

4th Grade WASL Item Specs

Number Sense:

GLE 1.1.1, 1.1.2, 1.1.3 Understand the concepts, relative values and symbolic representations of whole numbers, fractions, and decimals (with money), understand and use the commutative, associative and identity properties of addition and multiplication and the zero property of multiplication

Vocabulary and Terms:

=, <, >, denominator, digit, equal to, even, fraction, greater than, greatest, hundreds, hundredths, in order, least, less than, number, number line, numerator, odd, ones, place value, tens, tenths, thousands, whole number

Item Characteristics:

	Recognize or illustrate place values up to, and including, one million and decimal place values to, and including, hundredths as related to money
	Decompose or combine whole numbers based on place values. (3,052 is the same as 3 thousands, 0 hundreds 5 tens and 2 ones)
	Identify and/or illustrate fractional or decimal parts of a region, whole object or set of objects, or a number
	Identify and generate equivalent representations for the same number by decomposing and composing whole numbers or fractions with like denominators, i.e. $\frac{3}{4}$ is $\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$
	Recognize or represent whole numbers in standard form, expanded form or word form
	Order and compare whole numbers, fractions or decimals (related to money) on number lines symbolically or with illustrations
	Explain why one whole number or fraction is greater than or less than another
	Identify the use or illustrate the commutative, associative or identity property of addition with whole numbers
	Replicate a given computational strategy using addition or multiplication properties when given an example (given $32 + 28 = 30 + 2 + 20 + 8 = 50 + 10 = 60$, use the same strategy with $47 + 48$)

****Ratio and proportion are not measured at grade 4****

GLE 1.1.5 Understand the meaning of multiplication and division and the meaning of addition and subtraction of like denominator fractions

Vocabulary and terms:

addition, difference, division, equation, fraction, multiplication, operation, product, subtraction, sum, total (quotient will be used with example or definition)

Item Characteristics:

	Relate multiplication to repeated addition, multiplication to division and division to repeated subtraction and division to equal shares
	Identify an illustration of multiplication or division of whole numbers
	Draw a picture or select an appropriate operation to show understanding of multiplication and division in a given situation
	Identify an illustration of addition or subtraction of like denominator fractions
	Select or use an appropriate operation to show an understanding of addition and subtraction of like denominator fractions
	Translate a given picture into an equivalent symbolic representation of multiplication or division or addition or subtraction of like denominator fractions

GLE 1.1.6 Add, subtract, multiply and divide whole numbers

Vocabulary and Terms:

Addition, difference, division, equation, multiplication, product, subtraction, sum

Item Characteristics:

	Add up to 5 one digit numbers and/or 3 - two or three digit number
	Subtract whole numbers up to three digits
	Multiply a one digit multiplier or multiple of 10 times a two-digit multiplicand
	Divide a two digit dividend by a one digit divisor or by a multiple of 10
	Interpret and apply the concept of remainder in a given context

GLE 1.1.8 use estimation with addition, subtraction, multiplication and division

Vocabulary and Terms:

about how many, closer to, estimate, estimation number line, round, to the nearest

Item Characteristics:

	Identify or explain whether estimation or exact calculation is necessary
	Estimate computation results in situations involving addition, subtraction, multiplication or division
	Use estimation to determine if computation result is reasonable
	Explain or show a strategy for estimation involving above operations

***Note, students may not receive full credit if they compute first then round*

Measurement

GLE 1.2.1 Demonstrate understanding of length, perimeter, area, time, money, weight/mass, capacity and temperature ***Students have to label the units!!!***

Vocabulary and Terms: centimeter, (cm), gram, (g), pound,(lb), area, attribute, cent, cup, day, degree, (°F), dime, dollar, foot/feet, gallon (gal), gram, high, hour, inch,(in), kilogram, (kg), length, liter, meter, (m), mile, milliliter, millimeter, minute, (min) money (\$), month, nickel, ounce, (oz), penny, perimeter, pint, pound, quart, (qt), scale, second, square unit, temperature, thermometer, time, ton, unit, weight, wide, yard (yd),

Item Characteristics:

	Identify or describe picture representations of objects or figures illustrating area
	Draw figures to illustrate understanding of the difference between area and perimeter
	Identify or describe picture representations of objects or figures using measurable attributes of perimeter, length, time, money, weight/mass, capacity, or temperature in US or metric systems and show how they can describe an object or event
	Determine the perimeter of a triangle or rectangle
	Add or subtract measurements of length, area, time, money, weight/mass, capacity or temperature
	Use the above measurements to compare objects and attributes

GLE 1.2.2, 1.2.3 Understand the difference between standard and non standard units of measurements in US or Metric systems

Vocabulary and Terms: same as above

Item Characteristics:

	Describe the benefits of standard units of measurement
	Determine whether standard units are necessary in a situation
	Identify when measurements can or cannot be compared based on the units being the same or different
	Select or describe appropriate units, standard and nonstandard, for measuring money, capacity, length or weight/mass
	Explain or show how time units are organized or to convert between units
	Explain how money, capacity, length or weight units are organized in the US system (Here kids need to know 1 foot = 12 inches, 1 yard = 3 feet, 1 pint = 2 cups, 1 quart = 2 pints, 1 gallon = 4 quarts, \$1 = 100¢, 1 pound = 16 ounces, 1 minute = 60 seconds, 1 year = 12 months = 365 (365.25) days, etc)
	Convert money, capacity, length or weight within the US system to answer a question

GLE 1.2.4, 1.2.5 Use systematic procedures with manipulatives or pictures to measure length, area, perimeter, time, weight, money, capacity and temperature

Vocabulary and Terms: same as above

Item Characteristics:

	Determine the appropriate attribute to measure in a given situation and identify, select or describe the appropriate tools and/or units for measuring
	Determine whether the appropriate tool has been selected in a situation
	Read the correct measurement from a tool in a given situation
	Describe appropriate measurement procedures, identify the attribute to be measured, select appropriate tool, compare the attribute to the tool
	Determine the value of each coin or bill and determine the total amount of money
	Evaluate whether measurement has been done correctly

GLE 1.2.6 Identify situations when estimated measurements are sufficient

Vocabulary and Terms: same as above

Item Characteristics:

	Identify a situation when estimating measurement is appropriate
	Use estimation to determine if a given measurement is reasonable
	Describe a procedure for estimating length, perimeter, area, time, money weight, capacity and time
	Estimate length, perimeter, area, time, money, weight, capacity or temperature

Geometric Sense

GLE 1.3.1, 1.3.2 Understand congruence, parallel and perpendicular lines, and line of symmetry in 2D figures

Vocabulary and Terms:

attribute, circle, congruent, figure, hexagon, line, line segment, octagon, parallel, pentagon, perpendicular, polygon, rectangle, rhombus, right angle, side, sort, square, symmetry, triangle

Item Characteristics:

	Indicate whether two figures are congruent and why
	Identify parallel lines, perpendicular lines or lines of symmetry
	Identify symmetrical figures
	Draw one or more lines of symmetry in a given figure
	Complete a picture or design given a line of symmetry
	Identify and/or describe properties of 2D figures including congruence, parallel, perpendicular and lines of symmetry
	Compare, sort and draw 2D figures given certain properties including congruence, parallel, perpendicular and lines of symmetry

GLE 1.3.3, 1.3.4 describe the relative locations of points on a number line with positive coordinates, locate or place points on a coordinate grid in the first quadrant, recognize or draw a single translation (slide) or reflection (flip) on a grid

Vocabulary and Terms:

Coordinate, graph paper, graph, grid, hexagon, intersect, line, line segment, location, number line, octagon, ordered pair, pentagon, point, polygon, rectangle, rhombus, square, triangle, x-axis, y-axis

Item Characteristics:

	Use coordinates to identify or name the location of points or objects on a positive number line
	Draw points or objects with positive coordinates on a number line
	Draw points or objects with positive coordinates on a number line
	Use ordered pairs to identify or name the location of points or objects in the first quadrant of a coordinate grid
	Identify or describe whether a figure has been transformed by a translation or a reflection
	Identify a picture or diagram of a particular translation or reflection with or without a grid
	Draw the figure resulting from a particular translation or reflection on a grid

Probability and Statistics

GLE 1.4.1 identify or describe events that are certain, impossible, possible, more likely, less likely, or equally likely

Vocabulary and Terms:

Chances of, equally likely, fair, impossible, least likely, less likely, likely, more likely, most likely, none, possible, probably, unlikely

Item Characteristics:

	Determine whether an event is certain, uncertain, possible or impossible
	Identify or describe possible or impossible events
	Identify events that are equally likely, more likely, or less likely to happen
	Explain why some outcomes are equally likely or more or less likely to happen others
	Create simple spinner, game, or situation that would produce a given outcome

GLE 1.4.3, 1.4.4 Identify or describe appropriate questions and samples to obtain the desired kind of information, demonstrate understanding of the concept of, determine and use mode and median, use this to describe a set of data

Vocabulary and Terms:

data, survey, mode can be used but will be with the example most common or most common number median (middle number)

Item Characteristics:

	Identify or write appropriate questions to obtain the desired kind of information
	Identify the mode and/or median for a set of data and demonstrate pictorially
	Complete a set of data, based on a given median or mode and a partial set of data
	Explain whether median or mode is the most appropriate measure to describe a set of data

GLE 1.4.5 read and use data from tables, charts, bar graphs, line plots and pictographs

Vocabulary and Terms:

Axis, bar graph, graph paper, line plot, pattern, pictograph, scale, table, x-axis, y-axis

Item Characteristics:

	Read data from tables, charts, pictographs or bar graphs
	Describe or explain data
	Compare data points
	Summarize the data presented
	Explain whether the title and/or labels are accurate and appropriate for the given data

Algebraic Sense

GLE 1.5.1 recognize and extend patterns of shapes and/or objects or patterns of numbers that use on arithmetic operation - addition, subtraction or multiplication - to move from one term to another, describe the rule for a pattern

Vocabulary and Terms:

Number pattern, pattern, predict, rule

Item Characteristics:

	Identify a pattern that fits a given rule
	Extend a pattern by identifying or supplying missing elements in the beginning, middle or end of the pattern
	Represent a number pattern using standard notation or symbols

GLE 1.5.3, 1.5.4 demonstrate understanding of equality and/or inequality and use =, <, >, in equations; use variables to write simple expressions and equations that represent situations that involve addition, subtraction, multiplication and division

Vocabulary and Terms:

=, <, >, equal, equation, expression, and pattern

Item Characteristics:

	Write or identify an expression or equation to represent a situation involving addition or subtraction
	Identify or describe a situations that represents a given expression or equation involving addition or subtraction
	Identify or write a rule for a pattern or function based on a single arithmetic operation using addition or subtraction
	Determine whether two expressions are equal
	Describe a situation in which two expressions are equal

GLE 1.5.6 evaluate or solve simple expressions with addition, subtraction, multiplication and division using manipulatives, pictures, and/or symbols

Vocabulary and Terms: =, equal, equation, expression

Item Characteristics:

	Solve a simple equation in a given situation using addition or subtraction (could be given a box, variable or symbol to solve for the unknown)
	Write and solve simple equations for a given situation using addition or subtraction
	Draw a picture to demonstrate the meaning of a solution to an equation

Process Strands

Process strand 6: Solves Problems and Reasons Logically (all content strand vocabulary applies)

GLE 2.1.1, 2.1.2, 2.1.3

- Identify what information is relevant, what is missing or unnecessary to solve a given situation
- Clarify the purpose of a problem or identify the question the situation presents
- Formulate or identify additional questions that need to be answered in order to find a solution to a given problem
- Identify the "known" and "unknown" information in a given problem

GLE 2.2.1, 2.2.2, 2.2.3, 2.2.4

- Solve a problem by being able to select and organize relevant information, use strategies and procedures appropriately to construct a solution and answer the problem with a solution that is mathematically correct and answers the question
- determine whether a solution is viable, correct and answers the question asked

GLE 3.1.1

- interpret mathematics information or results
- identify a valid interpretation of mathematical information results
- compare math information in text, graphs, tables, diagrams, and pictures in order to answer a question
- identify the agreement or differences between information, diagrams, and picture representations
- compare patterns or trends shown by data or other information

GLE 3.2.1, 3.2.2, 3.2.3

- identify a valid conclusion based on given information
- draw a conclusion and support the conclusion with appropriate data or facts based on the given situation
- show examples or data to support or contradict a given solution
- evaluate procedures or results based on a given partial or complete solution to a problem

GLE 2.2.2, 2.2.3, 3.3.1, 3.3.2, 3.3.3

- use various concepts, procedures and problem solving strategies to construct a solution for a given situation AND explain why the solution is appropriate and make a comparison using evidence information from the problem situation, known facts, patterns, relationships and/or counter examples
- use various concepts, procedures and problem solving strategies to construct a solution AND check for the reasonableness of results

Process Strand 7 Communicates Understanding

GLE 4.1.1, 4.1.2

- develop and describe a plan to gather mathematical information including a specified number of pieces of information and where or how to find that information
- list or describe the general procedures or steps of a plan, not a survey, to gather exactly the information sought and no irrelevant information
- extract mathematical information from various sources such as pictures, symbols, text, tables, charts, bar graphs, line plots, diagrams and models for a purpose
- write questions that could be answered using data sources such as magazines, newspapers, menus, sales and travel brochures, TV and bus schedules, sales receipts

GLE 4.2.1, 4.2.2, 4.2.3

- clearly organize math data in a useful format for a given purpose
- represent math information in pictures, tables, charts, pictographs, bar graphs, drawings etc. and to include titles, labels, appropriate and consistent scales and accurate data display
- use both everyday and mathematical language and notation to clearly explain or describe math ideas, facts, procedures or strategies for a given purpose or audience

Process Strand 8 Makes Connections

GLE 5.1.1, 5.1.2

- use concepts and procedures from two different strands - number, measurement, geometry, probability and statistics, algebra
- identify which of three math models or representations is equivalent to a given model or representation
- create a model or representation that is equivalent to a given model or representation including numerical, pictorial, geometric and/or written description