

5th grade New York State Standards
“Batter Up”

Problem Solving

- 5.PS.1 Know the difference between relevant and irrelevant information when solving problems
- 5.PS.2 Understand that some ways of representing a problem are more efficient than others
- 5.PS.3 Interpret information correctly, identify the problem, and generate possible strategies and solutions
- 5.PS.5 Formulate problems and solutions from everyday situations
- 5.PS.7 Represent problem situations verbally, numerically, algebraically, and/or graphically
- 5.PS.8 Select an appropriate representation of a problem
- 5.PS.9 Understand the basic language of logic in mathematical situations (and, or, not)
- 5.PS.10 Work in collaboration with others to solve problems
- 5.PS.14 Analyze problems by observing patterns
- 5.PS.15 Make organized lists or charts to solve numerical problems
- 5.PS.16 Discuss with peers to understand a problem situation
- 5.PS.17 Determine what information is needed to solve problems
- 5.PS.18 Determine the efficiency of different representations of a problem
- 5.PS.19 Differentiate between valid and invalid approaches
- 5.PS.20 Understand valid counterexamples
- 5.PS.21 Explain the methods and reasoning behind the problem solving strategies used
- 5.PS.22 Discuss whether a solution is reasonable in the context of the original problem
- 5.PS.23 Verify results of a problem

Reasoning and Proof

- 5.RP.1 Recognize that mathematical ideas can be supported using a variety of strategies

5.RP.2 Understand that mathematical statements can be supported, using models, facts, and relationships to explain their thinking

5.RP.3 Investigate conjectures, using arguments and appropriate mathematical terms

5.RP.4 Make and evaluate conjectures, using a variety of strategies

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

Communication

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

5.CM.2 Explain a rationale for strategy selection 5.CM.3 Organize and accurately label work

5.CM.5 Answer clarifying questions from others

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

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

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

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

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

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

Connection

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

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

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

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

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

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

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

Reasoning

5.R.5 Use representations to explore problem situations

5.R.6 Investigate relationships between different representations and their impact on a given problem

5.R.8 Use mathematics to show and understand social phenomena (e.g., construct tables to organize data showing book sales)

5.R.9 Use mathematics to show and understand mathematical phenomena (e.g., find the missing value that makes the equation true: $(3 + 4) + 5 = 3 + (4 + \underline{\quad})$)

Number Sense and Operations

5.N.4 Create equivalent fractions, given a fraction

5.N.5 Compare and order fractions including unlike denominators (with and without the use of a number line) Note: Commonly used fractions such as those that might be indicated on ruler, measuring cup, etc.

5.N.6 Understand the concept of ratio

5.N.7 Express ratios in different forms

5.N.8 Read, write, and order decimals to thousandths

5.N.9 Compare fractions using $<$, $>$, or $=$

5.N.10 Compare decimals using $<$, $>$, or $=$

5.N.11 Understand that percent means part of 100, and write percents as fractions and decimals

5.N.13 Calculate multiples of a whole number and the least common multiple of two numbers

5.N.18 Evaluate an arithmetic expression using order of operations including multiplication, division, addition, subtraction and parentheses

5.N.19 Simplify fractions to lowest terms

5.N.20 Convert improper fractions to mixed numbers, and mixed numbers to improper fractions

5.N.21 Use a variety of strategies to add and subtract fractions with like denominators

5.N.22 Add and subtract mixed numbers with like denominators

5.N.23 Use a variety of strategies to add, subtract, multiply, and divide decimals to thousandths

5.N.25 Estimate sums and differences of fractions with like denominators .

5.N.26 Estimate sums, differences, products, and quotients of decimals

5.N.27 Justify the reasonableness of answers using estimation

Algebra

5.A.4 Solve simple one-step equations using basic whole-number facts

5.A.5 Solve and explain simple one-step equations using inverse operations involving whole numbers

5.A.6 Evaluate the perimeter formula for given input values

Statistics and Probability

5.S.5 List the possible outcomes for a single-event experiment

5.S.6 Record experiment results using fractions/ratios