

**Urbana School District #116**  
**FOURTH GRADE CORE EXPECTATIONS**

**MATHEMATICS**

Illinois State Goal 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.

State Standard	District Core Expectations
6A: Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.	<ul style="list-style-type: none"> <li>Identify and write numbers up to 1,000,000</li> <li>Know place values to 1,000,000</li> <li>Order and compare numbers up to 1,000,000</li> <li>Order and compare fractions</li> <li>Identify and compare decimals (hundredths)</li> <li>Locate whole numbers, <math>\frac{1}{2}</math>s, and <math>\frac{1}{4}</math>s on a number line</li> <li>Describe numbers and their characteristics (odd/even, factors/multiples, greater than/less than)</li> </ul>
6B: Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.	<ul style="list-style-type: none"> <li>Multiply and divide (up to three digit dividend)</li> <li>Add and subtract fractions and whole numbers</li> <li>Solve money problems to \$100.00</li> <li>Use the commutative and distributive properties to solve problems</li> </ul>
6C: Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.	<ul style="list-style-type: none"> <li>Round to ten thousands</li> <li>Solve a problem and write how it was solved</li> </ul>
6D: Solve problems using comparison of quantities, ratios, proportions and percents.	<ul style="list-style-type: none"> <li>Compare using ratios</li> <li>Compare fractions to percents</li> </ul>

Illinois State Goal 7: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.

State Standard	District Core Expectations
7A: Measure and compare quantities using appropriate units, instruments and methods.	<ul style="list-style-type: none"> <li>Solve problems involving elapsed time (hours, minutes)</li> <li>Choose and use correct units and tools to measure</li> <li>Measure length to the nearest <math>\frac{1}{2}</math>" and <math>\frac{1}{2}</math> cm</li> <li>Solve problems with area and perimeter</li> <li>Determine the volume of a solid figure</li> </ul>
7B: Estimate measurements and determine acceptable levels of accuracy.	<ul style="list-style-type: none"> <li>Compare and estimate length, area, volume, and mass</li> </ul>
7C: Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.	<ul style="list-style-type: none"> <li>Convert measurements (standard or metric)</li> </ul>

Illinois State Goal 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems, and predict results.

State Standard	District Core Expectations
8A: Describe numerical relationships using variables and patterns.	<ul style="list-style-type: none"> <li>Find the missing number in a pattern</li> </ul>
8B: Interpret and describe numerical relationships using tables, graphs and symbols.	<ul style="list-style-type: none"> <li>Describe trends found in tables, charts, and graphs</li> </ul>
8C: Solve problems using systems of numbers and their properties.	
8D: Use algebraic concepts and procedures to represent and solve problems.	<ul style="list-style-type: none"> <li>Write and solve expressions using letters or symbols</li> </ul>

Illinois State Goal 9: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.

State Standard	District Core Expectations
9A: Demonstrate and apply geometric concepts involving points, lines, planes, and spaces.	<ul style="list-style-type: none"> <li>Describe and classify 2D shapes according to their characteristics (side, angle, line)</li> <li>Describe and classify 3D figures according to their characteristics (face, vertex, edge)</li> <li>Plot and locate points on a grid, and describe paths of movement</li> <li>Sketch and identify all lines of symmetry in an object</li> <li>Describe paths of movement (slide, flip, turn)</li> <li>Identify perpendicular lines and right angles</li> </ul>
9B: Identify, describe, classify and compare relationships using points, lines, planes, and solids.	<ul style="list-style-type: none"> <li>Predict the result of putting shapes together (composing) and taking them apart (decomposing)</li> <li>Know the distance between two points on a number line</li> </ul>
9C: Construct convincing arguments and proofs to solve problems.	NA
9D: Use trigonometric ratios and circular functions to solve problems	NA

Illinois State Goal 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.

State Standard	District Core Expectations
10A: Organize, describe and make predictions from existing data.	<ul style="list-style-type: none"> <li>Create and read tables, tally charts, bar graphs, pictographs, line graphs, and circle graphs</li> </ul>
10B: Formulate questions, design data collection methods, gather and analyze data and communicate findings.	<ul style="list-style-type: none"> <li>Find the mode, median and range of a set of data</li> </ul>
10C: Determine, describe and apply the probabilities of events.	<ul style="list-style-type: none"> <li>Describe probability using numbers, like 3 out of 4</li> </ul>

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