

8<sup>th</sup> grade New York State Standards  
“Geometry: Circling the Bases”

**Problem Solving**

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

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

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

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

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

8.PS.12 Interpret solutions within the given constraints of a problem

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

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

8.PS.15 Choose methods for obtaining required information

8.PS.16 Justify solution methods through logical argument

**Reasoning and Proof**

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

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

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

**Communication**

8.CM.1 Provide a correct, complete, coherent, and clear rationale for thought process used in problem solving

8.CM.2 Provide an organized argument which explains rationale for strategy selection

8.CM.3 Organize and accurately label work

8.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

8.CM.5 Answer clarifying questions from others

8.CM.6 Analyze mathematical solutions shared by others

8.CM.7 Compare strategies used and solutions found by others in relation to their own work

8.CM.8 Formulate mathematical questions that elicit, extend, or challenge strategies, solutions, and/or conjectures of others

8.CM.9 Increase their use of mathematical vocabulary and language when communicating with others

8.CM.10 Use appropriate language, representations, and terminology when describing objects, relationships, mathematical solutions, and rationale

8.CM.11 Draw conclusions about mathematical ideas through decoding, comprehension, and interpretation of mathematical visuals, symbols, and technical writing

### **Connection**

8.CN.1 Understand and make connections among multiple representations of the same mathematical idea

8.CN.3 Connect and apply a variety of strategies to solve problems

8.CN.4 Model situations mathematically, using representations to draw conclusions and formulate new situations

8.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

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

8.CN.7 Apply mathematical ideas to problem situations that develop outside of mathematics

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

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

**Representation**

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

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

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

8.R.6 Use representations to explore problem situations

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

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

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