

## Geometry Concepts A

### Successful students will be able to:

- Name, draw, and identify undefined terms and find their measurements
- Name, draw, and identify angles and pairs of angles (complementary, supplementary, vertical) and find their measurements
- Perform geometric transformations on the coordinate plane
- Find distance and midpoint in the coordinate plane
- Use deductive and inductive reasoning to make conjectures
- Write algebraic proofs
- Understand the properties associated with parallel and perpendicular lines
- Verify geometric conjectures involving lines cut by a transversal
- Classify triangles by side length and angle measure, and understand their properties
- Understand angle relationships in triangles
- Verify geometric conjectures to prove triangles are congruent and that parts of triangles are congruent
- Use and apply the Pythagorean Theorem and its converse
- Use the side relationships in special right triangles to find missing side lengths
- Perform basic geometric constructions using a compass and a straightedge

## Geometry Concepts B

### Successful students will be able to:

- Classify polygons and special quadrilaterals and apply their properties
- Apply properties of parallelograms and special parallelograms
- Show that a quadrilateral is a parallelogram, or a special parallelogram
- Apply ratios and proportions in similar polygons
- Prove that triangles are similar
- Perform dilations in the coordinate plane
- Identify and apply trigonometric ratios in right triangles and special right triangles
- Solve problems involving angles of elevation and depression
- Use geometric formulas to find area, perimeter, and circumference of polygons, circles (sector and segment), and composite geometric figures on the coordinate plane
- Interpret the effects of changing dimensions proportionally on area, surface area, and volume
- Find volume and surface area of solids including prisms, pyramids, cones, cylinders, and spheres
- Describe and represent three-dimensional figures as nets, orthographic drawings, and graphs
- Calculate midpoint and distance between two points in three-dimensional space
- Identify lines and segments that intersect circles and interpret relations between these lines
- Identify angles that intersect circles and interpret relations between these angles and their intercepts arcs
- Find length of an arc
- Graph circles in the coordinate plane