

# Math Performance Standards (Grade Level Expectations) Grade 5

Each PSGLE includes a bolded statement called the "stem." Each stem is the same or similar across the grades for a given PSGLE and is meant to communicate the main curriculum and instructional focus of the PSGLE across the grades.

The first row of each table includes a heading that refers to the content standard, and the second row includes a heading that refers to the performance standard. (The content standard is a broad statement of what students should know; the performance standards state what students should know and be able to do at ages 5-7, 8-10, 11-14, and 15-18.) The second box includes the complete performance standards.

The coding indicates the content strand and the PSGLE number, so PSGLE [6] N-1 is content strand Numeration, and the first PSGLE for that content strand for grade 6.

<b>Content Standard A: Mathematical facts, concepts, principles, and theories</b>			
<b>Numeration: Understand and use numeration</b>			
<p><b>Numeration Performance Standards that apply to grade 3:</b> <b>M1.1.1</b> Read, write, order, count, and model one-to-one correspondence with whole numbers to 100. <b>M1.1.2</b> Use, model, and identify place value positions of 1's, 10's, and 100's. <b>M1.1.3</b> Model and explain the processes of addition and subtraction, describing the relationship between the operations. <b>M1.1.4</b> Select and use various representations of ordinal and cardinal numbers. <b>M1.1.5</b> Identify, model, and label simple fractions, describing and defining them as equal parts of a whole, a region, or a set. <b>M1.1.6</b> Identify, describe, and extend patterns inherent in the number system. Skip count by 2's 5's and 10's. Add and subtract by 10. Identify even and odd numbers. <b>M1.1.7</b> Demonstrate the commutative and identify properties of addition.</p> <p><b>Numeration Performance Standards that apply to grades 4-6:</b> <b>M1.2.1</b> Read, write, model, order, and count with positive whole numbers to 1,000,000 and negative whole numbers, <b>M1.2.2</b> Use, model, and identify place value positions from 0.001 to 1,000,000. <b>M1.2.3</b> Model and explain the processes of multiplication and division. Describe the relationships among the four basic operations. <b>M1.2.4</b> Identify and describe different uses for the same numerical representation. <b>M1.2.5</b> Model and explain the process of adding and subtracting fractions with common denominators and decimals that represent money. <b>M1.2.6</b> Identify and describe factors and multiples including those factors and multiples common to a pair or set of numbers. <b>M1.2.7</b> Demonstrate the commutative and identify properties of multiplication.</p>			
<b>Understanding Numbers</b>			
<b>Grade 3</b>	<b>Grade 4</b>	<b>Grade 5</b>	<b>Grade 6</b>
<p><b>The student demonstrates conceptual understanding</b></p> <ul style="list-style-type: none"> <li>• of whole numbers to one thousand by</li> </ul> <p>[3] N-1 reading, writing, ordering, or [counting L] (M1.1.1)</p> <p>[3] N-2 modeling (base ten blocks) or identifying place value positions to thousands (M1.1.2)</p>	<p><b>The student demonstrates conceptual understanding</b></p> <ul style="list-style-type: none"> <li>• of whole numbers to <u>ten thousands</u> by</li> </ul> <p>[4] N-1 reading, writing, ordering, or [counting L] (M1.2.1)</p> <p>[4] N-2 modeling (base ten blocks) or identifying place value positions to <u>ten thousands</u> (M1.2.2)</p>	<p><b>The student demonstrates conceptual understanding</b></p> <ul style="list-style-type: none"> <li>• of whole numbers to <u>millions</u> by</li> </ul> <p>[5] N-1 reading, writing, ordering, or [counting L] (M1.2.1)</p> <p>[5] N-2 identifying place value positions from <u>tenths to millions</u> (M1.2.2)</p>	<p><b>The student demonstrates conceptual understanding</b></p> <ul style="list-style-type: none"> <li>• of <u>fractions (proper or mixed numbers), decimals, percents (whole number), or integers</u> by</li> </ul> <p>[6] N-1 reading, writing, ordering, or [counting L] (M1.2.1)</p> <p>[6] N-2 [identifying place value positions from <u>thousandths to millions</u>] (M1.2.2)</p>

The number in brackets indicates the grade level.

Differences between grade levels are underlined.

The coding at the end of each PSGLE indicates the performance standard the

Some PSGLEs have been identified as Local. They are for local assessment and will not be on a state assessment.

Grade Level Expectations are written for assessment purposes. The PSGLEs should be written in a way so that it is clear what is expected of classroom instruction and/or state assessment.

#### Criteria for PSGLEs

1. The set of PSGLEs for each grade level should be reasonable to learn within a school year and still allow for learning additional state and local expectations.
2. PSGLEs should promote coherent, focused, developmentally appropriate instructions, as opposed to isolated instruction just on topics, facts, or individual skills.
3. Concepts, skills, and knowledge should be differentiated between adjacent grade levels.
4. PSGLEs should be of similar levels of specificity.
5. PSGLEs should show a continuum of learning. Success in one grade should be a good predictor of success the next year.

Note: Items differentiated with an "i.e." indicate that statewide assessment items may only be written to the content contained within the statement in the parentheses. Items differentiated with an "e.g." do not limit assessment items to that content, but indicate examples of content that may be used in statewide assessment items.

Math Performance Standards are organized into 10 content strands and are coded as follows:

N=Numeration

MEA=Measurement

E&C=Estimation and Computation

F&R=Functions and Relationships

G=Geometry

S&P=Statistics and Probability

PS=Process Skills (The Process Skills include Problem-Solving, Communication, Reasoning, and Connections.)

NOTE: All the PSGLEs for Process Skills are for local assessment. Process Skills that would be assessed on a state assessment have been embedded in PSGLEs for other content strands. For instance, a grade level expectation for the Statistics and Probability content strand for eighth grade is, “[Designing, collecting L], organizing, displaying, or explaining the classification of data in real-world problems.” That Grade Level Expectation for Statistics and Probability incorporates one of the Grade Level Expectations for Process Skills, “representing mathematical problems numerically, graphically, and/or symbolically.”

## Math Performance Standards (Grade Level Expectations)

<p><b>Content Standard A:</b> Mathematical facts, concepts, principles, and theories  <b>Numeration:</b> Understand and use numeration  <b>Measurement:</b> Select and use systems, units, and tools of measurement</p>			
<p><b>Numeration Performance Standards that apply to grades 4-6:</b> <b>M1.2.1</b> Read, write, model, order, and count with positive whole numbers to 1,000,000 and negative whole numbers. <b>M1.2.2</b> Use, model, and identify place value positions from 0.001 to 1,000,000. <b>M1.2.3</b> Model and explain the processes of multiplication and division. Describe the relationships among the four basic operations. <b>M1.2.4</b> Identify and describe different uses for the same numerical representation. <b>M1.2.5</b> Model and explain the process of adding and subtracting fractions with common denominators and decimals that represent money. <b>M1.2.6</b> Identify and describe factors and multiples including those factors and multiples common to a pair or set of numbers. <b>M1.2.7</b> Demonstrate the commutative and identity properties of multiplication.</p> <p><b>Measurement Performance Standards that apply to grades 4-6:</b> <b>M2.2.1</b> Estimate and measure weights, lengths, and temperatures to the nearest unit using the metric and standard systems. <b>M2.2.2</b> Identify and use equivalent measurements (e.g., 60 minutes = 1 hour, 7 days = 1 week). <b>M2.2.3</b> Use a variety of measuring tools; describe the attribute(s) they measure. <b>M2.2.4</b> Estimate and measure the dimensions of geometric figures. <b>M2.2.5</b> Tell time using analog and digital clocks identifying AM and PM; find elapsed time. <b>M2.2.6</b> Read, write, and use money notation, determining possible combinations of coins and bills to equal given amounts; count back change for any given situation.</p>			
<b>Grade 5</b>			
Understanding Numbers	Understanding Meaning of Operations	Number Theory	Measurable Attributes
<p>The student demonstrates conceptual understanding</p> <ul style="list-style-type: none"> <li>• of whole numbers to <u>millions</u> by</li> </ul> <p>[5] N-1 reading, writing, ordering, or [counting L] (M1.2.1)</p> <p>[5] N-2 identifying place value positions from <u>tenths to millions</u> (M1.2.2)</p> <p>[5] N-3 converting between whole numbers written in expanded notation and standard form (M1.2.4)</p> <ul style="list-style-type: none"> <li>• of positive fractions with <u>denominators 1 through 12 and 100 with proper and mixed numbers and benchmark percents (10%, 25%, 50%, 75%, 100%) by modeling, identifying, describing with explanations, or illustrating</u></li> </ul> <p>[5] N-4 equal parts of a whole, a region, or a set (M1.2.4)</p> <p>[5] N-5 equivalent fractions or mixed numbers (M1.2.4 &amp; M3.2.5)</p>	<p>The student demonstrates conceptual understanding of mathematical operations by</p> <p>[5] N-6 [using models, explanations, number lines, or real-life situations L] describing or illustrating the process of <u>division</u> and its relationship to <u>subtraction or to multiplication</u> (M1.2.3)</p> <p>[5] N-7 [using models, explanations, number lines, or real-life situations L] describing or illustrating the process of adding and subtracting <u>proper fractions or mixed numbers</u> (like denominators) (M1.2.5)</p> <p>[5] N-8 [using models, explanations, number lines, or real-life situations L] describing or illustrating the process of adding or subtracting decimals that represent money (M1.2.5)</p>	<p>The student demonstrates conceptual understanding of number theory by</p> <p>[5] N-9 describing or illustrating <u>commutative</u> or identity properties of addition or multiplication <u>using models or explanations</u> (M1.2.7)</p> <p>[5] N-10 <u>identifying or listing factors and multiples common to a pair or set of numbers</u> (M1.2.6)</p>	<p>The student demonstrates understanding of measurable attributes by</p> <p>[5] MEA-1 [estimating length to the nearest <u>one-fourth inch or centimeter L</u>] (M2.2.1)</p> <p>[5] MEA-2 [estimating temperature (degree Celsius or Fahrenheit, <u>plus or minus 5 degrees</u>) or weight (<u>half-pounds or kilograms</u>) to the nearest unit L] (M2.2.1)</p> <p>[5] MEA-3 identifying or using equivalent measures for <u>weight/mass (16 oz. = 1 pound or 1000 grams = 1 kilogram)</u> and length (1000 millimeters = 1 meter) or <u>time</u> (M2.2.2)</p>

## Math Performance Standards (Grade Level Expectations)

**Content Standard A:** Mathematical facts, concepts, principles, and theories  
**Measurement:** Select and use systems, units, and tools of measurement  
**Functions and Relationships:** Represent, analyze, and use patterns, relations, and functions

**Measurement Performance Standards that apply to grades 4-6:** **M2.2.1** Estimate and measure weights, lengths, and temperatures to the nearest unit using the metric and standard systems. **M2.2.2** Identify and use equivalent measurements (e.g., 60 minutes = 1 hour, 7 days = 1 week). **M2.2.3** Use a variety of measuring tools; describe the attribute(s) they measure. **M2.2.4** Estimate and measure the dimensions of geometric figures. **M2.2.5** Tell time using analog and digital clocks identifying AM and PM; find elapsed time. **M2.2.6** Read, write, and use money notation, determining possible combinations of coins and bills to equal given amounts; count back change for any given situation.

**Estimation and Computation Performance Standards that apply to grades 4-6:** **M3.2.1** Describe and use a variety of estimation strategies including rounding to the appropriate place value, multiplying by powers of 10, and using front-end estimation to check the reasonableness of solutions. **M3.2.2** Recall and use basic multiplication and division facts orally, with paper and pencil without a calculator. **M3.2.3** Add and subtract whole numbers and fractions with common denominators to 12 and decimals, including money amounts, using models and algorithms. **M3.2.4** Multiply and divide multi-digit whole numbers by 2-digit numbers, limiting the 2-digit divisors to those that end in 0; multiply and divide decimals that represent money by whole numbers. **M3.2.5** Find equivalent fractions. Convert between fractions and mixed numbers. **M3.2.6** Develop and interpret scales and scale models.

**Functions and Relationships Performance Standards that apply to grades 4-6:** **M4.2.1** Use patterns and their extensions to make predictions and solve problems; describe patterns found in the number system including those formed by multiples, factors, perfect squares, and powers of 10. **M4.2.2** Generate and solve simple functions by identifying and applying multiplication and division patterns. **M4.2.3** Use a calculator to find a missing item in a number sequence. **M4.2.4** Use words, lists, and tables to represent and analyze patterns. **M4.2.5** Explain the purpose of variables and use them in open sentences to express relationships and describe simple functions.

### Grade 5

Measurement Techniques	Estimation	Computation	Describing Patterns and Functions
<p><b>The student demonstrates ability to use measurement techniques by</b></p> <p>[5] <b>MEA-4</b> [measuring temperature or weight using appropriate tools L] (M2.2.1 &amp; M2.2.3)</p> <p>[5] <b>MEA-5</b> telling time using analog clocks to the nearest <u>minute</u> and using <u>A.M.</u> or <u>P.M.</u> (M2.2.5)</p> <p>[5] <b>MEA-6</b> determining possible combinations of coins and bills to given amounts (M2.2.6)</p> <p>[5] <b>MEA-7</b> [simulating multiple purchases and calculating the amount of change from given bills up to <u>\$100.00</u> L] (M2.2.6)</p> <p>[5] <b>MEA-8</b> measuring length to the nearest <math>\frac{1}{4}</math> inch or centimeter (M2.2.1)</p>	<p><b>The student determines reasonable answers to real-life situations, paper/pencil computations, or calculator results by</b></p> <p>[5] <b>E&amp;C-1</b> identifying or using [a variety of L] strategies (e.g., rounding to appropriate place value, multiplying by powers of ten, using front-end estimation to estimate the results of addition or subtraction computations from <u>tenths to 100,000</u>, including <u>money</u>, or simple multiplication or division (M3.2.1)</p>	<p><b>The student accurately solves problems (including real-world situations) involving</b></p> <p>[5] <b>E&amp;C-2</b> [recalling basic multiplication facts, products to <u>144</u>, and corresponding division facts efficiently L] (M3.2.2)</p> <p>[5] <b>E&amp;C-3</b> adding or subtracting <u>four-digit</u> whole numbers, fractions with like denominators to 12, or <u>decimals involving money</u> (M3.2.3)</p> <p>[5] <b>E&amp;C-4</b> multiplying <u>two-digit whole numbers</u> by two-digit numbers or <u>dividing three-digit whole numbers by single-digit numbers</u> (M3.2.4)</p>	<p><b>The student demonstrates conceptual understanding of functions, patterns, or sequences by</b></p> <p>[5] <b>F&amp;R-1</b> extending patterns that use <u>addition</u>, <u>subtraction</u>, <u>multiplication</u>, <u>division</u> or symbols, up to 10 terms, represented by models (function machines), tables, sequences, or in problem situations (M4.2.1)</p> <p>[5] <b>F&amp;R-2</b> using rules to express the generalization of a pattern using words, lists, or tables (M4.2.4)</p> <p>[5] <b>F&amp;R-3</b> identifying or applying addition or subtraction patterns to find missing values in a function (M4.1.2)</p> <p>[5] <b>F&amp;R-4</b> [using manipulatives, including a calculator, as tools when describing, extending, or representing a number sequence L] (M4.2.1 &amp; M4.2.3)</p>

## Math Performance Standards (Grade Level Expectations)

<p><b>Content Standard A:</b> Mathematical facts, concepts, principles, and theories  <b>Functions and Relationships:</b> Represent, analyze, and use patterns, relations, and functions  <b>Geometry:</b> Construct, transform, and analyze geometric figures.</p>			
<p><b>Functions and Relationships Performance Standards that apply to grades 4-6:</b> <b>M4.2.1</b> Use patterns and their extensions to make predictions and solve problems; describe patterns found in the number system including those formed by multiples, factors, perfect squares, and powers of 10. <b>M4.2.2</b> Generate and solve simple functions by identifying and applying multiplication and division patterns. <b>M4.2.3</b> Use a calculator to find a missing item in a number sequence. <b>M4.2.4</b> Use words, lists, and tables to represent and analyze patterns. <b>M4.2.5</b> Explain the purpose of variables and use them in open sentences to express relationships and describe simple functions.</p> <p><b>Geometry Performance Standards that apply to grades 4-6:</b> <b>M5.2.1</b> Identify and compare various triangles and quadrilaterals according to their sides and/or angles. <b>M5.2.2</b> Compare and contrast plane and solid figures (e.g., circle/sphere, square/cube, triangle/pyramid) using relevant attributes, including the number of vertices, edges, and the number and shape of faces. <b>M5.2.3</b> Identify and model geometric figures that are congruent, similar, and/or symmetrical. <b>M5.2.4</b> Distinguish between area and perimeter; find both using a variety of methods including rulers, grid paper, and tiles. <b>M5.2.5</b> Identify and model transformations of geometric figures, describing the motions as slides, flips, or rotations. <b>M5.2.6</b> Locate and describe objects in terms of their position with and without compass directions; identify coordinates for a given point or locate points of given coordinates on a grid. <b>M5.2.7</b> Sketch and identify line segments, midpoints, intersections, parallel, and perpendicular lines.</p>			
<b>Grade 5</b>			
Modeling and Solving Equations and Inequalities	Geometric Relationships	Similarity, Congruence, Symmetry, and Transformation of Shapes	Perimeter, Area, Volume, and Surface Area
<p>The student demonstrate algebraic thinking by</p> <p>[5] <b>F&amp;R-5</b> using an open number sentence (addition, subtraction, multiplication, or <u>division</u>) to solve for an unknown represented by a box or circle (e.g., <math>256 \div =8</math>, <math>\div 8=56</math>, <math>36 \div 3=</math>) (M4.2.5)</p>	<p>The student demonstrates an understanding of geometric relationships by</p> <p>[5] <b>G-1</b> using the attributes and properties of angles and the <u>number, length, and orientation of sides</u> to identify or compare triangles (<u>scalene, isosceles, or equilateral</u>) or <u>quadrilaterals (parallelograms, trapezoids, rhombi)</u> (M5.2.1)</p> <p>[5] <b>G-2</b> using the attributes and properties of solid figures (edges, vertices, <u>number of faces</u>) to [model L], identify, compare, or describe (cubes, cylinders, cones, spheres, <u>pyramids, or rectangular prisms</u>) (e.g., boxes, buildings, packages) (M5.2.2)</p>	<p>The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by</p> <p>[5] <b>G-3</b> illustrating or identifying the results of transformation (<u>slides, turns, or flips of polygons</u>) (e.g., pictures of cultural art, fabric designs, architecture, logos) (M5.2.5)</p> <p>[5] <b>G-4</b> identifying, creating, or drawing geometric figures that are congruent, <u>similar</u>, or symmetrical (M5.2.3)</p> <p>[5] <b>G-5</b> [modeling designs (e.g., tessellations) that contain a series of slides, flips, <u>and/or turns L</u>] (M5.2.5)</p>	<p>The student solves problems (including real-world situations) using perimeter or area by</p> <p>[5] <b>G-6</b> estimating or determining area or perimeter of rectangles using a key, ruler, <u>or given measures</u> (M5.2.4)</p> <p>[5] <b>G-7</b> [estimating or determining the area and circumference of a circle using a grid or manipulatives L] (M5.2.4 &amp; M5.3.4)</p>

## Math Performance Standards (Grade Level Expectations)

**Content Standard A:** Mathematical facts, concepts, principles, and theories  
**Geometry:** Construct, transform, and analyze geometric figures.  
**Statistics and Probability:** Formulate questions, gather and interpret data, and make predictions

**Geometry Performance Standards that apply to grades 4-6:** **M5.2.1** Identify and compare various triangles and quadrilaterals according to their sides and/or angles. **M5.2.2** Compare and contrast plane and solid figures (e.g., circle/sphere, square/cube, triangle/pyramid) using relevant attributes, including the number of vertices, edges, and the number and shape of faces. **M5.2.3** Identify and model geometric figures that are congruent, similar, and/or symmetrical. **M5.2.4** Distinguish between area and perimeter; find both using a variety of methods including rulers, grid paper, and tiles. **M5.2.5** Identify and model transformations of geometric figures, describing the motions as slides, flips, or rotations. **M5.2.6** Locate and describe objects in terms of their position with and without compass directions; identify coordinates for a given point or locate points of given coordinates on a grid. **M5.2.7** Sketch and identify line segments, midpoints, intersections, parallel, and perpendicular lines.

**Statistics and Probability Performance Standards that apply to grades 4-6:** **M6.2.1** Collect, organize, and display data creating a variety of visual displays including tables, charts, and line graphs. **M6.2.2** Present the data using a variety of appropriate representations and explain the meaning of the data. **M6.2.3** Describe and interpret a data set using mean, median, mode, and range. **M6.2.4** Estimate whether a game is mathematically fair or unfair; analyze and present probability data using simple fractions. **M6.2.5** Conduct simple probability experiments using concrete materials and represent the results using fractions and probability.

### Grade 5

Position and Direction	Construction	Analysis and Central Tendency	Probability
<p><b>The student demonstrates understanding of position and direction by</b></p> <p>[5] <b>G-8</b> [locating points of given coordinates on a grid or identifying coordinates for a given point (e.g., items on a treasure map) L] (M5.2.6)</p>	<p><b>The student demonstrates a conceptual understanding of geometric drawings or constructions by</b></p> <p>[5] <b>G-9</b> [identifying or drawing <u>perpendicular line segments or midpoints</u> L] (M5.2.7)</p>	<p><b>The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating; or drawing or justifying conclusions) by</b></p> <p>[5] <b>S&amp;P-2</b> using information from a variety of displays (tables, bar graphs, <u>line graphs</u>, or Venn diagrams) (M6.2.2)</p> <p>[5] <b>S&amp;P-3</b> using mode, <u>median</u>, or range with up to <u>10</u> pieces of data with a value of 10 or less each (M6.2.3)</p>	<p><b>The student demonstrates a conceptual understanding of probability and counting techniques by</b></p> <p>[5] <b>S&amp;P-4</b> predicting or explaining the probability of all possible outcomes in an experiment <u>using ratios or fractions to describe the probability</u> (M6.2.4)</p> <p>[5] <b>S&amp;P-5</b> <u>solving or identifying solutions to problems involving money</u> combinations (e.g., how many ways can you make 25 cents using nickels, dimes, or quarters?) (M6.2.5)</p>
	<p><b>Data Display</b></p> <p><b>The student demonstrates an ability to classify and organize data by</b></p> <p>[5] <b>S&amp;P-1</b> [designing an investigation and collecting L], organizing, or displaying, using appropriate scale, data in real-world problems (e.g., social studies, friends, or school), using bar graphs, tables, charts, diagrams, or <u>line graphs with whole numbers up to 50</u> (M6.2.1 &amp; M6.2.2)</p>		

## Math Performance Standards (Grade Level Expectations)

<p><b>Content Standards B, C, D, and E:</b> Process skills and abilities  <b>Applying conceptual knowledge and skills as designated in all strands of Content Standard A by problem solving, communicating, reasoning, and making connections</b></p>			
<p><b>Problem-Solving Performance Standards that apply to grades 4-6:</b> <b>M7.2.1</b> Read and summarize a problem, using mathematical terms and symbols. <b>M7.2.2</b> Select and apply a variety of strategies including making a table, chart or list, drawing pictures, making a model, and comparing with previous experience to solve problems. <b>M7.2.3</b> Explain and verify results of the original problem and apply what was learned to new situations.  <b>Communication Performance Standards that apply to grades 4-6:</b> <b>M8.2.1</b> Use the mathematical vocabulary appropriate to the problem. <b>M8.2.2</b> Represent mathematical and practical situations using concrete, pictorial, and symbolic representation. <b>M8.2.3</b> Organize and communicate mathematical problem solving strategies and solutions to problems.  <b>Reasoning Performance Standards that apply to grades 4-6:</b> <b>M9.2.1</b> Draw logical conclusions about mathematical situations. <b>M9.2.2</b> Given a rule or generalization, determine whether the example fits. <b>M9.2.3</b> Justify answers and mathematical strategies as reasonable.  <b>Connections Performance Standards that apply to grades 4-6:</b> <b>M10.2.1</b> Apply mathematical processes to social studies. <b>M10.2.2</b> Apply mathematical skills and processes to situations with friends and school.</p>			
<b>Grade 5</b>			
<p><b>Problem Solving:</b> Understand and be able to select and use a variety of problem-solving strategies</p>	<p><b>Communication:</b> Form and use appropriate methods to define and explain mathematical relationships</p>	<p><b>Reasoning:</b> Use logic and reason to solve mathematical problems</p>	<p><b>Connections:</b> Apply mathematical concepts and processes to situations within and outside of school</p>
<p><b>The student demonstrates an ability to problem solve by</b></p> <p>[5] <b>PS-1</b> selecting and applying an appropriate strategy (e.g., <u>tables, charts, lists, or graphs</u>; guess and check; extended patterns; <u>make a model</u>) to solve a variety of problems <u>and verify the results</u> (M7.2.2)</p> <p>[5] <b>PS-2</b> explaining and verifying results of an original problem and applying what was learned to new situations (M7.2.3)</p>	<p><b>The student communicates his or her mathematical thinking by</b></p> <p>[5] <b>PS-3</b> <u>representing problems using mathematical language including concrete, pictorial, and/or symbolic representation; or organizing and communicating mathematical problem-solving strategies and solutions using mathematical language</u> (M8.2.1, M8.2.2, &amp; M8.2.3)</p>	<p><b>The student demonstrates an ability to use logic and reason by</b></p> <p>[5] <b>PS-4</b> drawing <u>logical</u> conclusions about mathematical <u>situations</u> (given a rule or generalization, determine whether the example fits); or justifying answers and mathematical strategies as <u>reasonable</u> (M9.2.1, M9.2.2, &amp; M9.2.3)</p>	<p><b>The student understands and applies mathematical skills and processes across the content strands by</b></p> <p>[5] <b>PS-5</b> <u>using real-world contexts such as social studies, friends, and school</u> (M10.2.1 &amp; M10.2.2)</p>