

**Illinois Learning Standards  
Correlated to  
Merit Software Math Programs**

The *Illinois Learning Standards for Math* were developed by Illinois teachers for Illinois schools. These goals, standards and benchmarks are an outgrowth of the 1985 Illinois State Goals for Learning influenced by the latest thinking in school mathematics. This includes the National Council of Teachers of Mathematics; *Curriculum and Evaluation Standards for School Mathematics*; ideas underlying recent local and national curriculum projects; results of state, national, and international assessment findings; and the work and experiences of Illinois school districts and teachers. The Illinois Learning Standards have not changed since their adoption in 1997.

Merit Software Math programs address the following Illinois math standards.

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Grades 4-6

Subhead	State Goal	Learning Standard	Benchmarks	Merit Software
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	A. Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.	6.A.2 Compare and order whole numbers, fractions and decimals using concrete materials, drawings and mathematical symbols.	Fraction Shape-Up
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.	6.B.2 Solve one- and two-step problems involving whole numbers, fractions and decimals using addition, subtraction, multiplication and division.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up; Fraction Shape-Up

Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.	6.C.2a Select and perform computational procedures to solve problems with whole numbers, fractions and decimals.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up; Fraction Shape-Up
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	D. Solve problems using comparison of quantities, ratios, proportions and percents.	6.D.2 Describe the relationships between two sets of data using ratios and appropriate notations (e.g., $a/b$ , $a$ to $b$ , $a:b$ ).	Word Problem Shape-Up; Fraction Shape-Up
Algebra	STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.	A. Describe numerical relationships using variables and patterns.	8.A.2b Construct and solve number sentences using a variable to represent an unknown quantity.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Algebra	STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.	C. Solve problems using systems of numbers and their properties.	8.C.2 Explain operations and number properties including commutative, associative, distributive, transitive, zero, equality and order of operations.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Statistics and Probability	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	A. Organize, describe and make predictions from existing data.	10.A.2a Organize and display data using pictures, tallies, tables, charts, bar graphs, line graphs, line plots and stem-and-leaf graphs.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up

Statistics and Probability	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	A. Organize, describe and make predictions from existing data.	10.A.2b Using a data set, determine mean, median, mode and range, with and without the use of technology.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Statistics and Probability	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	B. Formulate questions, design data collection methods, gather and analyze data and communicate findings.	10.B.2c Analyze the data using mean, median, mode and range, as appropriate with or without the use of technology.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Statistics and Probability	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	B. Formulate questions, design data collection methods, gather and analyze data and communicate findings.	10.B.2d Interpret results or make relevant decisions based on the data gathered.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Statistics and Probability	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	C. Determine, describe and apply the probabilities of events.	10.C.2a Calculate the probability of a simple event.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Statistics and Probability	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	C. Determine, describe and apply the probabilities of events.	10.C.2b Compare the likelihood of events in terms of certain, more likely, less likely or impossible.	Basic Algebra Shape-Up; Word Problem Shape-Up

Subhead	State Goal	Learning Standard	Benchmark	Merit Software
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.	6.B.3a Solve practical computation problems involving whole numbers, integers and rational numbers.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.	6.B.3b Apply primes, factors, divisors, multiples, common factors and common multiples in solving problems.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.	6.C.3a Select computational procedures and solve problems with whole numbers, fractions, decimals, percents and proportions.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	D. Solve problems using comparison of quantities, ratios, proportions and percents.	6.D.3 Apply ratios and proportions to solve practical problems.	Word Problem Shape-Up

Algebra	STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.	A. Describe numerical relationships using variables and patterns.	8.A.3a Apply the basic properties of commutative, associative, distributive, transitive, inverse, identity, zero, equality and order of operations to solve problems.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Algebra	STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.	A. Describe numerical relationships using variables and patterns.	8.A.3b Solve problems using linear expressions, equations and inequalities.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Algebra	STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.	C. Solve problems using systems of numbers and their properties.	8.C.2 Explain operations and number properties including commutative, associative, distributive, transitive, zero, equality and order of operations.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Algebra	STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.	D. Use algebraic concepts and procedures to represent and solve problems.	8.D.3a Solve problems using numeric, graphic or symbolic representations of variables, expressions, equations and inequalities.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Probability & Statistics	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	A. Organize, describe and make predictions from existing data.	10.A.3a Construct, read and interpret tables, graphs (including circle graphs) and charts to organize and represent data.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Probability & Statistics	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	A. Organize, describe and make predictions from existing data.	10.A.3b Compare the mean, median, mode and range, with and without the use of technology.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up

Probability & Statistics	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	B. Formulate questions, design data collection methods, gather and analyze data and communicate findings.	10.B.3 Formulate questions (e.g., relationships between car age and mileage, average incomes and years of schooling), devise and conduct experiments or simulations, gather data, draw conclusions and communicate results to an audience using traditional methods and contemporary technologies.	Word Problem Shape-Up
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Grades 9-10

Subhead	State Goal	Learning Standard	Benchmark	Merit Software
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	A. Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.	6.A.4 Identify and apply the associative, commutative, distributive and identity properties of real numbers, including special numbers such as pi and square roots.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	C. Compare and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.	6.C.4 Determine whether exact values or approximations are appropriate (e.g., bid a job, determine gas mileage for a trip).	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Number Sense	STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	D. Solve problems using comparison of quantities, ratios, proportions and percents.	6.D.4 Solve problems involving recipes or mixtures, financial calculations and geometric similarity using ratios, proportions and percents.	Word Problem Shape-Up

Algebra	STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.	A. Describe numerical relationships using variables and patterns.	8.A.4b Represent mathematical patterns and describe their properties using variables and mathematical symbols.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up
Probability and Statistics	STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	A. Organize, describe and make predictions from existing data.	10.A.4b Analyze data using mean, median, mode, range, variance and standard deviation of a data set, with and without the use of technology.	Pre-Algebra Shape-Up; Basic Algebra Shape-Up; Word Problem Shape-Up