

Math 9

Shape and Space



I Can Statements:

1. **Circle Properties** – Solve problems and justify the solution strategy, using the following circle properties:
 - The perpendicular from the centre of a circle to a chord bisects the chord.
 - The measure of the central angle is equal to twice the measure of the inscribed angle subtended by the same arc.
 - The inscribed angles subtended by the same arc are congruent.
 - A tangent to a circle is perpendicular to the radius at the point of tangency.
 - ☐ I can solve problems using properties of chords in circles.
 - ☐ I can solve problems using properties of angles in circles.
 - ☐ I can solve problems using the tangent of a circle.
2. **Surface Area** – Determine the surface area of composite 3-D objects to solve problems (limited to right rectangular prisms, right triangular prisms, and right cylinders).
 - ☐ I can identify the faces of a composite 3-D object.
 - ☐ I can dissect the faces of 3-D objects into triangles, circles, and rectangles (or parts of these shapes).
 - ☐ I can determine the dimensions needed to calculate the surface area of composite 3-D objects.
 - ☐ I can calculate the surface area of composite 3-D objects.
 - ☐ I can solve problems involving surface area.
3. **Similarity** – Demonstrate an understanding of similarity of polygons.
 - ☐ I can determine if two polygons are similar and justify my solution.
 - ☐ I can draw a polygon that is similar to another.
 - ☐ I can solve problems involving similar polygons.
4. **Scale Diagrams** – Draw and interpret scale diagrams of 2-D shapes.
 - ☐ I can draw a diagram to scale.
 - ☐ I can determine the scale factor for a given diagram.
 - ☐ I can solve problems involving scale.

5. Symmetry – Demonstrate an understanding of line and rotation symmetry.

- ☐ I can determine if a shape has line symmetry.
- ☐ I can determine is a shape has rotation symmetry.
- ☐ I can describe line symmetry using appropriate mathematical vocabulary.
- ☐ I can describe rotation symmetry using appropriate mathematical vocabulary
- ☐ I can create shapes that demonstrate line and/or rotation symmetry.

VOCABULARY

Grade 7

Radius
Diameter
Circumference
Pi
Central Angle
Compass
Protractor
Degree
Parallelogram
Formula
Area
Parallel
Perpendicular
Bisector
Line
Line Segment
Cartesian Plane
Axes
Ordered Pair
Coordinates
Quadrant
Vertices
Transformation

Translation
Reflection
Rotation
Image
Horizontal
Vertical
Consecutive
Clockwise
Counter-Clockwise
Grade 8
Pythagorean Theorem
Hypotenuse
Legs
Right Triangle
Right Angle
Net
3 Dimensional Object
Prism
Cylinder
Faces
Base
Height
Surface Area
Volume

Capacity
Vertex
Polygon
Congruent

Grade 9

Chord
Arc
Inscribed Angle
Tangent
Perpendicular Bisector
Composite Object
Similar
Scale
Scale Factor
Enlargement
Reduction
Symmetry
Line Symmetry
Rotation Symmetry
Line of Symmetry
Order