Appendix 14A: TIMSS 2015 Fourth Grade Mathematics Item Descriptions Developed During the TIMSS 2015 Benchmarking

Items at Low International Benchmark (400)	
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M01_01	Identifies a four-digit number given in words
M04_01	Adds a four-digit, three-digit, and two-digit number
M05_01	Subtracts a three-digit number from another three-digit number
M07_01	Identifies the rectangular representation for a unit fraction
N01_01	Adds three three-digit numbers
N01_04	Divides a two-digit number by a one-digit number
N01_05	Generates the next value in a well-defined number pattern
N01_07	Recognizes a unit fraction represented pictorially
N02_04	Multiplies a three-digit number by a one-digit number
N02_05	Identifies an expression that represents a situation
N03_01	Adds two two-digit numbers
N05_01	Identifies a four-digit number represented in words
N05_02	Solves a two-step word problem involving subtraction of one- and two-digit numbers
N06_02	Solves a word problem involving addition of two two-digit numbers
N06_08	Recognizes a non-unit fraction represented pictorially
N07_01	Solves a word problem involvi Solves a word problem involving subtraction of a one-digit number from a two-digit nu
N09_05	Multiplies a one-digit number by a two-digit number
N10_01	Orders four three-digit numbers

Items at Intermediate International Benchmark (475)	
M01_02	Solves a word problem involving multiplication of one-digit numbers
M02_06	Generates the next term in a well-defined number pattern
M04_02	Determines a four-digit number given the place values of the digits
M08_01	Identifies a four-digit number given in expanded form
M08_07	Identifies an expression that represents a situation
M09_01	Adds a four-digit and a three-digit number
M10_02	Divides a three-digit number by a one-digit number
M12_03	Multiplies a one-digit number by a three-digit number
M12_06	Determines the operation to complete a number sentence
M13_02	Identifies the representation of a non-unit fraction
N01_03	Solves a word problem involving multiplication of a one-digit number by 10
N01_06	Solves a two-step word problem involving subtraction and division
N01_12	Solves a word problem involving addition of money
N02_01	Identifies a four-digit number given the digits in two places
N02_02	Solves a word problem involving addition of two- and three-digit numbers
N02_03	Divides a two-digit number by a one-digit number with a remainder
N03_02	Divides a two-digit number by a one-digit number
N03_07	Solves a word problem involving addition of decimals
N03_11	Solves a word problem involving addition of hours and minutes
N05_03	Solves a word problem involving division of a two-digit number by a one-digit number
N05_04	Identifies an expression that represents a situation
N05_12	Solves a word problem involving addition of hours and minutes
N06_01	Subtracts a two-digit number from a three-digit number

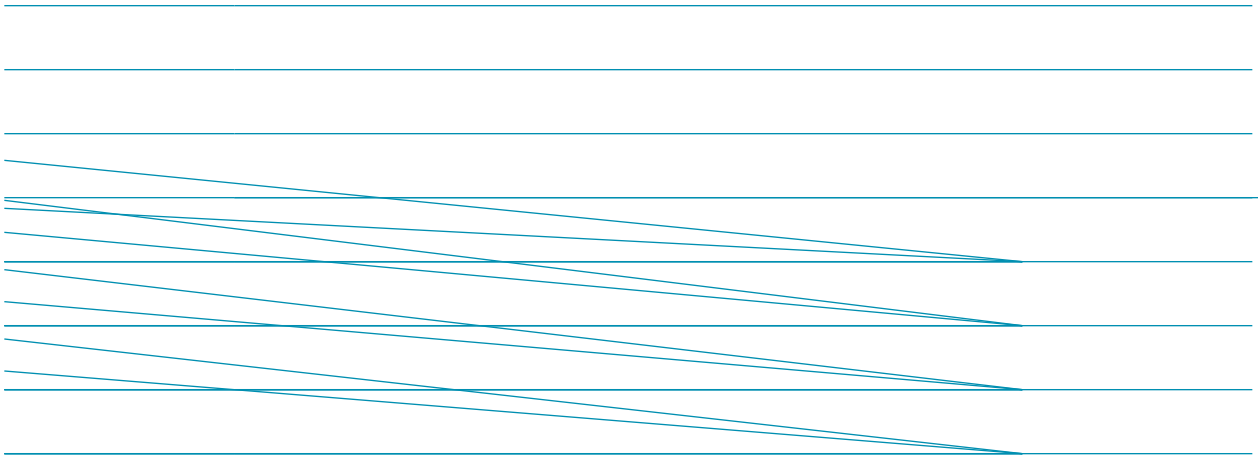
N06_03	Solves a word problem involving multiplication of one- and two-digit numbers
N06_06	Determines the missing number in a well-defined number pattern
N07_02	Multiplies a one-digit number by a two-digit number
N07_04	Writes a number between two two-digit numbers
N07_06	Finds the missing term in an addition word problem
N09_01	Subtracts a two-digit number from a three-digit number
N09_03	Writes a four-digit number given the digits in two places
N09_06	Solves a multi-step word problem involving multiplication and division with a remainder
N09_07	Writes a fraction larger than a given unit fraction
N10_02	Solves a word problem involving division of a two-digit number by a one-digit number
N10_03B	Justifies the greatest number if one of four numbers is increased by 100
N10_05	Solves a word problem involving subtraction of one- and two-digit numbers
[illegible]	
M01_06A	Identifies the shape made by connecting specified dots on a circle
M02_09	Identifies a time when the hands of a clock form a right angle
M03_09	Draws the reflection of a simple shape across a line
M04_08	Finds the halfway point between two positions on a number line
M05_07	Identifies a pair of parallel lines
M05_10	Identifies a net of a cube
M09_08	Identifies a shape with a right angle
M13_07	Identifies the number of triangular faces in a given three-dimensional shape
N01_11	Draws a rectangle with given dimensions on a square grid
N02_09	Draws a right angle on a square grid given one side
N05_11	Determines the number of unit cubes to fill a rectangular prism
N06_09	

N06_11	Determines the number of faces on a rectangular prism
N07_10	Identifies a common shape inside another common shape
N09_09	Identifies a triangle with given properties
N09_11	Justifies which figure made of unit cubes has the larger volume
N10_08	Writes the names of four common two-dimensional shapes

M01_11	Interprets information in a table to solve a problem
M02_10	Reads data from a table
M07_12	Recognizes which set of labels on a bar graph could show given information
M14_10A	Reads data from a graph

Items at High International Benchmark (550)

M01_03	Identifies multiples of a given number
M01_04	Adds two two-place decimals
M01_05	Follows a rule to complete a table
M02_01	Divides a two-digit number by a one-digit number with a remainder
M02_02	Provides numbers that round to specified conditions (2 of 2 points)
M02_03	Analyzes place value conditions to identify a four-digit number
M03_01	Subtracts a three-digit number from a four-digit number
M03_02	Solves a word problem involving division of two-digit numbers with a remainder
M04_05	Solves a word problem involving subtracting one-place decimals
M04_06	Identifies an expression that represents a situation
M05_02	Identifies the whole number closest to a given multiple of a hundred
M06_01	Identifies an expression that represents a situation
M06_05	Solves a multi-step problem involving two-place decimals and whole numbers



M14_05	Solves for the missing number in a subtraction sentence
M14_07	Follows a two-step rule to generate the next number in a pattern
[illegible]	
M01_06B	Draws a specified geometric shape by connecting dots on a circle
M01_06C	Draws a specified geometric shape by connecting dots on a circle
M01_07	Identifies the number of edges of a solid shown in a picture
M01_08	Determines the perimeter of a figure made of squares
M03_07	Identifies a shape that can be made by combining two given shapes
M03_08	Identifies a property common to two triangles
M04_09	Identifies a solid given two faces
M05_08	

M03_11	Compares information in a table and a bar graph to solve a problem
M03_12	Interprets data from a pie chart to solve a problem
M05_13	Completes a bar graph from information given in a tally chart (2 of 2 points)
M06_11B	Uses information from a bar graph to solve a problem
M07_11	Interprets a bar graph to solve a problem
M07_13A	Finds totals and decides which one is the least
M09_12	Completes a bar graph using information from a pictograph
M10_11	Identifies a pie chart that represents given data
M11_11	Uses information from a bar graph to solve a problem
M11_12	Identifies a pie chart that has the same information as a bar graph
M12_11A	Uses a key to retrieve information from a bar graph

M05_04A	Identifies the circular representation of a non-unit fraction
M05_04B	Explains why a chosen circular representation shows a given non-unit fraction
M05_05	

M01_10	Draws all four lines of symmetry on a non-standard shape (2 of 2 points)
M02_07	Estimates the total length of a curved path given the length of a part of it
M02_08A	Given a description of a movement on a number line, determines another possible ending position
M02_08B	Given a starting point and two movements on a number line, identifies a possible ending position
M03_10	Finds the perimeter of a given figure made of a square and a rectangle
M04_10A	Draws a parallel line on a square grid given conditions
M04_10B	Draws a perpendicular line on a square grid given conditions
M05_09	Solves a multi-step word problem involving perimeter
M05_11	Identifies the area of a right triangle drawn on a grid
M06_08	Selects an appropriate unit of length to use in three different contexts
M07_08	Determines the number of cubes in a given rectangular box
M07_10	Draws a line through a given point perpendicular to a given line
M08_08	Identifies parallel lines on a geometric shape
M09_07	Identifies a rule to sort shapes into two sets
M09_09	Identifies a shape that has both line and rotational symmetry
M09_10	Determines the length of one side of an equilateral triangle and finds its perimeter
M10_08	Reads a ruler to find the length of a line segment beginning and ending at half-units
M10_10	Determines the number of square and triangular faces of three-dimensional shapes (2 of 2 points)
M11_07	Reads a ruler to find the length of an object beginning at a half-unit
M11_10	Finds the area of a rectangle given its dimensions
M12_09	Given two positions on a curved path, follows specified moves and labels another position (2 of 2 points)
M12_10	Identifies a net of a hexagonal prism
M13_06A	Identifies a street parallel to a given street

M07_13B	Draws and justifies a conclusion from data given in a table
M08_11	Represents data from a table in a pie chart
M12_11B	