

**Pennsylvania Department of Education  
Grade 5 Mathematics Performance Level Descriptors**

<p>A fifth-grade student performing at the Below Basic Level demonstrates limited understanding of the concepts and ineffective application of the mathematical skills in the five Pennsylvania Mathematics Reporting Categories.</p>	<p>A fifth-grade student performing at the Basic Level solves simple or routine problems by applying skills and procedures in the five Pennsylvania Mathematics Reporting Categories.</p> <p>A student performing at the Basic Level:</p> <ul style="list-style-type: none"> <li>A. matches whole numbers with equivalent expanded notations; uses circle graphs, base ten blocks, etc., to model basic fractions; rounds, compares and computes with whole numbers and decimals; orders decimals; solves problems involving elementary addition, subtraction or multiplication.</li> <li>B. selects and uses appropriate units to measure elementary examples of weight (mass), capacity, length, perimeter or area; converts measurements within the same system.</li> <li>C. identifies properties of basic one- and two-dimensional figures; identifies simple translations, reflections and rotations; locates and identifies points on a grid.</li> <li>D. determines a missing element in a basic pattern of numbers or geometric shapes; matches a simple story situation to an equation or expression.</li> <li>E. makes elementary interpretations of data displays; determines the degree of likelihood of a clearly-defined event.</li> </ul>	<p>A fifth-grade student performing at the Proficient Level solves practical and real-world problems.</p> <p>A student performing at the Proficient Level:</p> <ul style="list-style-type: none"> <li>A. writes rational numbers, including decimals, in word form or expanded form; locates integers on a number line; lists factors and multiples of whole numbers; solves real-world problems involving whole numbers and decimals without a calculator, including whole number division; uses estimation to solve problems; identifies prime and composite numbers.</li> <li>B. estimates, calculates or compares perimeters and areas of polygons or figures, with or without a grid; solves real-world problems involving measures, including time, temperature and conversions within the metric system.</li> <li>C. uses properties of one-, two- and three-dimensional figures; describes translations, reflections, rotations and lines of symmetry; plots points in the first quadrant of a grid.</li> <li>D. extends patterns of numbers or geometric shapes using samples or rules; writes a rule to describe a pattern; selects an inequality, table or graph to describe a realistic situation; solves simple number sentences with or without variables.</li> <li>E. interprets data in different display formats, including pictographs, tallies, tables, charts, line graphs or bar graphs; determines mean, median, range and probability of a simple event.</li> </ul>	<p>A fifth-grade student performing at the Advanced Level solves complex problems and demonstrates in-depth understanding of the skills, concepts and procedures in the five Pennsylvania Mathematics Reporting Categories.</p> <p>A student performing at the Advanced Level:</p> <ul style="list-style-type: none"> <li>A. creates equivalent representations and regions or sets of rational numbers; explains and justifies solution strategies involving rational numbers, including integers; applies concepts of prime and composite numbers.</li> <li>B. explains methods used to estimate areas of irregular figures; communicates and compares results of measurements using appropriate form and units; uses and justifies solution strategies for complex measurement problems.</li> <li>C. uses mathematical terminology to compare and explain relationships between pairs of quadrilaterals or common three-dimensional figures; creates examples of translations, reflections, rotations and symmetries.</li> <li>D. writes a rule for complex patterns of numbers or geometric shapes; describes strategies to solve problems and explains reasoning.</li> <li>E. creates and evaluates different types of data displays; describes data using mean, median, range and probability.</li> </ul>
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