

Unit Goals

MathPack: Quest (grades 4–6 gifted) addresses certain content and skill objectives expected of students in grades 5–8.

5th Grade Goals:

Competency Goal 1: The learner will understand and compute with non-negative rational numbers.

- 1.01 Develop number sense for rational numbers 0.001 through 999,999.
- ❑ Connect model, number word, and number using a variety of representations.
 - ❑ Build understanding of place value (thousandths through hundred thousands).
 - ❑ Compare and order rational numbers.
 - ❑ Make estimates of rational numbers in appropriate situations.
- 1.02 Develop fluency in adding and subtracting non-negative rational numbers (halves, fourths, eighths; thirds, sixths, twelfths; fifths, tenths, hundredths, thousandths; and mixed numbers).
- ❑ Develop and analyze strategies for adding and subtracting numbers.
 - ❑ Estimate sums and differences.
 - ❑ Judge the reasonableness of solutions.
- 1.03 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.

Competency Goal 2: The learner will recognize and use standard units of metric and customary measurement.

- 2.01 Estimate the measure of an object in one system given the measure of that object in another system.

Competency Goal 3: The learner will understand and use properties and relationships of plane figures.

- 3.01 Identify, define, describe, and accurately represent triangles, quadrilaterals, and other polygons.

- 3.02 Make and test conjectures about polygons involving:
- ❑ Sum of the measures of interior angles.
 - ❑ Lengths of sides and diagonals.
 - ❑ Parallelism and perpendicularity of sides and diagonals.
- 3.03 Classify plane figures according to types of symmetry (line, rotational).
- 3.04 Solve problems involving the properties of triangles, quadrilaterals, and other polygons.

Competency Goal 4: The learner will understand and use graphs and data analysis.

Competency Goal 5: The learner will demonstrate an understanding of patterns, relationships, and elementary algebraic representation.

- 5.01 Describe, extend, and generalize numeric and geometric patterns using tables, graphs, words, and symbols.
- 5.02 Use algebraic expressions, patterns, and one-step equations and inequalities to solve problems.
- 5.03 Identify, describe, and analyze situations with constant or varying rates of change.

6th Grade Goals:

Competency Goal 1: The learner will understand and compute with rational numbers.

- 1.01 Develop number sense for negative rational numbers.
- 1.02 Develop meaning for percents.
- 1.03 Compare and order rational numbers.
- 1.05 Develop fluency in the use of factors, multiples, exponential notation, and prime factorization.
- 1.06 Use exponential, scientific, and calculator notation to write very large and very small numbers.
- 1.07 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.

Competency Goal 2: The learner will select and use appropriate tools to measure two- and three-dimensional figures.

Competency Goal 4: The learner will understand and determine probabilities.

- 4.01 Develop fluency with counting strategies to determine the sample space for an event. Include lists, tree diagrams, frequency distribution tables, permutations, combinations, and the fundamental counting principle.
- 4.02 Use a sample space to determine the probability of an event.
- 4.03 Conduct experiments involving simple and compound events.

7th Grade Goals:

Competency Goal 1: The learner will understand and compute with rational numbers.

- 1.01 Develop and use ratios, proportions, and percents to solve problems.
- 1.02 Develop fluency in addition, subtraction, multiplication, and division of rational numbers.
- 1.03 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.

Competency Goal 3: The learner will understand and use properties and relationships in geometry.

- 3.02 Identify, define, and describe similar and congruent polygons with respect to angle measures, length of sides, and proportion of sides.
- 3.03 Use scaling and proportional reasoning to solve problems related to similar and congruent polygons.

Competency Goal 5: The learner will demonstrate an understanding of linear relations and fundamental algebraic concepts.

- 5.01 Identify, analyze, and create linear relations and sequences using symbols, diagrams, and written descriptions.
- 5.02 Translate among different representations of algebraic expressions, equations, or inequalities.

- 5.03 Use and evaluate algebraic expressions, linear equations or inequalities to solve problems.
- 5.04 Develop fluency in the use of formulas to solve problems.

8th Grade Goals:

Competency Goal 1: The learner will understand and compute with real numbers.

- 1.01 Develop number sense for the real numbers.
 - ▣ Define and use irrational numbers.
 - ▣ Compare and order.
 - ▣ Use estimates of irrational numbers in appropriate situations.
- 1.02 Develop flexibility in solving problems by selecting strategies and using mental computation, estimation, calculators or computers, and paper and pencil.

Competency Goal 2: The learner will understand and use measurement concepts.

- 2.01 Determine the effect on perimeter, area or volume when one or more dimensions of two- and three-dimensional figures are changed.
- 2.02 Apply and use concepts of indirect measurement.