

7th grade New York State Standards
“Geometry: Circling the Bases”

Problem Solving

7.PS.1 Use a variety of strategies to understand new mathematical content and to develop more efficient methods

7.PS.2 Construct appropriate extensions to problem situations

7.PS.3 Understand and demonstrate how written symbols represent mathematical ideas

7.PS.4 Observe patterns and formulate generalizations

7.PS.5 Make conjectures from generalizations

7.PS.6 Represent problem situations verbally, numerically, algebraically, and graphically

7.PS.7 Understand that there is no one right way to solve mathematical problems but that different methods have advantages and disadvantages

7.PS.8 Understand how to break a complex problem into simpler parts or use a similar problem type to solve a problem

7.PS.11 Work in collaboration with others to solve problems

7.PS.13 Set expectations and limits for possible solutions

7.PS.14 Determine information required to solve the problem

7.PS.15 Choose methods for obtaining required information

7.PS.16 Justify solution methods through logical argument

Reasoning and Proof

7.RP.1 Recognize that mathematical ideas can be supported by a variety of strategies

7.RP.2 Use mathematical strategies to reach a conclusion

7.RP.3 Evaluate conjectures by distinguishing relevant from irrelevant information to reach a conclusion or make appropriate estimates

7.RP.4 Provide supportive arguments for conjectures

7.RP.5 Develop, verify, and explain an argument, using appropriate mathematical ideas and language

Communication

- 7.CM.1 Provide a correct, complete, coherent, and clear rationale for thought process used in problem solving
- 7.CM.2 Provide an organized argument which explains rationale for strategy selection
- 7.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
- 7.CM.5 Answer clarifying questions from others
- 7.CM.6 Analyze mathematical solutions shared by others
- 7.CM.8 Formulate mathematical questions that elicit, extend, or challenge strategies, solutions, and/or conjectures of others
- 7.CM.9 Increase their use of mathematical vocabulary and language when communicating with others
- 7.CM.10 Use appropriate language, representations, and terminology when describing objects, relationships, mathematical solutions, and rationale
- 7.CM.11 Draw conclusions about mathematical ideas through decoding, comprehension, and interpretation of mathematical visuals, symbols, and technical writing

Connection

- 7.CN.1 Understand and make connections among multiple representations of the same mathematical idea
- 7.CN.2 Recognize connections between subsets of mathematical ideas
- 7.CN.3 Connect and apply a variety of strategies to solve problems
- 7.CN.4 Model situations mathematically, using representations to draw conclusions and formulate new situations
- 7.CN.5 Understand how concepts, procedures, and mathematical results in one area of mathematics can be used to solve problems in other areas of mathematics
- 7.CN.6 Recognize and provide examples of the presence of mathematics in their daily lives
- 7.CN.7 Apply mathematical ideas to problem situations that develop outside of mathematics

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

7.CN.9 Recognize and apply mathematics to other disciplines, areas of interest, and societal issues

Representation

7.R.1 Use physical objects, drawings, charts, tables, graphs, symbols, equations, or objects created using technology as representations

7.R.2 Explain, describe, and defend mathematical ideas using representations

7.R.3 Recognize, compare, and use an array of representational forms

7.R.4 Explain how different representations express the same relationship

7.R.5 Use standard and non-standard representations with accuracy and detail

7.R.6 Use representations to explore problem situations

7.R.7 Investigate relationships between different representations and their impact on a given problem

7.R.8 Use representation as a tool for exploring and understanding mathematical ideas

7.R.9 Use math to show and understand physical phenomena (e.g., make and interpret scale drawings of figures or scale models of objects)

7.R.11 Use math to show and understand mathematical phenomena

Geometry

7.G.1 Calculate the radius or diameter, given the circumference or area of a circle

7.G.5 Identify the right angle, hypotenuse, and legs of a right triangle

7.G.6 Explore the relationship between the lengths of the three sides of a right triangle to develop the Pythagorean Theorem

7.G.8 Use the Pythagorean Theorem to determine the unknown length of a side of a right triangle