

Math Performance Standards (Grade Level Expectations) Grade 2

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 for ages 5-7.

The coding indicates the content strand and the PSGLE number, so PSGLE [2] MEA-1 is content strand Measurement, and the first PSGLE for that content strand for grade 2.

Content Standard A: Mathematical facts, concepts, principles, and theories			
Measurement: Select and use systems, units, and tools of measurement			
Measurement Performance Standards that apply to grades K-3: M2.1.1 Compare and order objects by various measurable attributes including calendar, temperature, length, weight, capacity, area, and volume. M2.1.2 Compare objects to standard and non-standard units to identify objects that are greater than, less than, and equal to, a given unit. M2.1.3 Choose a unit of measure, estimate the length or weight of objects and then measure to check for reasonableness. M2.1.4 Tell time to the nearest half hour, distinguishing between morning, afternoon, and evening. M2.1.5 Identify coins, their value, and the value of given sets of coins.			
Measurable Attributes			
Kindergarten	Grade 1	Grade 2	Grade 3
<p>The student demonstrates understanding of measurable attributes by</p> <p>[K] MEA-1 making comparisons between objects using concepts of big/little, long/short, large/small, more/less, same (M2.1.1)</p> <p>[K] MEA-2 identifying coins by name: penny, nickel, dime and quarter (M2.1.5)</p>	<p>The student demonstrates understanding of measurable attributes by</p> <p>[1] MEA-1 measuring and/or comparing objects using standard and nonstandard units (M2.1.2)</p> <p>[1] MEA-2 identifying money by its value (e.g., penny, nickel, dime, quarter, dollar) (M2.1.5)</p>	<p>The student demonstrates understanding of measurable attributes by</p> <p>[2] MEA-1 measuring to the nearest inch or foot (M2.1.3)</p> <p>[2] MEA-2 comparing and ordering objects by length, weight, area, time, temperature (M2.1.1)</p> <p>[2] MEA-3 comparing objects to standard and nonstandard units to identify objects that are greater than, less than, and equal to a given unit (M2.1.2)</p> <p>[2] MEA-4 identifying coins, their value, or the value of a set of coins up to one dollar (M2.1.5)</p>	<p>The student demonstrates understanding of measurable attributes by</p> <p>[3] MEA-1 [estimating length to the nearest inch or foot L] (M2.1.3)</p> <p>[3] MEA-2 comparing and ordering objects according to measurable attribute (calendar, length, [temperature, weight, area, or volume L]) (M2.1.1)</p> <p>[3] MEA-3 identifying or describing objects that are greater than, less than, or equal to a unit of measure (standard or non-standard) (M2.1.2)</p> <p>[3] MEA-4 selecting an appropriate unit of English, metric, or non-standard measurement to estimate the length, time, weight, or temperature (M2.1.3)</p> <p>[3] MEA-5 identifying coins, their value, or the value of a set of coins (M2.1.5)</p>

The number or letter in brackets indicates the grade level.

The coding at the end of each PSGLE indicates the performance standard the PSGLE is aligned to.

Math Performance Standards (Grade Level Expectations) Grade 2

Content Standard A: Mathematical facts, concepts, principles, and theories

Numeration: Understand and use numeration

Measurement: Select and use systems, units, and tools of measurement

Numeration Performance Standards that apply to grades K-3: **M1.1.1** Read, write, order, count, and model one-to-one correspondence with whole numbers to 100. **M1.1.2** Use, model, and identify place value positions of 1's, 10's, and 100's. **M1.1.3** Model and explain the processes of addition and subtraction, describing the relationship between the operations. **M1.1.4** Select and use various representations of ordinal and cardinal numbers. **M1.1.5** Identify, model, and label simple fractions, describing and defining them as equal parts of a whole, a region, or a set. **M1.1.6** 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. **M1.1.7** Demonstrate the commutative and identity properties of addition.

Measurement Performance Standards that apply to grades K-3: **M2.1.1** Compare and order objects by various measurable attributes including calendar, temperature, length, weight, capacity, area, and volume. **M2.1.2** Compare objects to standard and non-standard units to identify objects that are greater than, less than, and equal to, a given unit. **M2.1.3** Choose a unit of measure, estimate the length or weight of objects and then measure to check for reasonableness. **M2.1.4** Tell time to the nearest half hour, distinguishing between morning, afternoon, and evening. **M2.1.5** Identify coins, their value, and the value of given sets of coins.

Understanding Numbers	Understanding Meaning of Operations	Number Theory	Measurable Attributes	Measurement Techniques
Grade 2				
<p>The student demonstrates conceptual understanding</p> <ul style="list-style-type: none"> • of whole numbers to one thousand by <p>[2] N-1 reading, writing, ordering/counting and modeling correspondence of whole numbers (M1.1.1)</p> <p>[2] N-2 modeling and identifying place value positions: ones, tens, and hundreds (M1.1.2)</p> <ul style="list-style-type: none"> • of simple fractions <p>[2] N-3 identifying fractions as equal parts of a whole, a region, or a set (M1.1.5)</p> <p>[2] N-4 reading and writing numerals for simple fractions (M1.1.5)</p>	<p>The student demonstrates conceptual understanding of mathematical operations by</p> <p>[2] N-5 describing or illustrating the processes of addition and subtraction of whole numbers and their relationships (M1.1.3)</p>	<p>The student demonstrates conceptual understanding of number theory by</p> <p>[2] N-6 modeling or explaining the commutative and identity properties of addition (M1.1.7)</p> <p>[2] N-7 identifying or using patterns in the number system (skip count by 2's, 5's, or 10's; add or subtract by 10; identify even or odd numbers) (M1.1.6)</p> <p>[2] N-8 modeling fact families (M1.1.3)</p>	<p>The student demonstrates understanding of measurable attributes by</p> <p>[2] MEA-1 measuring to the nearest inch or foot (M2.1.3)</p> <p>[2] MEA-2 comparing and ordering objects by length, weight, area, time, temperature (M2.1.1)</p> <p>[2] MEA-3 comparing objects to standard and nonstandard units to identify objects that are greater than, less than, and equal to a given unit (M2.1.2)</p> <p>[2] MEA-4 identifying coins, their value, or the value of a set of coins up to one dollar (M2.1.5)</p>	<p>The student demonstrates ability to use measurement techniques by</p> <p>[2] MEA-5 selecting and using appropriate tools of measurement (M2.1.3)</p> <p>[2] MEA-6 drawing a line segment to the nearest half inch (M2.1.3)</p> <p>[2] MEA-7 telling time to the nearest ¼ hour using analog and digital clocks (M2.1.4)</p> <p>[2] MEA-8 ordering the months of the year (M2.1.1)</p> <p>[2] MEA-9 writing the date using words and numbers (day, month, year) (M2.1.1)</p> <p>[2] MEA-10 counting change (coins) up to a dollar (M2.1.5)</p> <p>[2] MEA-11 recognizing money symbols including a decimal point (\$,¢, .) (M2.1.5)</p> <p>[2] MEA-12 identifying equal values of coins up to a dollar (M2.1.5)</p>

Math Performance Standards (Grade Level Expectations) Grade 2

Content Standard A: Mathematical facts, concepts, principles, and theories.

Estimation and Computation: Perform basic arithmetic functions, make reasoned estimates, and select and use appropriate methods or tools

Functions and Relationships: Represent, analyze, and use patterns, relations, and functions

Estimation and Computation Performance Standards that apply to grades K-3: **M3.1.1** Make reasonable estimates of “how many” and “how much”; estimate the results of simple addition and subtraction problems. **M3.1.2** Recall and use basic addition and subtraction facts orally and with paper and pencil without a calculator. **M3.1.3** Add and subtract whole numbers to 100 using a variety of models and algorithms. **M3.1.4** Model multiplication as repeated addition and grouping objects; model division as “sharing equally” and grouping objects.

Functions and Relationships Performance Standards that apply to grades K-3: **M4.1.1** Recognize, describe, create, and extend repeating and increasing patterns with a variety of materials including symbols, objects, and manipulatives. **M4.1.2** Generate and solve simple functions by identifying and applying addition and subtraction patterns. **M4.1.3** Use a calculator to find and extend patterns in the number system. **M4.1.4** Complete open space sentences with missing numbers; use appropriate vocabulary including greater than, less than, and equal to; and use the correct symbols.

Estimation	Computation	Describing Patterns and Functions	Modeling and Solving Equations and Inequalities
Grade 2			
<p>The student determines reasonable answers to real-life situations, paper/pencil computations, or calculator results by</p> <p>[2] E&C-1 estimating “how many” and “how much” in a given set up to 30</p> <p>[2] E&C-2 estimating the results of simple addition and subtraction problems up to 100 (M3.1.1)</p> <p>[2] E&C-3 identifying whether estimation or counting is appropriate (M3.1.1)</p>	<p>The student accurately solves problems (including real-world situations) involving</p> <p>[2] E&C-4 recalling addition and subtraction facts to 20 (M3.1.2)</p> <p>[2] E&C-5 solving two-digit addition and subtraction problems using a variety of models and algorithms (M3.1.3)</p> <p>[2] E&C-6 using repeated addition with objects to model multiplication (M3.1.4)</p> <p>[2] E&C-7 using equal shares with objects to model division (M3.1.4)</p>	<p>The student demonstrates conceptual understanding of functions, patterns, or sequences by</p> <p>[2] F&R-1 identifying and continuing patterns, including numbers (M4.1.1)</p> <p>[2] F&R-2 describing a rule or relation that determines and continues a sequence or pattern (M4.1.1)</p>	<p>The student demonstrates algebraic thinking by</p> <p>[2] F&R-3 solving a problem with an unknown (e.g., $7 + ? = 10$) (M4.1.4)</p> <p>[2] F&R-4 using the terms equal to, greater than, and less than for numbers up to 100 (M4.1.4)</p>

Math Performance Standards (Grade Level Expectations) Grade 2

Content Standard A: Mathematical facts, concepts, principles, and theories.

Geometry: Construct, transform, and analyze geometric figures.

Geometry Performance Standards that apply to grades K-3: **M5.1.1** Identify, sort, describe, model, and compare circles, triangles, and rectangles including squares regardless of orientation. **M5.1.2** Identify, sort, describe, model, and compare solid figures including cubes, cylinders, and spheres. **M5.1.3** Identify and create examples of line symmetry; compare and describe given circles, triangles, and rectangles as larger, smaller, or congruent. **M5.1.4** Demonstrate conservation of area using drawings or manipulatives. **M5.1.5** Describe and identify geometric transformations including slides, flips, and turns. **M5.1.6** Use comparative directional and positional words: above, below, inside, outside, on, in, right and left, horizontal, vertical, and middle. **M5.1.7** Draw and build familiar shapes.

Geometric Relationships	Similarity, Congruence, Symmetry, and Transformation of Shapes	Perimeter, Area, Volume, and Surface Area	Position and Direction	Construction
Grade 2				
<p>The student demonstrates an understanding of geometric relationships by</p> <p>[2] G-1 describing attributes of a triangle, circle, square, and rectangle (M5.1.1)</p> <p>[2] G-2 identifying and classifying 3-dimensional shapes (e.g., cone, sphere and cylinder) (M5.1.1)</p> <p>[2] G-3 relating real-world examples to the ideas and concepts of geometry* (M5.1.2)</p> <p>[2] G-4 constructing, comparing, classifying, and describing the relationship among geometric figures (M5.1.2)</p>	<p>The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by</p> <p>[2] G-5 creating simple shapes using concrete materials/manipulatives (M5.1.3)</p> <p>[2] G-6 identifying or drawing lines of symmetry for simple shapes (M5.1.3)</p>	<p>The student solves problems using perimeter or area by</p> <p>[2] G-7 explaining the difference between perimeter and area (M5.1.4)</p> <p>[2] G-8 determining perimeter and area of rectangular shapes using grid paper and/or manipulatives (M5.1.4)</p>	<p>The student demonstrates understanding of position and direction by</p> <p>[2] G-9 describing relative locations of objects using directional terms (inside, outside, right, left) (M5.1.6)</p> <p>[2] G-10 creating a simple map to show location of objects (M5.1.6)</p>	<p>The student demonstrates a conceptual understanding of geometric drawings or constructions by</p> <p>[2] G-11 drawing, copying, or describing a variety of shapes* (M5.1.7)</p>

Math Performance Standards (Grade Level Expectations) Grade 2

Content Standard A: Mathematical facts, concepts, principles, and theories

Statistics and Probability: Formulate questions, gather and interpret data, and make predictions

Statistics and Probability Performance Standards that apply to grades K-3: **M6.1.1** Collect, record, organize, display, and explain the classification of data. **M6.1.2** Describe data from a variety of visual displays including tallies, tables, pictographs, bar graphs, and Venn diagrams. **M6.1.3** Use the terms “maximum” and “minimum” when working with a data set. **M6.1.4** Find and record the possibilities of simple probability experiments; explain differences between chance and certainty, giving examples. **M6.1.5** Conduct a survey and tally the results.

Data Display	Analysis and Central Tendency	Probability
Grade 2		
<p>The student demonstrates an ability to classify and organize data by</p> <p>[2] S&P-1 constructing a variety of graphs from realistic situations (M6.1.1)</p> <p>[2] S&P-2 collecting, recording, interpreting, and representing data in a variety of ways (M6.1.1)</p>	<p>The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating; or drawing or justifying conclusions) by</p> <p>[2] S&P-3 describing data from a variety of graphs (e.g., newspapers, magazines, texts, computers, and other sources) (M6.1.2)</p>	<p>The student demonstrates a conceptual understanding of probability and counting techniques by</p> <p>[2] S&P-4 predicting, interpreting, and comparing data using events or repeated observations* (M6.1.4)</p> <p>[2] S&P-5 recognizing the difference between chance and certainty (M6.1.4)</p>

Math Performance Standards (Grade Level Expectations) Grade 2

Content Standards B, C, D, and E: Process skills and abilities

Applying conceptual knowledge and skills as designated in all strands of Content Standard A by problem solving, communicating, reasoning, and making connections

Problem-Solving Performance Standards that apply to grades K-3: **M7.1.1** Formulate problems from practical and mathematical activities. **M7.1.2** Develop and apply strategies including guess and check, modeling and acting out, drawings, and extending patterns to solve a variety of problems. **M7.1.3** Predict an answer before solving a problem and compare results to check for reasonableness.

Communication Performance Standards that apply to grades K-3: **M8.1.1** Translate problems from everyday language into math language and symbols. **M8.1.2** Use manipulatives, models, pictures, and language to represent and communicate mathematical ideas. **M8.1.3** Use everyday language to explain thinking about problem solving strategies and solutions to problems.

Reasoning Performance Standards that apply to grades K-3: **M9.1.1** Draw conclusions about mathematical problems. **M9.1.2** Find examples that support or refute mathematical statements. **M9.1.3** Explain why a prediction, estimation, or solution is reasonable.

Connections Performance Standards that apply to grades K-3: **M10.1.1** Apply mathematical skills and processes to literature. **M10.1.2** Apply mathematical skills and processes to situations with self and family.

Problem Solving: Understand and be able to select and use a variety of problem-solving strategies	Communication: Form and use appropriate methods to define and explain mathematical relationships	Reasoning: Use logic and reason to solve mathematical problems	Connections: Apply mathematical concepts and processes to situations within and outside of school.
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Grade 2

<p>The student demonstrates an ability to problem solve by</p> <p>[2] PS-1 creating and solving a variety of problems using appropriate strategies (M7.1.1 & M7.1.2)</p> <p>[2] PS-2 choosing appropriate operations to solve a given problem (M7.1.2)</p>	<p>The student communicates his or her mathematical thinking by</p> <p>[2] PS-3 translating problems from everyday language into math language and symbols (+, -, =, <, >) (M8.1.1)</p> <p>[2] PS-4 using everyday language to explain thinking about problem solving strategies and solutions to problems * (M8.1.3)</p> <p>[2] PS-5 using manipulatives, models, pictures, and language to represent and communicate mathematical ideas (M8.1.2)</p>	<p>The student demonstrates an ability to use logic and reason by</p> <p>[2] PS-6 explaining why a prediction, estimation, or solution is reasonable (M9.1.3)</p> <p>[2] PS-7 drawing pictures that support or refute mathematical statements (M9.1.2)</p>	<p>The student understands and applies mathematical skills and processes across the content strands by</p> <p>[2] PS-8 using real world context (e.g., self, friends, and family)* (M10.1.2)</p>
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