

6th grade New York State Standards
“Geometry: Circling the Bases”

Problem Solving

- 6.PS.1 Know the difference between relevant and irrelevant information when solving problems
- 6.PS.2 Understand that some ways of representing a problem are more efficient than others
- 6.PS.3 Interpret information correctly, identify the problem, and generate possible strategies and solutions
- 6.PS.4 Act out or model, with manipulatives, activities involving mathematical content from literature
- 6.PS.5 Formulate problems and solutions from everyday situations
- 6.PS.6 Translate from a picture/diagram to a numeric expression
- 6.PS.7 Represent problem situations verbally, numerically, algebraically, and/or graphically
- 6.PS.8 Select an appropriate representation of a problem
- 6.PS.9 Understand the basic language of logic in mathematical situations (and, or, and not)
- 6.PS.10 Work in collaboration with others to solve problems
- 6.PS.11 Translate from a picture/diagram to a number of symbolic expression
- 6.PS.13 Model problems with pictures/diagrams or physical objects
- 6.PS.16 Discuss with peers to understand a problem situation
- 6.PS.17 Determine what information is needed to solve problem
- 6.PS.19 Differentiate between valid and invalid approaches
- 6.PS.22 Discuss whether a solution is reasonable in the context of the original problem

Reasoning and Proof

- 6.RP.1 Recognize that mathematical ideas can be supported using a variety of strategies
- 6.RP.2 Understand that mathematical statements can be supported using models, facts and relationships to explain their thinking.

6.RP.6 Develop and explain an argument verbally, numerically, algebraically and/or graphically.

Communication

6.CM.1 Provide an organized thought process that is correct, complete, coherent, and clear

6.CM.2 Explain a rationale for strategy selection

6.CM.4 Share organized mathematical ideas through the manipulation of objects, numerical tables, drawings, pictures, charts, graphs, tables, diagrams, models and symbols in written and verbal form

6.CM.6 Understand mathematical solutions shared by other students

6.CM.7 Raise questions that elicit, extend, or challenge others’ thinking

6.CM.8 Consider strategies used and solutions found by others in relation to their own work

6.CM.10 Use appropriate vocabulary when describing objects, relationships, mathematical solutions, and rationale

6.CM.11 Decode and comprehend mathematical visuals and symbols to construct meaning

Connection

6.CN.1 Understand and make connections and conjectures in their everyday experiences to mathematical ideas

6.CN.2 Explore and explain the relationship between mathematical ideas

6.CN.3 Connect and apply mathematical information to solve problems

6.CN.4 Understand multiple representations and how they are related

6.CN.5 Model situations with objects and representations and be able to draw conclusions

6.CN.6 Recognize and provide examples of the presence of mathematics in their daily lives

6.CN.7 Apply mathematics to problem situations that develop outside of mathematics

6.CN.8 Investigate the presence of mathematics in careers and areas of interest

6.CN.9 Recognize and apply mathematics to other disciplines and areas of interest

Representation

- 6.R.1 Use physical objects, drawings, charts, tables, graphs, symbols, equations, or objects created using technology as representations
- 6.R.2 Explain, describe, and defend mathematical ideas using representations
- 6.R.3 Read, interpret, and extend external models
- 6.R.4 Use standard and nonstandard representations with accuracy and detail
- 6.R.5 Use representations to explore problem situations
- 6.R.6 Investigate relationships between different representations and their impact on a given problem
- 6.R.7 Use mathematics to show and understand physical phenomena

Geometry

- 6.G.2 Determine the area of triangles and quadrilaterals (squares, rectangles, rhombi, and trapezoids) and develop formulas
- 6.G.3 Use a variety of strategies to find the area of regular and irregular polygons
- 6.G.4 Determine the volume of rectangular prisms by counting cubes and develop the formula
- 6.G.5 Identify radius, diameter, chords and central angles of a circle
- 6.G.6 Understand the relationship between the diameter and radius of a circle
- 6.G.7 Determine the area and circumference of a circle, using the appropriate formula
- 6.G.8 Calculate the area of a sector of a circle, given the measure of a central angle and the radius of the circle
- 6.G.9 Understand the relationship between the circumference and the diameter of a circle