

New Jersey 6th Grade Geometry Standards “Geometry: Circling the Bases”

A. Geometric Properties

1. Understand and apply concepts involving lines and angles.
 - Notation for line, ray, angle, line segment
 - Properties of parallel, perpendicular, and intersecting lines
 - Sum of the measures of the interior angles of a triangle is 180°
2. Identify, describe, compare, and classify polygons and circles.
 - Triangles by angles and sides
 - Quadrilaterals, including squares, rectangles, parallelograms, trapezoids, rhombi
 - Polygons by number of sides.
 - Equilateral, equiangular, regular
 - All points equidistant from a given point form a circle
3. Identify similar figures.
4. Understand and apply the concepts of congruence and symmetry (line and rotational).
5. Compare properties of cylinders, prisms, cones, pyramids, and spheres.
6. Identify, describe, and draw the faces or shadows (projections) of three-dimensional geometric objects from different perspectives.
7. Identify a three-dimensional shape with given projections (top, front and side views).
8. Identify a three-dimensional shape with a given net (i.e., a flat pattern that folds into a 3D shape).

B. Transforming Shapes

1. Use a translation, a reflection, or a rotation to map one figure onto another congruent figure.
2. Recognize, identify, and describe geometric relationships and properties as they exist in nature, art, and other real-world settings.

C. Coordinate Geometry

1. Create geometric shapes with specified properties in the first quadrant on a coordinate grid.

D. Units of Measurement

1. Select and use appropriate units to measure angles, area, surface area, and volume.
2. Use a scale to find a distance on a map or a length on a scale drawing.
3. Convert measurement units within a system (e.g., 3 feet = ___ inches).
4. Know approximate equivalents between the standard and metric systems (e.g., one kilometer is approximately $\frac{6}{10}$ of a mile).
5. Use measurements and estimates to describe and compare phenomena.

E. Measuring Geometric Objects

1. Use a protractor to measure angles.
2. Develop and apply strategies and formulas for finding perimeter and area.
 - Triangle, square, rectangle, parallelogram, and trapezoid
 - Circumference and area of a circle
3. Develop and apply strategies and formulas for finding the surface area and volume of rectangular prisms and cylinders.
4. Recognize that shapes with the same perimeter do not necessarily have the same area and vice versa.
5. Develop informal ways of approximating the measures of familiar objects (e.g., use a grid to approximate the area of the bottom of one's foot).