and Graphical Information)

Topics or Contexts: Review the families of functions. Compare and contrast families of functions with the circle family.

Translate between graphical and algebraic representations of circles.

Various lessons in textbook

Problem solving activities involving real-life situations

Big Ideas

Essential Questions

Geometry
West Aurora School District
State Goal 9 – Geometry

STATE GOAL 9 – Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes, and space.

Concepts: Need to Know About Geometry

- Pythagorean Theorem
- Transformations
 - Rotations
 - Reflections
 - Translations
 - Dilations
- Geometric Properties of Plane Figures
 - Triangles
 - Quadrilaterals
 - Parallel Lines Cut by a Transversal
 - Angles
 - Diagonals
 - Triangle Inequality
- Coordinate Geometry
 - Distance
 - Midpoint
 - Slope
- Geometric Relationships of Circles
 - Arcs
 - Chords
 - Tangents
 - Secants
 - Angles
- Similar Figures
- Triangle Congruence
- Mathematical Axioms
- Geometrical Axioms
- Fundamental Theorems of Geometry
- Deductive Reasoning
- Special Right Triangles
- Trigonometric Ratios

Skills: **Be Able to Do**

- **Apply** (Pythagorean Theorem, Geometric Properties of Plane Figures, Geometric Relationships of Circles, Mathematical Axioms, Geometric Axioms, Fundamental Theorems of Geometry, and Deductive Reasoning)
- **Identify** (Transformations, Geometric Properties of Plane Figures, Geometric Relationships of Circles, and Trigonometric Ratios)
- **Represent** (Transformations Graphically)
- **Describe** (Transformation Effects in Words or Coordinates)
- **Solve** (Problems Involving Geometric Properties of Plane Figures, Coordinate Geometry, Geometric Relationships of Circles, Similar Figures, Triangle Congruence, and Right Triangles)
- **Calculate** (Distance, Midpoint, and Slope)
- **Use** (Ratios and Proportions with Similar Figures)
- **Recognize** (Mathematical Axioms, Geometric Axioms, Fundamental Theorems of Geometry, and Deductive Reasoning)
- **Define** (Trigonometric Ratios)
- **Evaluate** (Trigonometric Ratios)

Topics or Contexts: Include circle relationships such as inscribed, concentric, circumscribed, and internal/external tangency.

Similar figure problems would include problems involving linear measure, perimeter, area, surface area, and volume.

This course's trigonometry focus is on right triangles.

Exact simplified answers should be given whenever possible.

Projects

Various lessons in textbook

Problem solving activities involving real-life situations

Big Ideas

Essential Questions