

APTA Performance Level Descriptors (Global) and Cut Scores: Mathematics

Mathematics	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 10
Above Mastery	<p>Cut Score: 83-100 The student demonstrates knowledge that exceeds the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following complex tasks without assistance: recognizes whole numbers to twenty (20); counts to twenty (20); finds a missing part of a pattern; models a circle, square, triangle; describes spatial relationships of over, under, left and right; recognizes a rectangle; determines which measurement tools will be used in certain circumstances; identifies value of a coin; develops a graph; identifies patterns in a graph.</p>	<p>Cut Score: 82-100 The student demonstrates knowledge that exceeds the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following complex tasks without assistance: recognizes whole numbers greater than twenty (20); identifies one of two equal parts as the fractional part one-half; solves addition problems with sums greater than twenty independently; solves basic single-digit subtraction independently; predicts and extends a pattern; identifies similarities and differences between geometric shapes; compares length, mass, temperature of objects, indicates time to the hour, identifies mixed coins by values and orders by relative worth; develops and interprets graphs, using words and numbers.</p>	<p>Cut Score: 84-100 The student demonstrates knowledge that exceeds the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following complex tasks without assistance: identifies fractional parts one-third and one-fourth; recognizes two-digit numbers to fifty (50); solves double-digit addition with regrouping; subtracts two-digit numbers; extends a pattern; describes the attribute of three-dimensional shapes; uses actual device to measure given items; identifies time to the half-hour; interprets data from a bar graph containing multiple bars.</p>	<p>Cut Score: 78-100 The student demonstrates knowledge that exceeds the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following complex tasks without assistance: connects numerals to number words; recognizes that one-third is more than one-fourth; applies addition and subtraction to solve real world problems; completes patterns with more than one item in a pattern by shapes, colors, and/or numbers; selects pictorial representations of objects with right and obtuse angles; draws a right and obtuse angle; finds the area of a figure by multiplying length by width; determines and measures the perimeter of a rectangle; measures real world objects with an inch ruler; tells time to five minute intervals; interprets graphs.</p>	<p>Cut Score: 73-100 The student demonstrates knowledge that exceeds the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following complex tasks without assistance: writes numbers up to 20; recognizes one-half as greater than one-third and one-fourth; demonstrates the concept of multiplication; uses more than one operation (add, subtract, multiply) to solve practical problems; predicts a pattern; represents an equality; identifies and locates different angles; predicts volume; selects appropriate measuring tool for measuring an object; identifies time to nearest fifteen minute intervals; categorizes data and determines frequency of occurrence for each category and organizes by range.</p>	<p>Cut Score: 82-100 emonstrates knowledge that exceeds the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following complex tasks without assistance: recognizes numbers through 100 and matches them with their word name; counts groups of 10s to 100; recognizes decimal, fraction, percent equivalences (one-half, one-fourth and one-tenth); chooses the correct operation for a given problem; extends a counting pattern; demonstrates the concept of one-half, one-third, and one-fourth through daily activities; demonstrates the concept of decimals .05, .25, .75 using provided coins; identifies and locates different kinds of angles; identifies parallel lines; determines and measures the perimeter of a rectangle; finds the area of a figure; from a given formula uses correct measurement tool to measure different lengths; makes a graph from a survey; makes a prediction based on real life situations.</p>	<p>Cut Score: 72-100 The student demonstrates knowledge that exceeds the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following complex tasks without assistance: chooses correct operations to solve application problems; divides a whole unit into equal portions; determines amount of dollars/change needed for a purchase; demonstrates the concepts of greater than, less than, and equal to when dealing with money; identifies the slope of a line graph (rising, falling, constant); recognizes and uses lines in real-life situations; uses lines and points to follow directions within the community; finds and names different angles within the community (right, straight, obtuse, acute); applies spatial relations in real-world settings; uses measurement skills to perform in real life situations; uses collected</p>

APTA Performance Level Descriptors (Global) and Cut Scores: Mathematics

							data to make personal decisions.
Mastery	<p>Cut Score: 63-82 The student demonstrates knowledge that meets the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks without assistance: recognizes whole numbers to nine (9); counts to nine (9); solves single-digit addition problems with sums to nine (9); recognizes and completes a two-object pattern; classifies basic plane geometric shapes including square, circle, triangle and performs spatial relationships over, under, left, and right; classifies measuring devices according to what they measure (length, weight and temperature); identifies coins as penny, nickel, dime and quarter; uses interviews to collect data; uses observation to collect data.</p>	<p>Cut Score: 60-81 The student demonstrates knowledge that meets the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks without assistance: recognizes two-digit whole numbers to twenty (20); identifies two equal parts as a whole; solves addition problems with sums to nineteen; models subtraction problems with or without manipulatives; recognizes and completes a three-object/item pattern; classifies and models a circle, square, rectangle and a triangle; recognizes length as long/short, weight as heavy/light, temperature as hot/cold; recognizes time in relationship to a daily schedule; identifies values of coins and determines relative values; develops and interprets graphs using objects or pictures.</p>	<p>Cut Score: 62-83 The student demonstrates knowledge that meets the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks without assistance: recognizes two-digit whole numbers to forty (40); identifies the fractional part one-half; solves double-digit addition without regrouping; subtracts single-digit numbers; completes a four-step pattern; describes a four-object/step pattern; classifies three-dimensional objects (cube, sphere, and pyramid); measures length and weight using nonstandard forms of measurement (paperclips, counting bears, etc.); identifies time to the hour; develops bar graphs and interprets data.</p>	<p>Cut Score: 59-77 The student demonstrates knowledge that meets the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks without assistance: recognizes numbers 1-60; assigns numbers 1-60 to a corresponding set of objects; identifies the fractional part one-fourth and one-third; adds two-digit numbers with and without regrouping; subtracts two digit numbers without regrouping; recognizes and completes a pattern; recognizes and replicates right and obtuse angles; determines perimeter or area of an object using nonstandard measurements; uses a ruler to measure length in inches; tells time to the half hour; collects, displays and reads data using appropriate graphs (pictorial, bar and line graphs).</p>	<p>Cut Score: 56-72 The student demonstrates knowledge that meets the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks without assistance: recognizes numbers up to 100; recognizes whole numbers 1-100 and the difference among one-half, one-fourth, and one-third; assigns a number 1-100 to a correct value; matches fractions (one-half, one-third, and one-fourth) with corresponding picture or object; multiplies single-digit numbers; uses addition and subtraction to solve an application problem; recognizes and completes a counting pattern; given two whole numbers identify which is greater or less than; recognizes and replicates angles; (right, acute, and obtuse); determines the volume of an object using nonstandard measurement; measures length with a customary ruler and yard stick; tells time to nearest five- minute intervals; organizes data into frequency of occurrence and range.</p>	<p>Cut Score: 61-81 The student demonstrates knowledge that meets the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following without assistance: recognizes numbers to 100, including fractional halves, fourths, tenths and their decimal equivalents; applies various strategies and operations to solve practical problems involving whole numbers; recognizes and extends mathematical patterns; identifies which fractions one-half, one-third, one-fourth, and decimals .5, .25, .75 are greater than/less than; identifies the angles of an object in the environment; identifies lines; determines the perimeter and area of a rectangle; utilizes the concept of time in real life; solves problems to determine possible combinations.</p>	<p>Cut Score: 42-71 The student demonstrates knowledge that meets the extended standards in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks without assistance: calculates groups of numbers using four basic operations; divides a whole unit into one-fourth, one-third, and one-half; finds the value of a combination of coins/currency; uses algebraic symbols (<, >, =) to compare two sets; uses a graph to represent relations in numbers; uses spatial relationships (geometric shapes, forms and figures, i.e., points, lines, angles and shapes) to solve problems; solves practical problems involving length, weight and capacity; collects, organizes and utilizes numerical information and data.</p>

APTA Performance Level Descriptors (Global) and Cut Scores: Mathematics

<p>Partial Mastery</p>	<p>Cut Score: 11-62 The student demonstrates knowledge characterized by errors and/or omissions in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks with assistance: recognizes whole numbers to five (5); counts to five (5); demonstrates an understanding of addition as combining collections/counting things; copies a pattern; recognizes that shapes are similar and different; describes in and out; matches a ruler, scale, thermometer and clock to use; discriminates between a penny, nickel, dime, and quarter; sorts given objects into categories.</p>	<p>Cut Score: 22-59 The student demonstrates knowledge characterized by errors and/or omissions in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks with assistance: recognizes whole numbers to ten (10); recognizes equal parts; solves addition problems with sum of nine using manipulatives; compares two quantities as more or less; duplicates a pattern; recognizes shapes, circles, squares, rectangles, and triangles; sorts items by their length and temperature; shows appropriate action at a specific time when associated with a timer; matches a coin to its value; fills in appropriate areas of a graph.</p>	<p>Cut Score: 24-61 The student demonstrates knowledge characterized by errors and/or omissions in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks with assistance: recognizes two-digit numbers to thirty (30); identifies that two equal parts make a whole; solves single-digit addition without regrouping; models single-digit subtraction; follows a pictorial pattern; sorts three-dimensional shapes; determines longer/shorter or heavier/lighter using nonstandard forms of measurement; matches the clock to the hour; copies a bar graph.</p>	<p>Cut Score: 24-58 The student demonstrates knowledge characterized by errors and/or omissions in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks with assistance: compares two quantities of objects; identifies that one-fourth and one-third are less than a whole; models addition and subtraction problems using single-digit numbers; follows a pictorial/geometric pattern; continues a pattern; correctly selects the item with an angle from two choices; traces a right angle or an obtuse angle; counts the squares for area or perimeter; sorts by length; tells time to the hour; fills in bars on a graph.</p>	<p>Cut Score: 27-55 The student demonstrates knowledge characterized by errors and/or omissions in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks with assistance: recognizes numbers to 20; identifies whole numbers on a number line; identifies one-half as one of two parts, one-third as one of three parts and one-fourth as one of four parts; multiplies single-digits up to 5; recognizes and indicates whether items are added or subtracted from group; sorts, manipulates and groups by number values; indicates from a given group of items which is more; identifies a specified angle on a familiar object; determines capacity (more/less); identifies a ruler and a yardstick; identifies time by hour and half-hour intervals; identifies items that belong in a category.</p>	<p>Cut Score: 31-60 The student demonstrates knowledge characterized by errors and/or omissions in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks with assistance: compares sets of objects to find more, less, equal; recognizes that 0.5 (one-half) is less than a whole; recognizes single-digit numbers and matches them with the number word; combines items to create a specified number; follows a counting pattern by counting two's, five's, and ten's; identifies which fractional representation of two objects is more; assembles different kinds of angles; assembles lines; compares objects by linear features; follows a daily schedule of two or more events; makes a prediction based on two choices.</p>	<p>Cut Score: 19-41 The student demonstrates knowledge characterized by errors and/or omissions in number and operations, algebra, geometry, measurement, data analysis and probability. The student performs the following tasks with assistance: uses manipulatives to add or subtract whole numbers up to twenty; arranges parts to complete a whole; identifies name and value of money: coins (.01, .05, .10, and .25) and dollars (\$1, \$5, \$10, \$20); identifies a missing part in a sequence; shows "more than," "less than," "most," "least," "same"; models horizontal and vertical lines; models lines within the environment; reproduces different kinds of angles; locates geometric shapes in the environment; uses appropriate tools for measurement; classifies information using charts, logs, checklist.</p>
-------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

APTA Performance Level Descriptors (Global) and Cut Scores: Mathematics

<p>Novice</p>	<p>Cut Score: 0-10 The student demonstrates knowledge characterized by fragmented and incomplete performance in number and operations, algebra, geometry, measurement, data analysis and probability. The student attempts to perform the following tasks with assistance: demonstrates the concept of one (1); demonstrates one-to-one correspondence between sets of objects; identifies a repeated event; manipulates concrete geometric shapes; performs in and out relationships; manipulates a ruler, scale, thermometer, and clock; determines if an object is a coin; adds an object to similar collection</p>	<p>Cut Score: 0-21 The student demonstrates knowledge characterized by fragmented and incomplete performance in number and operations, algebra, geometry, measurement, data analysis and probability. The student attempts to perform the following tasks with assistance: identifies a number from a non-number; recognizes one-to-one correspondence; gives objects away as directed; identifies items in a pattern; matches identical shapes of a circle, square or triangle; touches the picture of the item that is short, long, hot, cold; associates an object with a scheduled activity; places coins into correct value container; identifies items to be graphed.</p>	<p>Cut Score: 0-23 The student demonstrates knowledge characterized by fragmented and incomplete performance in number and operations, algebra, geometry, measurement, data analysis and probability. The student attempts to perform the following tasks with assistance: matches single-digit numbers to five (5); identifies a picture as complete; models one more and one less; continues a pattern based on a single attribute such as color, shape, or rhythm; recognizes three dimensional geometric shapes; positions items for measurement; manipulates a clock; recognizes a paper graph from two items.</p>	<p>Cut Score: 0-23 The student demonstrates knowledge characterized by fragmented and incomplete performance in number and operations, algebra, geometry, measurement, data analysis and probability. The student attempts to perform the following tasks with assistance: counts with one-to-one correspondence; identifies one-fourth of a whole; identifies a number from a set of unrelated objects; replicates/copies the pattern; matches angles; colors within the lines of a polygon; identifies a ruler from a non-ruler; identifies a clock; identifies a bar graph.</p>	<p>Cut Score: 0-26 The student demonstrates knowledge characterized by fragmented and incomplete performance in number and operations, algebra, geometry, measurement, data analysis and probability. The student attempts to perform the following tasks with assistance: points to a given number on a number line; selects one-half from a picture/object representation; multiplies by 1 and 2; recognizes that when items are added or subtracted, the result is more or less; groups like colors and shapes; indicates which is bigger - a whole item or a partial item; duplicates an angle; places objects in containers; identifies a ruler; identifies time in hour intervals; identifies objects in a category.</p>	<p>Cut Score: 0-30 The student demonstrates knowledge characterized by fragmented and incomplete performance in number and operations, algebra, geometry, measurement, data analysis and probability. The student attempts to perform the following tasks with assistance: identifies numbers 1-5 with corresponding objects; identifies a part of an object versus a whole object; matches a number to a given set; follows a counting pattern; identifies from a given whole object and partial object which is "more than" and which is "less than"; recognizes an angle; recognizes points; follows a daily schedule for a minimum of one activity; predicts the effect of an action.</p>	<p>Cut Score: 0-18 The student demonstrates knowledge characterized by fragmented and incomplete performance in number and operations, algebra, geometry, measurement, data analysis and probability. The student attempts to perform the following tasks with assistance: recognizes when items are added or taken away from a given quantity of objects; differentiates between a whole unit and a fraction; differentiates between a coin and a non-coin; identifies a missing part; shows "more than"; recognizes lines as going "up" or "across" (vertical/horizontal); recognizes lines; represents angles; sorts objects according to shapes; recognizes the differences in measure terminology; recognizes like items.</p>
----------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------