| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 73 | 1.2 | 70 | 1.7 | 76 | 1.3 |
| C01 | No | Shown graph ( 20 unit increments), which class collected 45 bottles? | 93 | 0.7 | 93 | 1.0 | 94 | 0.9 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 87 | 0.9 | 85 | 1.2 | 88 | 1.1 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 81 | 1.2 | 81 | 1.7 | 82 | 1.5 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 81 | 1.6 | 79 | 3.0 | 83 | 2.5 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 55 | 2.6 | 55 | 3.7 | 54 | 3.2 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 51 | 2.7 | 50 | 3.0 | 51 | 3.7 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 59 | 2.4 | 60 | 2.9 | 59 | 3.3 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 80 | 1.9 | 81 | 2.4 | 78 | 2.8 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 56 | 2.6 | 51 | 3.5 | 61 | 3.2 |
| 501 | Yes | Given table of frequencies, complete bar graph for same information. | 50 | 1.8 | 48 | 2.3 | 53 | 2.5 |
| T01A | Yes | Read simple information from bar graph. | 87 | 0.9 | 87 | 1.4 | 88 | 1.5 |
| т01B | Yes | Read information from bar graph and add to find a total. | 34 | 1.8 | 35 | 2.6 | 34 | 2.4 |

ercent Correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 83 | 0.7 | 84 | 0.8 | 83 | 1.0 |
| A02 | No | Determine total number from ratio and one number. | 64 | 0.9 | 64 | 1.3 | 64 | 1.3 |
| B09 | No | What is the sum of 2.5 and 3.8? | 63 | 1.4 | 63 | 1.7 | 63 | 2.0 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 59 | 1.9 | 59 | 2.6 | 59 | 2.2 |
| D08 | No | Subtract: 4.03-1.15. | 48 | 1.9 | 45 | 2.3 | 52 | 2.3 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 53 | 1.4 | 53 | 2.0 | 53 | 2.0 |
| E04 | No | Which of the following numbers means 7/10? | 47 | 1.9 | 49 | 2.4 | 45 | 2.3 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 71 | 1.3 | 69 | 1.6 | 72 | 2.0 |
| G01 | No | Given map and legend, how far apart are two cities? | 43 | 1.3 | 46 | 1.8 | 40 | 1.9 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 49 | 2.4 | 51 | 3.3 | 46 | 3.1 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 59 | 2.7 | 61 | 3.5 | 57 | 3.6 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 44 | 2.1 | 45 | 3.5 | 43 | 3.0 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 72 | 2.2 | 70 | 2.9 | 74 | 3.0 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 38 | 2.5 | 38 | 3.3 | 38 | 3.6 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 40 | 2.6 | 41 | 3.1 | 39 | 3.7 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 23 | 1.4 | 23 | 1.9 | 23 | 2.1 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 56 | 1.7 | 55 | 2.2 | 57 | 2.5 |
| т04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 34 | 1.6 | 31 | 2.2 | 38 | 2.2 |
| т04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 21 | 1.6 | 20 | 2.1 | 23 | 1.9 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 59 | 1.9 | 56 | 2.5 | 62 | 2.5 |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 67 | 1.7 | 71 | 2.4 | 64 | 2.1 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 49 | 2.0 | 51 | 2.7 | 47 | 2.3 |
| U03C | Yes | Solve two proportions and compare results. | 79 | 1.3 | 79 | 1.8 | 79 | 1.8 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 24 | 1.4 | 21 | 1.7 | 27 | 2.5 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 78 | 1.3 | 76 | 1.6 | 79 | 1.4 |
| D07 | No | Which two figures are congruent? | 89 | 1.0 | 87 | 1.4 | 90 | 1.1 |
| F09 | No | Which of the following must be true of a triangle? | 76 | 1.3 | 76 | 1.9 | 76 | 1.8 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 46 | 1.5 | 45 | 2.1 | 47 | 2.1 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 59 | 2.1 | 63 | 3.0 | 55 | 2.8 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 86 | 1.5 | 87 | 1.9 | 85 | 2.5 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 94 | 0.9 | 94 | 1.4 | 94 | 1.4 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 76 | 2.3 | 78 | 3.1 | 75 | 3.1 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 76 | 1.8 | 74 | 2.9 | 78 | 2.3 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 84 | 1.2 | 81 | 2.1 | 87 | 2.0 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 94 | 1.0 | 93 | 1.6 | 95 | 1.3 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 54 | 2.7 | 50 | 2.7 | 58 | 4.0 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 56 | 2.9 | 54 | 3.6 | 58 | 3.4 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 72 | 1.5 | 68 | 1.8 | 76 | 2.1 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 87 | 0.7 | 88 | 0.8 | 86 | 0.9 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 48 | 1.3 | 49 | 2.0 | 47 | 1.9 |
| C02 | No | Find volume of a stack of 5 cubes. | 69 | 1.5 | 71 | 1.9 | 67 | 2.1 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 54 | 1.0 | 55 | 1.9 | 52 | 1.6 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 76 | 1.2 | 74 | 1.9 | 78 | 1.6 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 80 | 1.6 | 81 | 2.0 | 79 | 1.7 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 68 | 1.3 | 70 | 1.6 | 66 | 1.9 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 79 | 1.1 | 81 | 1.6 | 76 | 2.1 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 57 | 1.8 | 56 | 2.3 | 58 | 2.1 |
| J06 |  | Which of the following weight (mass) measures is the largest? | 73 | 2.3 | 78 | 2.6 | 68 | 3.2 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 58 | 2.1 | 60 | 3.0 | 56 | 3.1 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 77 | 1.9 | 77 | 3.5 | 76 | 3.1 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 23 | 2.2 | 22 | 2.7 | 25 | 3.3 |
| L0 6 |  | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 53 | 2.3 | 54 | 2.9 | 51 |  |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 21 | 2.0 | 23 | 2.6 | 18 | 3.5 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 45 | 2.3 | 40 | 3.2 | 50 | 3.4 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 58 | 1.7 | 57 | 2.6 | 59 | 2.4 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 62 | 2.2 | 65 | 2.9 | 58 | 2.8 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 49 | 1.9 | 46 | 2.6 | 53 | 2.7 |
| v05 | Yes | How many millimeters are in a meter? | 57 | 2.1 | 61 | 2.4 | 53 | 2.9 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 55 | 1.6 | 57 | 2.2 | 53 | 2.1 |
| H08 | No | Given number pattern, what are the next three numbers? | 84 | 1.4 | 83 | 1.8 | 84 | 1.7 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 59 | 2.6 | 59 | 3.6 | 60 | 3.4 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 37 | 1.8 | 38 | 2.5 | 35 | 2.8 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 54 | 2.7 | 54 | 3.1 | 54 | 3.5 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 65 | 2.5 | 66 | 3.3 | 64 | 3.8 |
| L0 4 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 78 | 1.8 | 76 | 2.4 | 81 | 2.8 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 70 | 2.0 | 72 | 2.4 | 68 | 3.2 |
| M09 | Yes | 4 x _ <17: Which number could go in the blank to make the sentence true? | 65 | 2.1 | 65 | 3.3 | 65 | 3.6 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 72 | 1.5 | 77 | 2.2 | 67 | 2.2 |


| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 56 | 1.0 | 53 | 1.3 | 58 | 1.3 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 88 | 0.6 | 89 | 0.9 | 86 | 0.9 |
| B08 | No | Which addition expression has the same value as 342? | 84 | 0.8 | 86 | 1.3 | 83 | 1.0 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 80 | 1.2 | 81 | 1.6 | 80 | 1.5 |
| E02 | No | Which digit is in the hundreds place in 2345? | 83 | 1.5 | 83 | 1.7 | 84 | 1.8 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 66 | 1.6 | 69 | 1.9 | 63 | 2.6 |
| G03 | No | Which of the following is a name for 9740? | 94 | 0.8 | 93 | 1.2 | 94 | 0.8 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 54 | 1.9 | 56 | 2.3 | 53 | 2.7 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 68 | 1.3 | 70 | 1.9 | 66 | 1.5 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 51 | 2.7 | 48 | 3.4 | 54 | 3.7 |
| 104 | Yes | What is 3 times 23? | 86 | 2.0 | 87 | 2.6 | 84 | 2.8 |
| 109 | Yes | Subtract: 6000-2369. | 47 | 2.3 | 45 | 2.8 | 49 | 3.3 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 41 | 2.6 | 47 | 3.0 | 35 | 3.2 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 85 | 1.8 | 81 | 2.7 | 88 | 1.7 |
| K02 | Yes | Add: 6971 + 5291 | 76 | 2.6 | 69 | 3.4 | 83 | 3.0 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 45 | 2.6 | 48 | 3.8 | 42 | 3.7 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 69 | 2.0 | 68 | 3.1 | 69 | 3.0 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 78 | 1.8 | 83 | 2.2 | 74 | 2.6 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 91 | 1.5 | 90 | 1.6 | 92 | 1.9 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 61 | 2.0 | 64 | 2.6 | 58 | 3.1 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 66 | 1.7 | 65 | 2.5 | 67 | 2.2 |
| U05 | Yes | Write addition fact as a multiplication fact. | 71 | 1.7 | 69 | 2.3 | 73 | 2.1 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 51 | 1.7 | 57 | 2.6 | 45 | 2.4 |
| V03 | Yes | What is 5 less than 203? | 71 | 1.7 | 75 | 2.6 | 67 | 2.3 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 22 | 1.4 | 18 | 1.9 | 25 | 2.1 |
| v04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 54 | 1.7 | 52 | 2.4 | 57 | 2.6 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ItEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 76 | 1.6 | 76 | 1.9 | 76 | 2.0 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 88 | 1.3 | 88 | 1.7 | 88 | 1.7 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 80 | 1.8 | 78 | 2.2 | 82 | 2.5 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 82 | 1.5 | 84 | 1.8 | 80 | 2.1 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 88 | 1.7 | 89 | 1.9 | 89 | 2.5 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 66 | 3.0 | 71 | 4.2 | 63 | 4.1 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 45 | 3.5 | 46 | 4.8 | 42 | 4.7 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 54 | 3.6 | 52 | 5.7 | 55 | 4.6 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 81 | 2.7 | 84 | 3.6 | 77 | 4.2 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 75 | 3.0 | 75 | 4.3 | 77 | 4.1 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 39 | 3.2 | 39 | 3.5 | 38 | 4.1 |
| т01A | Yes | Read simple information from bar graph. | 78 | 1.8 | 79 | 2.7 | 79 | 2.8 |
| т01B | Yes | Read information from bar graph and add to find a total. | 38 | 3.0 | 35 | 3.9 | 42 | 4.1 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 96 | 0.5 | 96 | 0.6 | 96 | 0.8 |
| A02 | No | Determine total number from ratio and one number. | 62 | 1.4 | 64 | 1.8 | 61 | 1.8 |
| B09 | No | What is the sum of 2.5 and 3.8? | 67 | 1.9 | 69 | 2.1 | 65 | 3.2 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 50 | 2.5 | 49 | 3.3 | 50 | 3.4 |
| D08 | No | Subtract: 4.03-1.15. | 83 | 1.4 | 80 | 2.1 | 85 | 1.8 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 52 | 2.2 | 56 | 2.8 | 48 | 3.1 |
| E04 | No | Which of the following numbers means 7/10? | 14 | 1.8 | 16 | 2.2 | 12 | 2.9 |
| F06 | No | Janis ate 1/2 cake, Maija ate 1/4, mother ate 1/4, how much remains? | 80 | 1.6 | 80 | 2.6 | 81 | 2.2 |
| G01 | No | Given map and legend, how far apart are two cities? | 55 | 2.2 | 60 | 2.8 | 49 | 2.7 |
| 102 | Yes | Which of the following word expressions is the same as . 4 ? | 24 | 3.8 | 29 | 5.4 | 15 | 3.8 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 51 | 3.0 | 59 | 4.5 | 41 | 4.9 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 71 | 3.7 | 72 | 4.3 | 71 | 5.5 |
| J07 |  | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 45 | 3.5 | 45 | 5.0 | 45 | 5.7 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 59 | 3.2 | 62 | 4.7 | 57 | 4.9 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 34 | 3.2 | 37 | 4.6 | 30 | 4.6 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 31 | 2.2 | 31 | 3.0 | 32 | 3.5 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 53 | 2.7 | 53 | 3.6 | 54 | 3.3 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 13 | 1.5 | 11 | 1.9 | 15 | 2.7 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 5 | 1.0 | 4 | 1.1 | 7 | 1.7 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 55 | 2.3 | 52 | 3.5 | 58 | 3.0 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 67 | 2.3 | 71 | 2.8 | 63 | 3.1 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 61 | 2.7 | 65 | 3.6 | 57 | 3.4 |
| U03C | Yes | Solve two proportions and compare results. | 81 | 1.8 | 82 | 2.6 | 80 | 2.9 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 27 | 2.6 | 26 | 3.0 | 26 | 3.7 |


| ITEM | REL | LABEL |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which | of these solids has both a flat surface and a curved surface? | 22 | 1.3 | 21 | 1.9 | 22 | 2. |
| D07 | No | Which | two figures are congruent? | 91 | 0.8 | 93 | 1.0 | 90 | 1.5 |
| F09 | No | Which | of the following must be true of a triangle? | 71 | 2.1 | 73 | 2.4 | 69 | 3.3 |
| H05 | No | Shown | diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 58 | 2.4 | 59 | 3.0 | 57 | 2.9 |
| 101 | Yes | Shown | map with city blocks, and given directions to school, locate school on map. | 70 | 3.5 | 77 | 3.9 | 63 | 5.1 |
| 106 | Yes | Which | of the following figures is made with straight sides only? | 74 | 2.7 | 78 | 3.8 | 69 | 4.1 |
| J01 | Yes | Shown | hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 89 | 2.1 | 88 | 2.9 | 91 | 2.6 |
| J02 | Yes | Shown | several drawings with a line through each, which does not show a line of symmetry? | 74 | 2.6 | 70 | 4.1 | 79 | 3.6 |
| K01 | Yes | Shown | figure with overlapping shapes, which number is in square and circle, but not in triangle? | 68 | 3.2 | 70 | 4.1 | 68 | 4.5 |
| K08 | Yes | Which | of the following rectangles is not divided into 4 equal parts? | 83 | 2.6 | 84 | 3.2 | 83 | 3.8 |
| L03 | Yes | Shown | "game board" graph, which object is located at (2,D)? | 90 | 2.2 | 88 | 2.9 | 91 | 3.3 |
| L05 | Yes | Shown | diagram of cube with one edge labeled, how many edges does the cube have? | 50 | 3.4 | 50 | 4.8 | 48 | 5.1 |
| M04 | Yes | Given | explanation of how grid works, give the coordinates of a particular point. | 37 | 3.4 | 35 | 3.4 | 39 | 4.8 |
| T05 | Yes | Shown | picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 66 | 2.2 | 67 | 3.0 | 66 | 3. |

*COUNTRY ID*=Austria SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 94 | 0.5 | 95 | 0.8 | 94 | 0.7 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 56 | 2.0 | 57 | 2.5 | 55 | 2.5 |
| C02 | No | Find volume of a stack of 5 cubes. | 81 | 1.8 | 84 | 2.1 | 77 | 2.3 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 72 | 1.8 | 77 | 2.1 | 65 | 3.0 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 80 | 1.1 | 83 | 1.8 | 77 | 2.2 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 70 | 1.8 | 74 | 2.8 | 65 | 2.6 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 67 | 1.9 | 67 | 3.1 | 68 | 2.2 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 94 | 0.9 | 95 | 1.2 | 94 | 1.2 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 58 | 2.7 | 59 | 3.4 | 56 | 3.3 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 89 | 2.0 | 91 | 2.2 | 85 | 3.5 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 61 | 3.5 | 62 | 4.0 | 63 | 5.0 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 89 | 2.0 | 87 | 2.8 | 91 | 2.5 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 23 | 2.3 | 22 | 3.4 | 25 | 4.2 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 65 | 2.9 | 61 | 4.7 | 67 | 4.2 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 55 | 3.1 | 58 | 5.2 | 50 | 5.2 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 51 | 3.0 | 52 | 4.1 | 50 | 4.8 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 65 | 2.0 | 68 | 3.4 | 62 | 3.2 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 64 | 2.2 | 70 | 2.8 | 60 | 3.1 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 73 | 2.4 | 73 | 3.3 | 73 | 3.0 |
| v05 | Yes | How many millimeters are in a meter? | 67 | 2.5 | 66 | 3.6 | 68 | 3.3 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 65 | 2.1 | 65 | 3.1 | 64 | 2.6 |
| H08 | No | Given number pattern, what are the next three numbers? | 59 | 1.9 | 55 | 3.1 | 64 | 2.8 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 83 | 2.4 | 83 | 3.7 | 83 | 3.8 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 41 | 3.8 | 46 | 4.5 | 38 | 5.9 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 47 | 3.3 | 45 | 4.6 | 49 | 4.7 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 68 | 3.4 | 77 | 3.5 | 59 | 4.8 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 85 | 1.8 | 84 | 3.1 | 85 | 3.4 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 57 | 3.1 | 54 | 4.4 | 59 | 5.3 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 74 | 2.8 | 71 | 4.4 | 77 | 4.6 |
| U04 | Yes | Explain operation used to find next number in a pattern. | 64 | 2.5 | 67 | 3.2 | 61 | 3.1 |

ercent Correct on the Mathematics Items - Fourth Grade

## Fourth Grade

| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 86 | 0.9 | 86 | 1.2 | 85 | 1.3 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 83 | 1.6 | 85 | 1.7 | 81 | 1.9 |
| B08 | No | Which addition expression has the same value as 342? | 89 | 1.0 | 89 | 1.7 | 89 | 1.4 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 78 | 1.7 | 79 | 2.7 | 77 | 2.7 |
| E02 | No | Which digit is in the hundreds place in 2345? | 85 | 1.3 | 86 | 1.7 | 85 | 1.9 |
| F07 | No | What number equals 3 ones + 5 tens +4 hundreds + 60 thousands? | 82 | 1.5 | 83 | 1.8 | 80 | 2.2 |
| G03 | No | Which of the following is a name for 9740? | 95 | 0.9 | 94 | 1.4 | 97 | 0.9 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 79 | 1.5 | 79 | 2.1 | 80 | 1.9 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 76 | 1.9 | 76 | 2.5 | 76 | 2.2 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300 ? | 65 | 2.9 | 65 | 3.6 | 63 | 4.6 |
| 104 | Yes | What is 3 times 23? | 94 | 1.5 | 96 | 1.7 | 92 | 2.5 |
| 109 | Yes | Subtract: 6000-2369. | 92 | 2.0 | 91 | 3.1 | 93 | 2.5 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 58 | 3.6 | 58 | 4.7 | 59 | 5.2 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 81 | 2.8 | 81 | 3.1 | 80 | 4.2 |
| K02 | Yes | Add: $6971+5291$, | 91 | 1.8 | 93 | 2.6 | 88 | 2.9 |
| L07 | Yes | In which of the following pairs of numbers is the 2nd number 100 more than the 1st? | 68 | 2.8 | 72 | 4.5 | 63 | 3.9 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 65 | 2.5 | 64 | 4.2 | 66 | 5.2 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 60 | 3.2 | 59 | 4.9 | 62 | 4.3 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 95 | 1.3 | 94 | 2.2 | 96 | 1.6 |
| S02 | Yes | Complete number sentence: 2000+? $+30+9=2739$. | 61 | 2.2 | 58 | 2.7 | 64 | 3.2 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 41 | 2.5 | 43 | 3.7 | 41 | 3.5 |
| U05 | Yes | Write addition fact as a multiplication fact. | 82 | 1.7 | 77 | 2.6 | 87 | 2.2 |
| V02 | Yes | Write the number that is 1000 more than $56,821$. | 59 | 2.6 | 65 | 3.4 | 51 | 3.4 |
| v03 | Yes | What is 5 less than 203? | 84 | 2.1 | 84 | 2.8 | 83 | 2.7 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 23 | 1.9 | 22 | 2.4 | 25 | 2.7 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 53 | 3.0 | 51 | 4.0 | 53 | 3.3 |

*COUNTRY ID*=Canada SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 73 | 1.6 | 69 | 2.1 | 77 | 1.9 |
| C 01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 93 | 0.7 | 92 | 1.7 | 93 | 1.4 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 85 | 1.1 | 82 | 1.8 | 88 | 1.3 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 79 | 1.4 | 78 | 1.9 | 80 | 2.1 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 75 | 3.8 | 74 | 4.5 | 81 | 2.7 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 47 | 3.1 | 50 | 3.9 | 44 | 4.2 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 49 | 4.9 | 52 | 3.7 | 50 | 5.4 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 63 | 3.0 | 62 | 4.7 | 60 | 5.6 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 83 | 1.9 | 85 | 2.3 | 82 | 2.6 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 54 | 4.0 | 53 | 3.5 | 55 | 5.5 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 46 | 2.6 | 42 | 3.5 | 48 | 3.2 |
| T01A | Yes | Read simple information from bar graph. | 93 | 0.8 | 95 | 0.9 | 92 | 1.5 |
| т01B | Yes | Read information from bar graph and add to find a total. | 46 | 2.8 | 45 | 3.3 | 49 | 3.1 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Canada SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 82 | 1.0 | 82 | 0.9 | 82 | 1.2 |
| A02 | No | Determine total number from ratio and one number. | 56 | 1.0 | 54 | 1.3 | 59 | 1.2 |
| B09 | No | What is the sum of 2.5 and 3.8? | 55 | 2.3 | 54 | 2.9 | 55 | 2.8 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 63 | 2.4 | 61 | 2.6 | 64 | 3.2 |
| D08 | No | Subtract: 4.03-1.15. | 61 | 1.8 | 60 | 2.4 | 62 | 1.9 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 52 | 1.9 | 52 | 2.5 | 52 | 2.6 |
| E04 | No | Which of the following numbers means 7/10? | 43 | 2.1 | 41 | 2.4 | 45 | 2.3 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 56 | 1.6 | 56 | 2.2 | 55 | 2.6 |
| G01 | No | Given map and legend, how far apart are two cities? | 41 | 1.4 | 46 | 2.2 | 36 | 2.6 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 31 | 3.1 | 35 | 3.7 | 26 | 3.3 |
| 105 |  | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 41 | 2.3 | 43 | 4.4 | 39 | 3.7 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 52 | 2.3 | 56 | 4.5 | 49 | 3.6 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 79 | 2.6 | 77 | 4.2 | 80 | 3.1 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 29 | 2.7 | 25 | 2.9 | 32 | 4.0 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 40 | 4.4 | 35 | 4.4 | 43 | 5.5 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 25 | 2.2 | 23 | 2.3 | 26 | 2.7 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 44 | 2.1 | 43 | 3.1 | 47 | 3.1 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 22 | 1.7 | 17 | 2.0 | 25 | 2.9 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 12 | 1.5 | 11 | 1.9 | 13 | 2.0 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 62 | 3.1 | 61 | 2.7 | 65 | 3.0 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 61 | 3.3 | 66 | 3.1 | 55 | 4.2 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 42 | 2.5 | 46 | 2.7 | 37 | 3.7 |
| U03C | Yes | Solve two proportions and compare results. | 79 | 1.5 | 77 | 3.1 | 81 | 2.1 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 20 | 2.2 | 21 | 2.3 | 18 | 3.1 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 68 | 2.0 | 68 | 2.1 | 69 | 3.8 |
| D07 | No | Which two figures are congruent? | 91 | 0.9 | 91 | 1.2 | 92 | 1.1 |
| F09 | No | Which of the following must be true of a triangle? | 68 | 1.5 | 70 | 2.4 | 65 | 2.0 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 45 | 1.5 | 44 | 2.3 | 46 | 2.6 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 59 | 2.6 | 61 | 3.7 | 57 | 3.8 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 81 | 2.5 | 81 | 2.8 | 80 | 2.9 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 93 | 1.3 | 94 | 1.6 | 92 | 2.1 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 72 | 2.5 | 70 | 4.4 | 73 | 3.1 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 78 | 2.3 | 78 | 3.0 | 79 | 2.9 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 78 | 3.7 | 77 | 3.8 | 78 | 4.7 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 93 | 2.0 | 95 | 1.8 | 93 | 2.1 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 59 | 5.3 | 64 | 3.1 | 58 | 5.8 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 51 | 4.0 | 49 | 4.3 | 53 | 5.5 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 68 | 1.8 | 67 | 2.5 | 69 | 2.6 |

*COUNTRY ID*=Canada SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 80 | 1.4 | 83 | 1.3 | 78 | 1.4 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 53 | 1.7 | 53 | 2.7 | 52 | 2.6 |
| C02 | No | Find volume of a stack of 5 cubes. | 66 | 1.6 | 67 | 2.0 | 64 | 1.6 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 46 | 1.7 | 49 | 2.6 | 42 | 2.4 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 73 | 1.5 | 73 | 1.7 | 73 | 2.3 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 78 | 1.5 | 82 | 1.8 | 75 | 2.5 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 51 | 1.5 | 51 | 2.3 | 50 | 2.6 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 55 | 1.4 | 52 | 2.0 | 57 | 2.2 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 54 | 1.6 | 54 | 2.3 | 53 | 2.4 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 68 | 2.2 | 72 | 3.1 | 64 | 2.5 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 65 | 2.7 | 62 | 4.1 | 66 | 3.6 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 72 | 3.0 | 70 | 4.5 | 74 | 4.0 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 23 | 2.4 | 23 | 3.0 | 22 | 3.2 |
| L0 6 |  | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 50 | 2.3 | 47 | 3.6 | 53 | 2.8 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 19 | 2.6 | 24 | 3.2 | 16 | 3.1 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 31 | 2.7 | 36 | 3.9 | 26 | 3.0 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 54 | 1.9 | 51 | 2.6 | 56 | 2.3 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 45 | 2.4 | 48 | 3.2 | 42 | 2.2 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 49 | 3.1 | 46 | 2.8 | 53 | 3.5 |
| V05 | Yes | How many millimeters are in a meter? | 41 | 3.6 | 48 | 2.3 | 36 | 4.1 |

*COUNTRY ID*=Canada SCALE=Patterns, Relations and Functions

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 51 | 1.7 | 52 | 2.2 | 49 | 1.9 |
| H08 | No | Given number pattern, what are the next three numbers? | 83 | 1.1 | 83 | 1.6 | 83 | 2.2 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 63 | 2.7 | 62 | 3.8 | 64 | 3.3 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 38 | 2.6 | 37 | 4.2 | 38 | 3.8 |
| к03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 50 | 3.0 | 50 | 3.5 | 50 | 3.9 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 60 | 2.1 | 60 | 3.8 | 61 | 3.8 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 78 | 3.3 | 82 | 3.3 | 72 | 6.5 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 68 | 2.9 | 66 | 3.6 | 70 | 3.8 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 69 | 2.5 | 75 | 2.7 | 62 | 3.9 |
| U04 | Yes | Explain operation used to find next number in a pattern. | 57 | 2.5 | 58 | 3.8 | 54 | 4.0 |

fercent correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 64 | 1.2 | 62 | 1.3 | 67 | 1.9 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 89 | 0.7 | 92 | 0.7 | 87 | 1.2 |
| B08 | No | Which addition expression has the same value as 342? | 83 | 2.3 | 85 | 1.6 | 80 | 4.0 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 80 | 1.4 | 80 | 2.1 | 79 | 1.7 |
| E02 | No | Which digit is in the hundreds place in 2345? | 80 | 1.2 | 80 | 2.0 | 81 | 1.5 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 67 | 1.4 | 69 | 2.2 | 64 | 2.1 |
| G03 | No | Which of the following is a name for 9740? | 89 | 0.9 | 90 | 1.1 | 88 | 2.0 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 71 | 1.3 | 73 | 2.3 | 70 | 2.2 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 64 | 1.5 | 65 | 2.0 | 63 | 2.5 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 53 | 2.9 | 58 | 4.4 | 48 | 4.3 |
| 104 | Yes | What is 3 times 23? | 85 | 2.2 | 88 | 2.6 | 81 | 3.1 |
| 109 | Yes | Subtract: 6000-2369. | 61 | 3.1 | 62 | 3.5 | 60 | 4.9 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 41 | 3.0 | 46 | 4.1 | 38 | 3.0 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 84 | 1.7 | 83 | 2.7 | 82 | 2.5 |
| K02 | Yes | Add: 6971 + 5291 | 87 | 1.4 | 85 | 1.8 | 89 | 1.9 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 42 | 2.9 | 48 | 3.5 | 36 | 4.6 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 60 | 2.8 | 65 | 3.4 | 56 | 5.7 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 71 | 2.3 | 80 | 2.7 | 62 | 3.6 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 88 | 2.0 | 90 | 2.5 | 85 | 3.7 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 65 | 2.2 | 65 | 3.4 | 66 | 2.8 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 49 | 2.8 | 47 | 3.2 | 51 | 3.0 |
| U05 | Yes | Write addition fact as a multiplication fact. | 76 | 1.7 | 73 | 2.5 | 77 | 2.1 |
| v02 | Yes | Write the number that is 1000 more than $56,821$. | 47 | 2.0 | 50 | 2.8 | 42 | 2.8 |
| V03 | Yes | What is 5 less than 203? | 60 | 1.8 | 63 | 2.3 | 60 | 4.1 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 38 | 2.6 | 36 | 2.8 | 41 | 2.9 |
| v04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 55 | 2.3 | 55 | 3.0 | 54 | 3.3 |

*COUNTRY ID*=Cyprus SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 48 | 1.7 | 45 | 2.1 | 52 | 2.1 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 86 | 1.3 | 87 | 1.6 | 85 | 1.8 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 82 | 1.3 | 78 | 2.0 | 87 | 1.4 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 68 | 1.5 | 64 | 2.1 | 71 | 2.1 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 63 | 2.7 | 65 | 3.6 | 61 | 3.8 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 25 | 2.7 | 30 | 3.3 | 20 | 3.7 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 50 | 2.9 | 48 | 3.9 | 52 | 4.5 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 32 | 2.8 | 32 | 3.7 | 31 | 3.6 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 68 | 2.5 | 72 | 3.2 | 63 | 3.7 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 50 | 2.3 | 55 | 3.6 | 43 | 3.8 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 30 | 2.3 | 29 | 2.4 | 33 | 3.4 |
| T01A | Yes | Read simple information from bar graph. | 79 | 1.3 | 80 | 1.9 | 78 | 2.2 |
| т01B | Yes | Read information from bar graph and add to find a total. | 18 | 1.7 | 16 | 1.9 | 21 | 2.5 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Cyprus SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ItEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 55 | 1.5 | 60 | 1.7 | 50 | 1.6 |
| A02 | No | Determine total number from ratio and one number. | 57 | 1.3 | 57 | 1.8 | 58 | 1.3 |
| B09 | No | What is the sum of 2.5 and 3.8? | 50 | 1.9 | 52 | 2.2 | 49 | 2.6 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 63 | 1.6 | 59 | 2.1 | 68 | 2.3 |
| D08 | No | Subtract: 4.03-1.15. | 78 | 1.7 | 77 | 2.1 | 79 | 1.9 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 58 | 1.6 | 56 | 2.3 | 59 | 2.3 |
| E04 | No | Which of the following numbers means 7/10? | 56 | 2.2 | 54 | 2.8 | 60 | 2.6 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 52 | 1.6 | 53 | 2.0 | 52 | 2.1 |
| G01 | No | Given map and legend, how far apart are two cities? | 30 | 1.5 | 34 | 2.5 | 25 | 2.3 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 61 | 3.3 | 59 | 3.4 | 63 | 4.6 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 51 | 3.0 | 57 | 4.4 | 45 | 3.8 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 56 | 2.9 | 55 | 3.8 | 57 | 4.6 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 75 | 2.7 | 71 | 3.8 | 78 | 3.0 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 23 | 2.6 | 24 | 3.5 | 23 | 3.7 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 41 | 2.5 | 45 | 3.2 | 38 | 3.5 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 16 | 1.4 | 17 | 2.0 | 16 | 2.1 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 37 | 2.0 | 41 | 2.6 | 33 | 2.7 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 21 | 1.6 | 24 | 2.4 | 19 | 2.1 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 12 | 1.2 | 14 | 1.8 | 10 | 1.7 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 69 | 1.9 | 71 | 2.5 | 68 | 2.6 |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 61 | 1.8 | 63 | 2.9 | 59 | 3.0 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 29 | 2.0 | 32 | 2.8 | 25 | 2.9 |
| U03C | Yes | Solve two proportions and compare results. | 70 | 1.8 | 74 | 2.3 | 67 | 2.6 |
| v01 | Yes | Is $1 / 3$ less than $1 / 4$ ? Shade appropriate parts of a circle to demonstrate. | 20 | 1.5 | 21 | 2.1 | 19 | 1.8 |


|  |  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL |  | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which | of these solids has both a flat surface and a curved surface? | 30 | 1.8 | 27 | 1.9 | 33 | 2.5 |
| D07 | No | Which | two figures are congruent? | 80 | 1.3 | 79 | 1.9 | 81 | 1.7 |
| F09 | No | Which | of the following must be true of a triangle? | 60 | 1.8 | 65 | 2.2 | 56 | 2. |
| H05 | No | Shown | diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 34 | 1.8 | 31 | 2.7 | 38 | 2.4 |
| 101 | Yes | Shown | map with city blocks, and given directions to school, locate school on map. | 41 | 3.1 | 47 | 3.8 | 35 | 3.9 |
| I06 | Yes | Which | of the following figures is made with straight sides only? | 46 | 3.1 | 48 | 3.7 | 44 | 4.6 |
| J01 | Yes | Shown | hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 88 | 2.1 | 87 | 2.6 | 92 | 2.3 |
| J02 | Yes | Shown | several drawings with a line through each, which does not show a line of symmetry? | 65 | 2.8 | 62 | 4.2 | 70 | 3.5 |
| K01 | Yes | Shown | figure with overlapping shapes, which number is in square and circle, but not in triangle? | 60 | 2.8 | 59 | 3.6 | 60 | 4.6 |
| K08 | Yes | Which | of the following rectangles is not divided into 4 equal parts? | 66 | 2.5 | 66 | 3.7 | 67 | 3.5 |
| L03 | Yes | Shown | "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 83 | 1.9 | 82 | 3.3 | 84 | 2.7 |
| L05 | Yes | Shown | diagram of cube with one edge labeled, how many edges does the cube have? | 25 | 2.4 | 26 | 3.4 | 25 | 3.4 |
| M04 | Yes | Given | explanation of how grid works, give the coordinates of a particular point. | 22 | 2.5 | 21 | 2.8 | 23 | 3.3 |
| T05 | Yes | Shown | picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 35 | 2.2 | 32 | 2.8 | 37 | 2.7 |

*COUNTRY ID*=Cyprus SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ItEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 81 | 1.1 | 82 | 1.4 | 80 | 1.6 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 38 | 1.7 | 42 | 2.1 | 34 | 2.0 |
| C02 | No | Find volume of a stack of 5 cubes. | 62 | 1.7 | 61 | 2.6 | 64 | 2.2 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 48 | 1.6 | 53 | 2.2 | 42 | 2.2 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 58 | 1.8 | 60 | 2.6 | 56 | 2.3 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 41 | 2.0 | 43 | 2.7 | 40 | 2.6 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 76 | 1.5 | 75 | 2.2 | 77 | 2.0 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 66 | 1.5 | 64 | 2.3 | 67 | 2.0 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 62 | 1.8 | 61 | 2.4 | 64 | 2.6 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 21 | 2.2 | 25 | 3.3 | 17 | 3.0 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 38 | 2.8 | 45 | 3.9 | 30 | 3.6 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 86 | 1.9 | 88 | 2.6 | 85 | 2.9 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 28 | 2.5 | 31 | 3.5 | 25 | 3.8 |
| L0 6 |  | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 44 | 2.7 | 45 | 3.6 | 44 | 4.3 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 21 | 2.6 | 25 | 3.4 | 18 | 2.8 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 20 | 2.9 | 20 | 3.6 | 20 | 4.0 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 37 | 1.8 | 37 | 2.6 | 38 | 2.5 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 41 | 2.3 | 50 | 3.2 | 30 | 2.5 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 44 | 2.4 | 43 | 3.4 | 45 | 3.0 |
| V05 | Yes | How many millimeters are in a meter? | 41 | 2.4 | 37 | 3.7 | 44 | 2.8 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 58 | 1.8 | 58 | 2.3 | 59 | 2.3 |
| H08 | No | Given number pattern, what are the next three numbers? | 63 | 1.7 | 65 | 2.2 | 62 | 2.1 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 57 | 2.7 | 57 | 3.4 | 58 | 4.2 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 29 | 2.3 | 33 | 3.4 | 24 | 3.4 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 48 | 3.6 | 47 | 4.7 | 48 | 4.4 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 56 | 3.1 | 58 | 3.8 | 53 | 4.7 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 52 | 2.6 | 49 | 3.4 | 56 | 3.7 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 56 | 2.9 | 62 | 4.3 | 52 | 4.1 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 67 | 2.3 | 65 | 3.6 | 70 | 3.5 |
| U04 | Yes | Explain operation used to find next number in a pattern. | 67 | 2.1 | 72 | 2.7 | 61 | 2.8 |

ercent correct on the Mathematics Items - Fourth Grade

Fourth Grade

| ITEM | REL |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 70 | 1.1 | 68 | 1.3 | 73 | 1.6 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 78 | 1.2 | 80 | 1.3 | 77 | 1.6 |
| B08 | No | Which addition expression has the same value as 342? | 86 | 1.0 | 87 | 1.3 | 84 | 1.4 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 86 | 1.2 | 86 | 1.8 | 85 | 1.5 |
| E02 | No | Which digit is in the hundreds place in 2345? | 67 | 1.8 | 68 | 2.4 | 66 | 2.3 |
| F07 | No | What number equals 3 ones + 5 tens +4 hundreds + 60 thousands? | 63 | 1.9 | 67 | 2.6 | 60 | 2.1 |
| G03 | No | Which of the following is a name for 9740? | 89 | 1.1 | 88 | 1.5 | 90 | 1.1 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 70 | 1.3 | 73 | 2.2 | 68 | 2.0 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 53 | 1.7 | 55 | 2.4 | 51 | 2.3 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 52 | 2.7 | 55 | 3.6 | 49 | 3.6 |
| 104 | Yes | What is 3 times 23? | 82 | 2.3 | 85 | 2.8 | 80 | 3.0 |
| 109 | Yes | Subtract: 6000-2369. | 79 | 2.4 | 83 | 3.2 | 75 | 3.6 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 38 | 3.1 | 42 | 4.2 | 33 | 4.0 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 72 | 2.6 | 72 | 3.7 | 71 | 3.9 |
| K02 | Yes | Add: 6971 + 5291 | 93 | 1.2 | 92 | 1.7 | 94 | 1.6 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 53 | 2.7 | 55 | 4.4 | 51 | 3.3 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x _ is the same as what? | 67 | 2.1 | 69 | 3.1 | 65 | 3.5 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 73 | 2.7 | 78 | 3.1 | 68 | 4.7 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 82 | 1.8 | 81 | 2.5 | 83 | 2.3 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 61 | 1.9 | 63 | 2.5 | 59 | 3.2 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 33 | 2.3 | 32 | 3.0 | 34 | 2.8 |
| U05 | Yes | Write addition fact as a multiplication fact. | 83 | 1.5 | 82 | 2.2 | 84 | 1.9 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 45 | 2.5 | 48 | 3.1 | 42 | 3.3 |
| V03 | Yes | What is 5 less than 203? | 57 | 2.3 | 61 | 3.0 | 52 | 2.7 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 27 | 2.0 | 22 | 2.7 | 33 | 2.3 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 34 | 2.0 | 34 | 2.9 | 33 | 2.6 |


| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 67 | 1.6 | 65 | 1.9 | 70 | 2.1 |
| C 01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 88 | 1.3 | 89 | 1.6 | 88 | 1.6 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 85 | 1.4 | 85 | 1.9 | 85 | 1.7 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 77 | 1.3 | 76 | 1.6 | 77 | 1.9 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 78 | 2.2 | 75 | 3.4 | 79 | 2.7 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 70 | 2.5 | 69 | 3.6 | 71 | 3.4 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 51 | 3.4 | 56 | 4.5 | 46 | 4.5 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 56 | 2.5 | 61 | 3.4 | 52 | 3.7 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 82 | 1.9 | 86 | 3.0 | 78 | 2.6 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 71 | 2.4 | 70 | 3.6 | 72 | 3.2 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 33 | 2.1 | 31 | 3.0 | 34 | 2.4 |
| T01A | Yes | Read simple information from bar graph. | 85 | 1.4 | 86 | 1.9 | 84 | 1.9 |
| т01B | Yes | Read information from bar graph and add to find a total. | 51 | 2.0 | 49 | 2.9 | 53 | 2.5 |

*COUNTRY ID*=Czech Republic SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 93 | 0.5 | 94 | 0.6 | 93 | 0.7 |
| A02 | No | Determine total number from ratio and one number. | 77 | 0.9 | 79 | 1.1 | 74 | 1.3 |
| B09 | No | What is the sum of 2.5 and 3.8? | 59 | 1.5 | 58 | 2.1 | 59 | 1.8 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 47 | 1.7 | 49 | 2.4 | 46 | 2.0 |
| D08 | No | Subtract: 4.03-1.15. | 69 | 1.5 | 64 | 2.0 | 73 | 2.0 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 48 | 2.1 | 46 | 2.6 | 51 | 2.7 |
| E04 | No | Which of the following numbers means 7/10? | 13 | 1.5 | 13 | 1.6 | 14 | 2.0 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 76 | 1.6 | 76 | 2.1 | 77 | 1.8 |
| G01 | No | Given map and legend, how far apart are two cities? | 64 | 1.5 | 67 | 2.1 | 61 | 2.2 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 22 | 2.1 | 21 | 3.1 | 24 | 3.1 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 64 | 2.9 | 68 | 3.4 | 60 | 4.1 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 47 | 2.4 | 47 | 3.6 | 46 | 3.9 |
| J07 |  | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 43 | 2.9 | 42 | 4.0 | 44 |  |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 60 | 2.6 | 60 | 4.1 | 59 | 3.3 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 31 | 2.1 | 33 | 3.4 | 29 | 2.9 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 38 | 1.9 | 40 | 2.8 | 36 | 2.4 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 57 | 2.2 | 58 | 3.1 | 55 | 2.6 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 25 | 1.5 | 22 | 2.0 | 27 | 1.8 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 18 | 1.7 | 16 | 2.1 | 19 | 2.1 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 60 | 1.9 | 57 | 2.8 | 62 | 2.4 |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 75 | 1.9 | 80 | 2.6 | 70 | 2.5 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 62 | 2.1 | 65 | 2.7 | 58 | 2.9 |
| U03C | Yes | Solve two proportions and compare results. | 84 | 1.5 | 86 | 2.0 | 82 | 2.1 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 31 | 2.3 | 33 | 3.1 | 29 | 2.5 |

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 35 | 1.3 | 35 | 2.0 | 35 | 1.7 |
| D07 | No | Which two figures are congruent? | 93 | 0.9 | 93 | 1.2 | 94 | 1.0 |
| F09 | No | Which of the following must be true of a triangle? | 71 | 1.7 | 71 | 2.3 | 72 | 2.2 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 57 | 1.3 | 61 | 1.9 | 54 | 2.0 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 68 | 2.5 | 69 | 3.4 | 66 | 3.5 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 83 | 1.7 | 78 | 3.1 | 88 | 2.1 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 97 | 1.0 | 97 | 1.8 | 98 | 0.9 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 74 | 2.1 | 71 | 3.5 | 76 | 2.7 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 87 | 2.1 | 85 | 3.0 | 88 | 2.7 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 82 | 2.3 | 84 | 3.2 | 79 | 2.9 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 96 | 1.2 | 95 | 1.7 | 97 | 1.3 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 47 | 3.0 | 50 | 3.9 | 45 | 4.0 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 37 | 2.8 | 37 | 3.8 | 37 | 3.4 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 63 | 1.7 | 64 | 2.7 | 63 | 2.3 |

ercent correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Czech Republic SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 95 | 0.4 | 96 | 0.6 | 95 | 0.5 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 59 | 1.7 | 59 | 2.1 | 59 | 2.0 |
| C02 | No | Find volume of a stack of 5 cubes. | 86 | 1.0 | 89 | 1.3 | 83 | 1.3 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 71 | 1.6 | 77 | 1.8 | 66 | 2.0 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 75 | 1.4 | 74 | 1.9 | 76 | 1.9 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 80 | 1.4 | 82 | 1.7 | 78 | 1.9 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 70 | 1.7 | 74 | 2.2 | 66 | 2.4 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 93 | 0.7 | 93 | 1.2 | 94 | 1.1 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 63 | 1.6 | 65 | 2.1 | 62 | 2.1 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 81 | 2.3 | 83 | 3.2 | 81 | 3.1 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 61 | 2.5 | 62 | 3.8 | 60 | 3.3 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 91 | 1.8 | 92 | 1.8 | 90 | 2.5 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 16 | 1.8 | 19 | 2.3 | 14 | 2.6 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 74 | 2.5 | 72 | 3.7 | 76 | 3.4 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 46 | 3.1 | 51 | 3.8 | 41 | 3.9 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 32 | 2.5 | 27 | 3.4 | 37 | 3.3 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 56 | 2.2 | 58 | 3.1 | 55 | 2.8 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 63 | 1.8 | 67 | 2.6 | 61 | 2.5 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 60 | 2.3 | 60 | 2.8 | 60 | 2.7 |
| V05 | Yes | How many millimeters are in a meter? | 72 | 1.9 | 75 | 2.8 | 69 | 2.2 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 58 | 1.7 | 58 | 2.3 | 58 | 2.0 |
| H08 | No | Given number pattern, what are the next three numbers? | 68 | 1.7 | 67 | 2.3 | 68 | 2.0 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 78 | 2.2 | 81 | 3.0 | 76 | 3.3 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 57 | 3.0 | 56 | 3.7 | 58 | 3.6 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 56 | 2.6 | 57 | 3.6 | 55 | 3.7 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 72 | 2.5 | 72 | 3.5 | 72 | 3.2 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 80 | 2.3 | 77 | 3.2 | 83 | 3.0 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 62 | 2.4 | 72 | 3.4 | 53 | 3.7 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 72 | 2.6 | 68 | 3.7 | 76 | 3.5 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 65 | 2.2 | 68 | 2.8 | 63 | 3.0 |

ercent correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 82 | 0.9 | 79 | 1.2 | 84 | 1.0 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 87 | 0.8 | 88 | 1.1 | 86 | 1.0 |
| B08 | No | Which addition expression has the same value as 342? | 94 | 0.6 | 95 | 0.9 | 94 | 1.0 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 92 | 0.9 | 92 | 1.2 | 93 | 1.0 |
| E02 | No | Which digit is in the hundreds place in 2345? | 87 | 1.0 | 88 | 1.4 | 87 | 1.4 |
| F07 | No | What number equals 3 ones + 5 tens +4 hundreds +60 thousands? | 81 | 1.3 | 82 | 1.8 | 80 | 1.6 |
| G03 | No | Which of the following is a name for 9740? | 96 | 0.6 | 96 | 0.9 | 96 | 0.8 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 84 | 1.1 | 84 | 1.3 | 84 | 1.5 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 79 | 1.3 | 81 | 1.6 | 77 | 1.9 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 74 | 2.3 | 75 | 3.1 | 73 | 3.3 |
| 104 | Yes | What is 3 times 23? | 97 | 0.9 | 97 | 1.1 | 97 | 1.3 |
| 109 | Yes | Subtract: 6000-2369. | 83 | 1.8 | 79 | 3.0 | 87 | 2.4 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 50 | 2.6 | 47 | 3.9 | 53 | 3.4 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 75 | 1.9 | 79 | 2.8 | 72 | 2.7 |
| K02 | Yes | Add: 6971 + 5291 | 93 | 1.4 | 91 | 2.6 | 94 | 1.8 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 67 | 2.7 | 71 | 3.6 | 64 | 4.0 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 41 | 2.5 | 38 | 3.6 | 42 | 3.3 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 82 | 2.0 | 81 | 2.9 | 83 | 2.6 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 93 | 1.3 | 92 | 2.0 | 94 | 1.7 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 77 | 1.7 | 80 | 2.1 | 75 | 2.3 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 40 | 2.0 | 40 | 2.9 | 40 | 2.9 |
| U05 | Yes | Write addition fact as a multiplication fact. | 83 | 1.6 | 80 | 2.3 | 85 | 1.9 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 70 | 1.7 | 76 | 2.1 | 65 | 2.2 |
| V03 | Yes | What is 5 less than 203? | 77 | 1.6 | 80 | 2.1 | 74 | 2.0 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 22 | 2.0 | 20 | 2.3 | 23 | 2.3 |
| v04B | Yes | Arrange 4 digits as addition of 22 -digit numbers. Find arrangement with sum greater than either of above | 43 | 2.3 | 42 | 3.1 |  |  |

*COUNTRY ID*=Greece SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 48 | 1.9 | 45 | 2.5 | 50 | 2.3 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 74 | 2.0 | 74 | 2.5 | 74 | 2.5 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 71 | 2.0 | 70 | 3.0 | 73 | 2.2 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 54 | 2.0 | 57 | 2.8 | 52 | 2.8 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 65 | 3.4 | 63 | 4.3 | 66 | 4.6 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 39 | 3.5 | 32 | 4.9 | 46 | 4.2 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 25 | 2.6 | 28 | 3.8 | 22 | 3.0 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 30 | 3.0 | 35 | 5.1 | 26 | 3.4 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 84 | 2.0 | 84 | 3.0 | 84 | 3.0 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 51 | 3.3 | 47 | 4.7 | 55 | 4.1 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 28 | 2.0 | 27 | 2.6 | 29 | 3.0 |
| T01A | Yes | Read simple information from bar graph. | 62 | 2.7 | 55 | 4.7 | 68 | 2.7 |
| т01B | Yes | Read information from bar graph and add to find a total. | 33 | 2.2 | 30 | 3.1 | 37 | 3.1 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Greece SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 90 | 0.9 | 89 | 1.4 | 91 | 1.0 |
| A02 | No | Determine total number from ratio and one number. | 59 | 1.3 | 57 | 2.1 | 61 | 1.5 |
| B09 | No | What is the sum of 2.5 and 3.8? | 47 | 2.1 | 47 | 2.7 | 48 | 2.4 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 50 | 2.2 | 50 | 2.7 | 51 | 3.2 |
| D08 | No | Subtract: 4.03-1.15. | 74 | 2.1 | 70 | 3.0 | 77 | 2.5 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 43 | 2.1 | 43 | 3.4 | 43 | 2.6 |
| E04 | No | Which of the following numbers means 7/10? | 27 | 3.3 | 29 | 5.8 | 26 | 3.2 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 48 | 2.2 | 45 | 3.0 | 51 | 2.8 |
| G01 | No | Given map and legend, how far apart are two cities? | 39 | 2.1 | 40 | 3.1 | 38 | 2.4 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 29 | 3.2 | 28 | 3.9 | 31 | 4.1 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 50 | 3.2 | 54 | 4.1 | 44 | 4.6 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 50 | 3.1 | 48 | 3.9 | 51 | 4.2 |
| J07 |  | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 58 | 3.9 | 59 | 4.9 | 57 | 4.6 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 23 | 2.9 | 22 | 4.2 | 25 | 4.3 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 30 | 2.9 | 29 | 4.0 | 31 | 3.6 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 21 | 2.0 | 21 | 2.5 | 21 | 2.9 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 31 | 2.2 | 32 | 3.0 | 30 | 3.3 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 11 | 1.4 | 9 | 2.1 | 13 | 2.1 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 8 | 1.2 | 6 | 1.3 | 9 | 1.9 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 56 | 2.8 | 58 | 4.0 | 54 | 3.3 |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 53 | 2.7 | 56 | 4.5 | 51 | 3.1 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 29 | 2.9 | 35 | 4.8 | 23 | 2.8 |
| U03C | Yes | Solve two proportions and compare results. | 63 | 2.3 | 66 | 3.9 | 59 | 2.7 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 14 | 1.7 | 13 | 2.5 | 15 | 2.1 |


| ITEM | REL | LABEL |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which | of these solids has both a flat surface and a curved surface? | 45 | 2.1 | 44 | 2.5 | 46 | 2.5 |
| D07 | No | Which | two figures are congruent? | 86 | 1.4 | 85 | 1.9 | 87 | 1.5 |
| F09 | No | Which | of the following must be true of a triangle? | 63 | 2.1 | 60 | 3.3 | 65 | 2.3 |
| H05 | No | Shown | diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 60 | 2.3 | 58 | 3.1 | 62 | 2.7 |
| 101 | Yes | Shown | map with city blocks, and given directions to school, locate school on map. | 36 | 3.3 | 41 | 4.2 | 30 | 3.9 |
| 106 | Yes | Which | of the following figures is made with straight sides only? | 41 | 3.1 | 48 | 3.9 | 33 | 4.4 |
| J01 | Yes | Shown | hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 90 | 2.0 | 87 | 3.2 | 93 | 1.9 |
| J02 | Yes | Shown | several drawings with a line through each, which does not show a line of symmetry? | 41 | 3.2 | 45 | 4.4 | 38 | 4.3 |
| K01 | Yes | Shown | figure with overlapping shapes, which number is in square and circle, but not in triangle? | 54 | 4.0 | 45 | 6.4 | 63 | 3.6 |
| K08 | Yes | Which | of the following rectangles is not divided into 4 equal parts? | 52 | 3.7 | 49 | 7.2 | 55 | 3.9 |
| L03 | Yes | Shown | "game board" graph, which object is located at (2,D)? | 86 | 2.0 | 89 | 2.9 | 82 | 3.1 |
| L05 | Yes | Shown | diagram of cube with one edge labeled, how many edges does the cube have? | 33 | 3.0 | 33 | 4.6 | 34 | 3.8 |
| M04 | Yes | Given | explanation of how grid works, give the coordinates of a particular point. | 30 | 2.7 | 26 | 4.1 | 35 | 3.5 |
| T05 | Yes | Shown | picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 28 | 2.7 | 25 | 3.7 | 30 | 2.9 |

*COUNTRY ID*=Greece SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 69 | 1.5 | 69 | 2.0 | 69 | 1.8 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 30 | 1.6 | 30 | 2.3 | 30 | 2.2 |
| C02 | No | Find volume of a stack of 5 cubes. | 67 | 1.6 | 71 | 2.3 | 63 | 2.2 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 54 | 2.2 | 53 | 3.3 | 55 | 2.4 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 59 | 2.4 | 60 | 3.9 | 57 | 2.7 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 40 | 2.3 | 39 | 3.9 | 40 | 2.6 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 66 | 2.1 | 69 | 2.7 | 63 | 2.7 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 81 | 1.6 | 82 | 2.1 | 80 | 1.9 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 48 | 2.4 | 48 | 3.5 | 47 | 2.5 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 71 | 2.9 | 73 | 3.8 | 69 | 4.7 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 32 | 3.0 | 29 | 4.0 | 35 | 4.2 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 63 | 4.8 | 56 | 7.8 | 70 | 3.9 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 16 | 2.6 | 17 | 3.6 | 15 | 2.9 |
| L0 6 |  | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 55 | 2.9 | 60 | 3.9 | 51 | 3.6 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 25 | 2.6 | 26 | 3.4 | 25 | 3.7 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 27 | 3.6 | 26 | 4.7 | 27 | 4.1 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 36 | 2.1 | 39 | 2.7 | 33 | 3.2 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 29 | 3.3 | 33 | 5.3 | 26 | 3.3 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 41 | 2.8 | 40 | 4.8 | 41 | 2.9 |
| V05 | Yes | How many millimeters are in a meter? | 53 | 2.1 | 54 | 3.6 | 51 | 2.6 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 45 | 2.0 | 44 | 3.1 | 46 | 2.6 |
| H08 | No | Given number pattern, what are the next three numbers? | 44 | 2.2 | 42 | 2.9 | 46 | 2.7 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 50 | 3.1 | 51 | 3.8 | 48 | 4.6 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 24 | 2.9 | 22 | 4.3 | 26 | 3.7 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 41 | 3.4 | 36 | 5.3 | 47 | 4.3 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 50 | 4.2 | 51 | 7.6 | 50 | 4.2 |
| L0 4 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 51 | 3.2 | 51 | 4.9 | 51 | 3.5 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 54 | 3.0 | 54 | 4.5 | 55 | 3.7 |
| M09 | Yes | 4 x _ <17: Which number could go in the blank to make the sentence true? | 66 | 2.7 | 62 | 4.5 | 70 | 3.1 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 42 | 2.6 | 43 | 4.3 | 40 |  |


| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 73 | 1.2 | 73 | 1.9 | 73 | 1.4 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 72 | 1.6 | 73 | 1.9 | 70 | 1.9 |
| B08 | No | Which addition expression has the same value as 342? | 80 | 1.6 | 79 | 2.5 | 81 | 1.5 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 81 | 1.7 | 82 | 2.1 | 81 | 2.5 |
| E02 | No | Which digit is in the hundreds place in 2345? | 74 | 2.1 | 75 | 3.1 | 74 | 2.6 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 55 | 1.8 | 56 | 2.7 | 54 | 2.4 |
| G03 | No | Which of the following is a name for 9740? | 92 | 1.0 | 92 | 1.1 | 93 | 1.6 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 66 | 1.7 | 67 | 2.7 | 66 | 2.2 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 46 | 1.9 | 45 | 2.8 | 47 | 2.6 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 52 | 3.4 | 55 | 4.3 | 49 | 4.8 |
| 104 | Yes | What is 3 times 23? | 86 | 2.1 | 85 | 3.0 | 87 | 2.7 |
| 109 | Yes | Subtract: 6000-2369. | 82 | 2.2 | 80 | 3.4 | 85 | 3.1 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 29 | 3.1 | 28 | 4.1 | 29 | 4.3 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 59 | 2.8 | 50 | 4.8 | 67 | 4.0 |
| K02 | Yes | Add: 6971 + 5291 | 81 | 5.1 | 75 | 9.5 | 87 | 3.2 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 42 | 2.9 | 42 | 4.8 | 42 | 3.3 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 54 | 3.6 | 49 | 5.1 | 59 | 4.1 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 60 | 2.7 | 62 | 5.0 | 57 | 3.6 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 87 | 2.6 | 85 | 4.9 | 89 | 2.4 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 52 | 2.3 | 53 | 3.0 | 50 | 3.3 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 31 | 2.4 | 28 | 3.3 | 35 | 2.8 |
| U05 | Yes | Write addition fact as a multiplication fact. | 79 | 1.9 | 79 | 2.7 | 80 | 2.4 |
| v02 | Yes | Write the number that is 1000 more than 56,821. | 41 | 2.1 | 47 | 3.5 | 35 | 2.5 |
| V03 | Yes | What is 5 less than 203? | 48 | 2.3 | 52 | 3.7 | 44 | 2.8 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 27 | 2.1 | 22 | 2.3 | 32 | 2.9 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 46 | 2.2 | 41 | 3.4 | 50 | 2.8 |

*COUNTRY ID*=Hong Kong SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 78 | 1.3 | 74 | 1.6 | 82 | 1.4 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 96 | 0.6 | 95 | 1.0 | 97 | 0.7 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 94 | 0.8 | 93 | 1.1 | 95 | 1.0 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 78 | 1.5 | 77 | 2.2 | 80 | 1.9 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 86 | 1.7 | 85 | 2.7 | 87 | 2.5 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 62 | 2.7 | 63 | 2.7 | 62 | 4.3 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 83 | 2.1 | 83 | 2.7 | 82 | 2.6 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 69 | 3.1 | 68 | 3.4 | 71 | 3.9 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 84 | 1.9 | 87 | 2.5 | 81 | 2.8 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 57 | 3.2 | 58 | 3.6 | 57 | 4.6 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 75 | 1.9 | 73 | 2.6 | 78 | 2.5 |
| T01A | Yes | Read simple information from bar graph. | 74 | 1.7 | 74 | 2.2 | 75 | 2.0 |
| т01B | Yes | Read information from bar graph and add to find a total. | 38 | 2.1 | 35 | 2.9 | 43 | 2.8 |

ercent correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 91 | 0.6 | 91 | 0.8 | 92 | 0.7 |
| A02 | No | Determine total number from ratio and one number. | 43 | 1.1 | 42 | 1.3 | 45 | 1.5 |
| B09 | No | What is the sum of 2.5 and 3.8? | 88 | 1.1 | 87 | 1.5 | 90 | 1.3 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 84 | 1.0 | 84 | 1.4 | 85 | 1.7 |
| D08 | No | Subtract: 4.03-1.15. | 89 | 1.2 | 89 | 1.6 | 90 | 1.7 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 62 | 2.0 | 64 | 2.2 | 60 | 2.4 |
| E04 | No | Which of the following numbers means 7/10? | 85 | 1.5 | 85 | 2.0 | 86 | 1.7 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 77 | 1.4 | 77 | 1.6 | 77 | 2.1 |
| G01 | No | Given map and legend, how far apart are two cities? | 51 | 1.8 | 53 | 2.1 | 49 | 2.4 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 78 | 2.5 | 82 | 3.0 | 73 | 3.7 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 73 | 2.7 | 77 | 3.1 | 70 | 3.8 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 67 | 3.1 | 65 | 4.3 | 71 | 3.6 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 96 | 0.9 | 94 | 1.5 | 97 | 1.2 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 47 | 2.7 | 48 | 3.6 | 45 | 4.0 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 73 | 1.8 | 77 | 3.0 | 68 | 3.5 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 32 | 2.1 | 28 | 2.6 | 38 | 3.1 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 55 | 2.3 | 56 | 3.0 | 55 | 2.6 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 11 | 2.0 | 11 | 3.3 | 11 | 1.8 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 13 | 2.0 | 15 | 3.3 | 12 | 2.0 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 84 | 1.3 | 86 | 1.6 | 81 | 2.2 |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 79 | 1.8 | 80 | 2.0 | 79 | 2.4 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 70 | 2.0 | 72 | 2.6 | 68 | 2.4 |
| U03C | Yes | Solve two proportions and compare results. | 81 | 1.8 | 78 | 2.4 | 84 | 2.0 |
| V01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 47 | 2.0 | 50 | 3.4 | 44 | 2.9 |

Fourth Grade

*COUNTRY ID*=Hong Kong SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 90 | 0.6 | 92 | 0.6 | 89 | 1.1 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 72 | 1.3 | 72 | 1.7 | 73 | 2.0 |
| C02 | No | Find volume of a stack of 5 cubes. | 87 | 1.1 | 85 | 1.9 | 89 | 1.2 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 61 | 1.7 | 66 | 2.3 | 55 | 2.8 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 67 | 1.5 | 67 | 2.2 | 66 | 2.0 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 83 | 1.0 | 84 | 1.4 | 83 | 1.4 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 77 | 1.5 | 79 | 1.9 | 76 | 1.9 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 79 | 1.1 | 79 | 1.5 | 79 | 1.5 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 69 | 2.0 | 69 | 2.2 | 68 | 2.6 |
| J06 |  | Which of the following weight (mass) measures is the largest? | 89 | 1.6 | 89 | 2.0 | 89 | 2.2 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 72 | 2.4 | 71 | 3.2 | 73 | 3.3 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 91 | 1.8 | 90 | 2.1 | 93 | 2.3 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 29 | 1.9 | 30 | 2.9 | 27 | 2.9 |
| L0 6 |  | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 71 | 2.6 | 72 | 3.2 | 71 | 4.1 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 42 | 2.6 | 43 | 2.9 | 42 | 4.4 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 73 | 2.3 | 71 | 3.8 | 77 | 2.5 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 52 | 2.4 | 47 | 3.6 | 57 | 2.9 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 32 | 2.0 | 36 | 3.1 | 28 | 2.4 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 63 | 2.3 | 63 | 3.0 | 63 | 2.9 |
| v05 | Yes | How many millimeters are in a meter? | 72 | 1.8 | 73 | 2.5 | 72 | 2.6 |

*COUNTRY ID*=Hong Kong SCALE=Patterns, Relations and Functions

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 67 | 1.8 | 63 | 2.2 | 72 | 2.1 |
| H08 | No | Given number pattern, what are the next three numbers? | 81 | 1.5 | 79 | 2.0 | 83 | 1.7 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 75 | 2.3 | 72 | 4.0 | 80 | 2.8 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 71 | 2.6 | 67 | 4.4 | 77 | 3.2 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 76 | 2.3 | 76 | 2.6 | 77 | 2.9 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 82 | 1.9 | 82 | 2.8 | 83 | 2.4 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 74 | 2.0 | 75 | 3.6 | 73 | 2.5 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 83 | 1.9 | 81 | 2.6 | 85 | 2.1 |
| U04 | Yes | Explain operation used to find next number in a pattern. | 65 | 1.9 | 68 | 2.6 | 62 | 2.8 |

ercent correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 80 | 0.9 | 79 | 1.2 | 82 | 1.0 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 90 | 0.8 | 92 | 0.8 | 89 | 1.1 |
| B08 | No | Which addition expression has the same value as 342? | 95 | 0.6 | 95 | 0.8 | 97 | 0.6 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 88 | 1.1 | 87 | 1.3 | 89 | 1.4 |
| E02 | No | Which digit is in the hundreds place in 2345? | 68 | 1.3 | 66 | 1.8 | 71 | 1.7 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 54 | 2.0 | 58 | 2.4 | 50 | 3.1 |
| G03 | No | Which of the following is a name for 9740? | 96 | 0.5 | 96 | 0.7 | 97 | 0.7 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 79 | 1.5 | 79 | 2.0 | 80 | 1.9 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 81 | 1.5 | 81 | 1.8 | 81 | 2.1 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 74 | 2.5 | 76 | 2.9 | 73 | 4.0 |
| 104 | Yes | What is 3 times 23? | 95 | 1.1 | 96 | 1.3 | 94 | 1.8 |
| 109 | Yes | Subtract: 6000-2369. | 89 | 1.5 | 88 | 1.9 | 89 | 2.3 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 63 | 2.6 | 65 | 3.6 | 59 | 3.6 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 84 | 2.9 | 81 | 3.7 | 87 | 2.8 |
| K02 | Yes | Add: 6971 + 5291 | 90 | 1.7 | 88 | 3.1 | 93 | 1.8 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 70 | 2.7 | 72 | 3.5 | 68 | 3.2 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x _ is the same as what? | 75 | 2.1 | 76 | 3.4 | 74 | 2.8 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 82 | 2.2 | 82 | 3.2 | 83 | 2.1 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 95 | 1.1 | 93 | 1.8 | 97 | 1.2 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 82 | 1.4 | 83 | 1.9 | 81 | 2.0 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 66 | 2.1 | 68 | 2.4 | 64 | 3.2 |
| U05 | Yes | Write addition fact as a multiplication fact. | 95 | 0.9 | 95 | 1.0 | 95 | 1.2 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 60 | 2.3 | 62 | 2.7 | 58 | 3.1 |
| V03 | Yes | What is 5 less than 203? | 74 | 1.7 | 76 | 2.1 | 73 | 2.4 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 21 | 1.5 | 18 | 1.9 | 24 | 2.5 |
| v04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 82 | 1.9 | 83 | 2.1 | 80 | 2.9 |

*COUNTRY ID*=Hungary SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 73 | 1.4 | 68 | 2.1 | 77 | 1.7 |
| C 01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 84 | 1.4 | 86 | 1.6 | 83 | 1.9 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 80 | 1.6 | 79 | 2.3 | 82 | 2.1 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 81 | 1.2 | 77 | 1.7 | 84 | 1.7 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 73 | 3.1 | 71 | 4.6 | 75 | 3.7 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 37 | 2.8 | 37 | 4.0 | 38 | 3.7 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 44 | 2.4 | 48 | 3.5 | 41 | 3.4 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 61 | 3.1 | 62 | 4.0 | 60 | 4.1 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 76 | 2.3 | 72 | 3.3 | 80 | 3.5 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 71 | 2.5 | 66 | 3.4 | 75 | 3.7 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 31 | 2.0 | 30 | 2.6 | 32 | 2.9 |
| T01A | Yes | Read simple information from bar graph. | 70 | 1.8 | 74 | 2.5 | 67 | 2.9 |
| T01B | Yes | Read information from bar graph and add to find a total. | 28 | 1.9 | 29 | 2.3 | 28 | 2.7 |

fercent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Hungary SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 94 | 0.6 | 94 | 0.7 | 94 | 0.8 |
| A02 | No | Determine total number from ratio and one number. | 64 | 1.3 | 65 | 1.5 | 63 | 1.6 |
| B09 | No | What is the sum of 2.5 and 3.8? | 59 | 1.9 | 59 | 2.2 | 60 | 2.6 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 55 | 2.3 | 55 | 3.1 | 53 | 2.5 |
| D08 | No | Subtract: 4.03-1.15. | 69 | 1.5 | 68 | 2.1 | 71 | 1.9 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 50 | 1.8 | 47 | 2.5 | 53 | 2.3 |
| E04 | No | Which of the following numbers means 7/10? | 16 | 1.2 | 16 | 1.7 | 16 | 1.8 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 65 | 1.5 | 67 | 2.1 | 63 | 2.1 |
| G01 | No | Given map and legend, how far apart are two cities? | 50 | 2.2 | 53 | 3.1 | 46 | 2.5 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 31 | 2.7 | 32 | 3.5 | 31 | 4.2 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 60 | 2.5 | 69 | 3.9 | 51 | 3.4 |
|  | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 51 | 2.6 | 48 | 4.1 | 54 | 3.8 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 58 | 3.2 | 60 | 4.1 | 55 | 4.6 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 44 | 2.4 | 49 | 3.8 | 40 | 3.7 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 31 | 2.7 | 28 | 4.0 | 33 | 3.1 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 13 | 1.5 | 11 | 2.0 | 16 | 2.2 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 42 | 1.9 | 45 | 2.4 | 39 | 3.1 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 63 | 1.9 | 63 | 2.8 | 64 | 2.6 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 63 | 1.8 | 67 | 2.4 | 59 | 2.7 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 49 | 2.5 | 50 | 3.1 | 48 | 3.4 |
| U03C | Yes | Solve two proportions and compare results. | 79 | 1.5 | 80 | 2.0 | 78 | 2.0 |
| v01 | Yes | Is $1 / 3$ less than $1 / 4$ ? Shade appropriate parts of a circle to demonstrate. | 33 | 2.3 | 32 | 3.0 | 35 | 2.9 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 54 | 1.5 | 57 | 2.1 | 51 | 2.3 |
| D07 | No | Which two figures are congruent? | 85 | 1.2 | 87 | 1.6 | 84 | 1.6 |
| F09 | No | Which of the following must be true of a triangle? | 56 | 1.7 | 56 | 2.2 | 55 | 2.7 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 45 | 2.0 | 48 | 2.5 | 41 | 2.8 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 59 | 3.1 | 62 | 4.0 | 57 | 4.3 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 84 | 1.9 | 87 | 2.7 | 81 | 3.3 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 82 | 1.9 | 82 | 2.6 | 81 | 3.1 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 70 | 2.8 | 71 | 3.2 | 70 | 3.8 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 83 | 2.3 | 83 | 3.0 | 82 | 3.0 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 78 | 2.2 | 75 | 3.2 | 80 | 2.9 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 88 | 1.8 | 89 | 2.3 | 88 | 2.6 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 42 | 2.7 | 43 | 4.0 | 41 | 3.7 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 30 | 2.7 | 31 | 3.7 | 31 | 3.4 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 62 | 2.0 | 63 | 2.6 | 62 | 3.2 |

*COUNTRY ID*=Hungary SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 83 | 1.0 | 84 | 1.4 | 81 | 1.3 |
| B07 | No | Word problem: best estimate of 84 x 57. | 59 | 1.7 | 58 | 2.4 | 60 | 2.1 |
| C02 | No | Find volume of a stack of 5 cubes. | 66 | 1.7 | 69 | 2.1 | 62 | 2.5 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 55 | 2.0 | 59 | 2.6 | 52 | 2.4 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 67 | 1.5 | 69 | 2.0 | 65 | 2.1 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 84 | 1.3 | 86 | 1.7 | 82 | 1.6 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 73 | 1.5 | 75 | 2.0 | 70 | 2.0 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 91 | 1.1 | 93 | 1.2 | 90 | 1.5 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 52 | 2.1 | 53 | 2.8 | 50 | 2.8 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 91 | 1.7 | 94 | 1.9 | 88 | 3.0 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 60 | 2.4 | 62 | 3.5 | 58 | 3.5 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 78 | 2.8 | 76 | 3.6 | 80 | 3.6 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 15 | 2.0 | 18 | 3.3 | 12 | 2.8 |
| L0 6 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 71 | 2.4 | 70 | 3.6 | 72 | 3.4 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 27 | 2.8 | 30 | 3.8 | 25 | 3.7 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 55 | 2.6 | 53 | 4.2 | 56 | 3.5 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 57 | 2.0 | 58 | 2.5 | 56 | 3.2 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 53 | 2.1 | 58 | 2.9 | 48 | 2.9 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 69 | 2.1 | 66 | 2.8 | 72 | 2.3 |
| v05 | Yes | How many millimeters are in a meter? | 67 | 2.2 | 69 | 2.9 | 67 | 2.6 |


ercent correct on the Mathematics Items - Fourth Grade

Fourth Grade

*COUNTRY ID*=Iceland SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ItEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 70 | 1.8 | 65 | 2.8 | 75 | 2.2 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 87 | 1.5 | 88 | 2.0 | 86 | 2.1 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 84 | 1.5 | 86 | 1.9 | 82 | 2.9 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 69 | 1.6 | 66 | 2.7 | 72 | 2.4 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 75 | 2.8 | 70 | 4.1 | 79 | 4.1 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 36 | 4.8 | 36 | 7.1 | 35 | 5.2 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 54 | 3.9 | 55 | 5.3 | 53 | 4.6 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 47 | 3.7 | 49 | 4.8 | 45 | 4.9 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 76 | 3.2 | 80 | 3.6 | 72 | 5.2 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 45 | 3.2 | 49 | 5.1 | 41 | 5.1 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 36 | 2.9 | 36 | 4.0 | 36 | 3.9 |
| T01A | Yes | Read simple information from bar graph. | 77 | 2.0 | 80 | 3.3 | 74 | 2.8 |
| т01B | Yes | Read information from bar graph and add to find a total. | 20 | 1.8 | 21 | 2.8 | 19 | 2.7 |

ercent Correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 94 | 0.6 | 94 | 0.7 | 93 | 0.8 |
| A02 | No | Determine total number from ratio and one number. | 42 | 1.2 | 42 | 1.7 | 42 | 1.6 |
| B09 | No | What is the sum of 2.5 and 3.8? | 41 | 1.7 | 43 | 3.0 | 39 | 2.8 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 22 | 2.0 | 22 | 2.9 | 23 | 2.3 |
| D08 | No | Subtract: 4.03-1.15. | 46 | 3.2 | 44 | 3.5 | 47 | 4.0 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 49 | 1.9 | 49 | 2.9 | 49 | 2.8 |
| E04 | No | Which of the following numbers means 7/10? | 16 | 2.1 | 18 | 2.9 | 14 | 2.8 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate $1 / 4$, mother ate $1 / 4$, how much remains? | 55 | 2.2 | 53 | 3.3 | 58 | 2.4 |
| G01 | No | Given map and legend, how far apart are two cities? | 36 | 1.9 | 37 | 3.5 | 35 | 2.7 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 9 | 2.1 | 12 | 3.1 | 6 | 2.3 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 44 | 3.8 | 44 | 5.1 | 43 | 5.2 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 69 | 3.4 | 67 | 3.7 | 71 | 4.5 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 20 | 3.1 | 18 | 4.2 | 22 | 4.3 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 19 | 3.7 | 19 | 5.2 | 18 | 4.5 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 23 | 3.5 | 23 | 4.9 | 23 | 3.6 |
| S03 | Yes | Solve word problem: 96.4-33.2 | , | 1.1 | 6 | 1.4 | 7 | 1.5 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 37 | 2.7 | 37 | 4.1 | 37 | 3.4 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 5 | 1.2 | 2 | 1.5 | 7 | 1.9 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 5 | 1.1 | 4 | 1.0 | 6 | 1.7 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 27 | 2.1 | 25 | 2.6 | 30 | 3.2 |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 58 | 2.3 | 62 | 3.2 | 54 | 3.7 |
| U03B | Yes | Solve word problem using proportions: $1 / 3=9 / ?$ | 33 | 3.8 | 40 | 4.7 | 26 | 4.6 |
| U03C | Yes | Solve two proportions and compare results. | 66 | 2.9 | 65 | 4.3 | 66 | 3.7 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 22 | 2.4 | 25 | 3.9 | 19 | 2.8 |

Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 45 | 2.3 | 47 | 3.2 | 43 | 2.6 |
| D07 | No | Which two figures are congruent? | 91 | 1.0 | 91 | 1.8 | 91 | 1.5 |
| F09 | No | Which of the following must be true of a triangle? | 70 | 2.6 | 67 | 3.7 | 73 | 2.6 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 55 | 2.4 | 56 | 3.7 | 54 | 2.3 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 48 | 3.3 | 54 | 6.0 | 40 | 5.7 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 70 | 2.5 | 70 | 3.7 | 70 | 4.2 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 91 | 1.8 | 92 | 2.1 | 91 | 2.6 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 52 | 3.5 | 44 | 5.3 | 58 | 4.8 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 59 | 3.2 | 58 | 5.1 | 60 | 4.3 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 75 | 3.6 | 75 | 5.1 | 75 | 4.6 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 93 | 1.9 | 93 | 2.3 | 92 | 2.9 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 25 | 4.1 | 24 | 5.6 | 26 | 4.7 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 47 | 4.5 | 48 | 6.1 | 45 | 5.5 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 57 | 2.7 | 56 | 3.5 | 58 | 3.5 |

*COUNTRY ID*=Iceland SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 44 | 1.6 | 42 | 1.6 | 46 | 2.4 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 30 | 1.7 | 32 | 2.1 | 28 | 3.1 |
| C02 | No | Find volume of a stack of 5 cubes. | 35 | 1.8 | 34 | 2.6 | 36 | 2.9 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 30 | 2.0 | 38 | 2.8 | 23 | 2.1 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 73 | 1.7 | 72 | 2.5 | 73 | 2.4 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 39 | 2.3 | 39 | 3.1 | 38 | 3.6 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 53 | 1.9 | 55 | 3.4 | 50 | 2.3 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 80 | 2.3 | 78 | 3.1 | 82 | 2.8 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 23 | 2.2 | 23 | 2.4 | 23 | 3.1 |
| J06 |  | Which of the following weight (mass) measures is the largest? | 71 | 3.3 | 68 | 4.9 | 74 | 4.6 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 35 | 3.9 | 33 | 5.2 | 36 | 4.5 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 68 | 3.7 | 61 | 6.1 | 76 | 4.7 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 12 | 1.9 | 11 | 3.5 | 14 | 2.9 |
| L0 6 |  | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 44 | 2.9 | 49 | 4.9 | 38 | 4.6 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 35 | 3.5 | 36 | 5.9 | 34 | 4.8 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 29 | 3.1 | 34 | 4.2 | 25 | 5.3 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 46 | 2.4 | 44 | 3.3 | 48 | 3.7 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 43 | 2.8 | 43 | 3.0 | 44 | 3.9 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 46 | 2.7 | 43 | 4.1 | 48 | 3.4 |
| v05 | Yes | How many millimeters are in a meter? | 29 | 2.7 | 34 | 4.3 | 23 | 2.9 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 35 | 2.4 | 36 | 3.3 | 34 | 3.0 |
| H08 | No | Given number pattern, what are the next three numbers? | 52 | 2.1 | 51 | 3.3 | 54 | 3.3 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 49 | 3.1 | 49 | 4.9 | 48 | 5.0 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 24 | 2.9 | 21 | 5.2 | 26 | 4.0 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 50 | 4.9 | 46 | 6.5 | 53 | 5.6 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 52 | 3.8 | 57 | 5.0 | 47 | 5.1 |
| L0 4 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 67 | 3.6 | 66 | 4.6 | 68 | 5.1 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 61 | 4.3 | 64 | 5.2 | 58 | 6.4 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 67 | 3.2 | 71 | 5.0 | 64 | 5.8 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 27 | 3.0 | 27 | 3.9 | 27 |  |

Percent Correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 36 | 1.5 | 35 | 2.2 | 37 | 1.5 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 79 | 1.1 | 80 | 1.4 | 78 | 1.5 |
| B08 | No | Which addition expression has the same value as 342? | 84 | 1.5 | 86 | 2.0 | 81 | 2.1 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 69 | 2.0 | 71 | 3.3 | 67 | 3.2 |
| E02 | No | Which digit is in the hundreds place in 2345? | 74 | 1.5 | 75 | 2.8 | 73 | 2.0 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 65 | 2.3 | 69 | 2.6 | 61 | 2.9 |
| G03 | No | Which of the following is a name for 9740? | 86 | 1.3 | 88 | 2.0 | 85 | 1.9 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 71 | 2.0 | 75 | 2.9 | 68 | 2.2 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 57 | 1.7 | 60 | 2.5 | 54 | 2.1 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 47 | 3.5 | 45 | 3.9 | 49 | 5.2 |
| 104 | Yes | What is 3 times 23? | 80 | 2.2 | 88 | 3.0 | 71 | 5.3 |
| 109 | Yes | Subtract: 6000-2369. | 47 | 3.4 | 45 | 4.2 | 48 | 5.1 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 33 | 3.8 | 37 | 6.3 | 30 | 4.2 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 60 | 3.7 | 60 | 5.2 | 59 | 5.3 |
| K02 | Yes | Add: 6971 + 5291 | 79 | 2.8 | 76 | 4.8 | 82 | 3.0 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 28 | 3.7 | 26 | 4.9 | 29 | 5.0 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 54 | 4.3 | 50 | 6.1 | 58 | 5.5 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 59 | 4.1 | 66 | 4.3 | 51 | 6.2 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 80 | 3.0 | 84 | 3.3 | 76 | 4.4 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 45 | 2.6 | 46 | 3.7 | 44 | 4.1 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 27 | 2.8 | 28 | 3.2 | 26 | 3.4 |
| U05 | Yes | Write addition fact as a multiplication fact. | 63 | 3.0 | 61 | 4.4 | 66 | 3.3 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 27 | 2.5 | 34 | 3.4 | 20 | 2.5 |
| V03 | Yes | What is 5 less than 203? | 50 | 2.5 | 55 | 3.9 | 45 | 2.8 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 21 | 2.6 | 20 | 3.2 | 21 | 3.2 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 35 | 2.5 | 33 | 3.5 | 38 | 3.1 |

ercent Correct on the Mathematics Items - Fourth Grade

Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 33 | 1.6 | 35 | 2.2 | 32 | 2.2 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 34 | 2.0 | 41 | 2.5 | 26 | 2.7 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 40 | 2.0 | 40 | 2.9 | 39 | 2.7 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 34 | 1.5 | 35 | 2.3 | 33 | 2.0 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 40 | 3.2 | 41 | 4.9 | 39 | 4.2 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 16 | 2.3 | 18 | 3.5 | 15 | 2.8 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 17 | 2.5 | 15 | 3.8 | 20 | 2.9 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 70 | 2.7 | 72 | 3.8 | 69 | 3.7 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 23 | 2.0 | 23 | 2.8 | 23 | 3.3 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 1 | 0.5 | 1 | 0.5 | 1 | 0.8 |
| T01A | Yes | Read simple information from bar graph. | 12 | 1.8 | 16 | 2.9 | 7 | 1.4 |
| T01B | Yes | Read information from bar graph and add to find a total. | 4 | 1.0 | 5 | 1.8 | 2 | 0.8 |

*COUNTRY ID*=Iran, Islamic Rep. SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 69 | 1.5 | 73 | 1.7 | 64 | 2.4 |
| A02 | No | Determine total number from ratio and one number. | 24 | 1.0 | 26 | 1.6 | 22 | 1.0 |
| B09 | No | What is the sum of 2.5 and 3.8? | 55 | 2.4 | 48 | 3.6 | 62 | 2.8 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 44 | 2.2 | 44 | 3.3 | 43 | 2.9 |
| D08 | No | Subtract: 4.03-1.15. | 42 | 2.2 | 41 | 3.0 | 44 | 3.3 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 32 | 1.4 | 30 | 1.7 | 34 | 2.2 |
| E04 | No | Which of the following numbers means 7/10? | 60 | 2.5 | 61 | 2.8 | 59 | 3.7 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate $1 / 4$, mother ate $1 / 4$, how much remains? | 43 | 1.8 | 42 | 2.5 | 44 | 2.2 |
| G01 | No | Given map and legend, how far apart are two cities? | 17 | 1.4 | 20 | 2.0 | 13 | 2.0 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 54 | 2.6 | 50 | 4.1 | 58 | 3.5 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 44 | 2.7 | 44 | 3.7 | 44 | 4.3 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 40 | 2.9 | 39 | 3.7 | 42 | 5.0 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 68 | 2.7 | 64 | 4.2 | 72 | 3.6 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 14 | 2.0 | 15 | 2.7 | 12 | 3.0 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 35 | 3.3 | 37 | 4.6 | 33 | 4.6 |
| S03 | Yes | Solve word problem: 96.4-33.2 |  | 2.3 | 11 | 3.8 | 8 | 2.4 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 18 | 2.0 | 22 | 3.1 | 14 | 2.2 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 7 | 1.2 | 7 | 1.4 | 8 | 2.1 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 1 | 0.4 | 1 | 0.4 | 1 | 0.8 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 41 | 2.4 | 38 | 2.8 | 44 | 3.8 |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 24 | 2.0 | 29 | 2.3 | 18 | 2.9 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 11 | 1.4 | 13 | 2.3 | 9 | 1.5 |
| U03C | Yes | Solve two proportions and compare results. | 33 | 1.7 | 35 | 2.5 | 30 | 2.2 |
| v01 | Yes | Is $1 / 3$ less than $1 / 4$ ? Shade appropriate parts of a circle to demonstrate. | 3 | 1.2 | 2 | 0.7 | 5 | 2.5 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 31 | 1.6 | 28 | 2.2 | 33 | 2. |
| D07 | No | Which two figures are congruent? | 61 | 1.6 | 60 | 2.3 | 63 | 2.2 |
| F09 | No | Which of the following must be true of a triangle? | 66 | 1.8 | 64 | 2.3 | 68 | 2.8 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 38 | 1.6 | 39 | 2.1 | 37 | 2.4 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 18 | 1.9 | 18 | 2.8 | 18 | 2.4 |
| I06 | Yes | Which of the following figures is made with straight sides only? | 27 | 2.4 | 29 | 3.5 | 25 | 3.5 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 75 | 3.1 | 73 | 4.4 | 76 | 4.0 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 66 | 3.2 | 65 | 4.3 | 67 | 4.4 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 59 | 2.7 | 53 | 3.9 | 64 | 3.6 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 38 | 2.4 | 38 | 3.7 | 38 | 3.3 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 70 | 2.6 | 70 | 3.6 | 69 | 3.4 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 17 | 2.5 | 17 | 2.8 | 18 | 4.2 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 14 | 2.0 | 15 | 2.8 | 13 | 2.7 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 15 | 1.4 | 15 | 2. | 16 | 1.8 |

*COUNTRY ID*=Iran, Islamic Rep. SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ItEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 76 | 1.1 | 75 | 1.7 | 77 | 1.3 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 26 | 1.5 | 29 | 2.4 | 23 | 1.7 |
| C02 | No | Find volume of a stack of 5 cubes. | 50 | 1.7 | 53 | 2.7 | 47 | 2.2 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 41 | 2.2 | 40 | 3.5 | 43 | 2.3 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 30 | 1.5 | 32 | 1.8 | 28 | 2.4 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 12 | 1.3 | 13 | 1.9 | 10 | 1.6 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 44 | 1.7 | 50 | 2.5 | 38 | 3.0 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 51 | 1.9 | 56 | 2.6 | 47 | 2.6 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 38 | 2.2 | 42 | 2.3 | 34 | 3.3 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 53 | 3.6 | 63 | 4.6 | 42 | 5.3 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 23 | 2.5 | 24 | 3.1 | 23 | 4.1 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 66 | 2.9 | 66 | 3.9 | 67 | 4.0 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 16 | 2.2 | 20 | 3.9 | 12 | 2.5 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 38 | 2.8 | 35 | 3.5 | 41 | 4.5 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? |  | 1.6 | 10 | 2.4 | 6 | 2.1 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 26 | 3.1 | 25 | 4.2 | 28 | 4.5 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 19 | 1.8 | 21 | 3.0 | 17 | 2.1 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 9 | 1.3 | 12 | 1.9 | 5 | 1.5 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 41 | 2.3 | 39 | 3.1 | 43 | 3.5 |
| V05 | Yes | How many millimeters are in a meter? | 38 | 2.4 | 41 | 3.6 | 35 | 3.0 |

*COUNTRY ID*=Iran, Islamic Rep. SCALE=Patterns, Relations and Functions

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 36 | 2.2 | 37 | 3.2 | 34 | 2.8 |
| H08 | No | Given number pattern, what are the next three numbers? | 30 | 1.6 | 28 | 1.9 | 33 | 2.6 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 47 | 3.3 | 50 | 5.1 | 44 | 4.2 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 29 | 3.2 | 29 | 3.8 | 28 | 5.1 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 38 | 3.3 | 40 | 4.9 | 36 | 4.6 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 39 | 2.8 | 42 | 4.2 | 35 | 3.4 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 54 | 3.2 | 49 | 4.6 | 58 | 3.8 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 41 | 2.7 | 41 | 3.6 | 42 | 4.0 |
| M09 | Yes | $4 x^{\text {_ < }}$ <17: Which number could go in the blank to make the sentence true? | 62 | 2.7 | 58 | 4.4 | 66 | 3.8 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 22 | 1.9 | 26 | 3.1 | 18 | 2.7 |

ercent Correct on the Mathematics Items - Fourth Grade

Fourth Grade

*COUNTRY ID*=Ireland SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 73 | 1.6 | 68 | 2.6 | 78 | 1.4 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 94 | 0.8 | 93 | 1.3 | 94 | 1.2 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 85 | 1.1 | 83 | 1.8 | 87 | 1.6 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 78 | 1.5 | 79 | 2.2 | 78 | 1.9 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 84 | 2.1 | 79 | 3.4 | 88 | 2.7 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 69 | 2.7 | 66 | 4.1 | 71 | 3.4 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 62 | 3.1 | 65 | 4.2 | 58 | 4.1 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 52 | 2.6 | 55 | 3.9 | 49 | 3.5 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 72 | 2.5 | 75 | 3.6 | 70 | 2.9 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 65 | 2.8 | 62 | 3.7 | 68 | 4.1 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 34 | 2.0 | 31 | 2.8 | 37 | 2.7 |
| T01A | Yes | Read simple information from bar graph. | 87 | 1.7 | 88 | 2.1 | 85 | 2.4 |
| T01B | Yes | Read information from bar graph and add to find a total. | 48 | 2.2 | 47 | 2.8 | 49 | 2.7 |

fercent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Ireland SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 89 | 0.8 | 90 | 1.2 | 89 | 1.0 |
| A02 | No | Determine total number from ratio and one number. | 63 | 1.0 | 59 | 1.3 | 67 | 1.4 |
| B09 | No | What is the sum of 2.5 and 3.8? | 72 | 1.6 | 70 | 2.1 | 74 | 2.2 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 69 | 2.1 | 66 | 2.6 | 71 | 2.4 |
| D08 | No | Subtract: 4.03-1.15. | 83 | 1.4 | 79 | 2.1 | 87 | 1.6 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 60 | 1.6 | 58 | 2.2 | 62 | 2.0 |
| E04 | No | Which of the following numbers means 7/10? | 57 | 2.6 | 56 | 2.8 | 58 | 3.7 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate $1 / 4$, mother ate $1 / 4$, how much remains? | 82 | 1.1 | 83 | 1.5 | 81 | 1.7 |
| G01 | No | Given map and legend, how far apart are two cities? | 40 | 1.9 | 45 | 2.7 | 35 | 2.8 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 55 | 3.9 | 54 | 4.9 | 55 | 5.3 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 56 | 2.5 | 57 | 4.3 | 56 | 3.2 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 51 | 2.8 | 52 | 4.0 | 51 | 3.5 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 79 | 2.8 | 77 | 3.3 | 82 | 4.3 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 44 | 2.5 | 44 | 3.8 | 45 | 3.3 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 48 | 3.4 | 49 | 5.1 | 48 | 4.4 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 29 | 1.9 | 27 | 2.7 | 31 | 2.7 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 58 | 1.7 | 57 | 2.9 | 59 | 2.2 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 26 | 1.9 | 23 | 2.5 | 30 | 2.5 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 25 | 1.9 | 21 | 2.5 | 30 | 2.6 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 74 | 1.9 | 73 | 2.3 | 75 | 2.6 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 67 | 2.2 | 73 | 2.6 | 62 | 3.4 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 47 | 2.6 | 48 | 3.2 | 46 | 3.5 |
| U03C | Yes | Solve two proportions and compare results. | 83 | 1.5 | 83 | 2.2 | 84 | 2.1 |
| V01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 30 | 2.5 | 32 | 2.9 | 29 | 3.6 |

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 55 | 1.7 | 55 | 2.3 | 56 | 2.2 |
| D07 | No | Which two figures are congruent? | 90 | 1.1 | 89 | 1.4 | 91 | 1.6 |
| F09 | No | Which of the following must be true of a triangle? | 75 | 1.4 | 74 | 1.9 | 75 | 1.9 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 49 | 1.9 | 51 | 2.2 | 48 | 2.5 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 54 | 2.8 | 55 | 4.4 | 53 | 3.6 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 71 | 2.3 | 70 | 3.4 | 71 | 3.1 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 87 | 1.9 | 86 | 2.8 | 88 | 2.7 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 62 | 2.6 | 59 | 3.5 | 65 | 3.8 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 69 | 1.9 | 66 | 3.1 | 71 | 3.1 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 83 | 2.2 | 82 | 2.9 | 84 | 3.1 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 92 | 1.7 | 93 | 2.1 | 91 | 2.4 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 43 | 3.0 | 46 | 4.2 | 40 | 4.3 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 45 | 3.3 | 39 | 4.0 | 51 | 4.6 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 57 | 2.3 | 58 | 3.0 | 56 | 3.2 |

*COUNTRY ID*=Ireland SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 79 | 0.9 | 81 | 1.2 | 78 | 1.3 |
| B07 | No | Word problem: best estimate of 84 x 57. | 54 | 1.4 | 54 | 2.2 | 55 | 1.9 |
| C02 | No | Find volume of a stack of 5 cubes. | 68 | 1.8 | 65 | 2.6 | 71 | 2.2 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 53 | 1.7 | 54 | 2.1 | 51 | 2.6 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 82 | 1.3 | 79 | 2.0 | 84 | 1.6 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 82 | 1.5 | 86 | 1.7 | 77 | 2.2 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 58 | 1.8 | 61 | 2.2 | 56 | 2.8 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 54 | 2.1 | 54 | 2.7 | 54 | 2.9 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 40 | 2.1 | 39 | 2.6 | 41 | 3.1 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 56 | 3.6 | 59 | 4.6 | 53 | 5.1 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 58 | 2.8 | 56 | 3.8 | 60 | 3.3 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 79 | 2.5 | 79 | 3.2 | 79 | 3.6 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 20 | 1.9 | 19 | 3.0 | 21 | 2.4 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 52 | 2.6 | 51 | 4.2 | 52 | 3.5 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 39 | 3.3 | 44 | 4.8 | 34 | 3.8 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 44 | 2.8 | 41 | 4.3 | 47 | 4.3 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 60 | 2.3 | 61 | 2.9 | 60 | 3.4 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 57 | 2.2 | 64 | 2.9 | 50 | 3.2 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 36 | 1.9 | 36 | 2.6 | 36 | 2.6 |
| V05 | Yes | How many millimeters are in a meter? | 46 | 2.6 | 50 | 3.3 | 42 | 3.9 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 59 | 2.1 | 57 | 2.7 | 61 | 2.6 |
| H08 | No | Given number pattern, what are the next three numbers? | 70 | 1.5 | 67 | 2.1 | 72 | 2.1 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 60 | 2.8 | 61 | 3.3 | 58 | 4.3 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 38 | 2.9 | 38 | 3.8 | 37 | 4.2 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 62 | 2.7 | 64 | 3.4 | 61 | 4.0 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 68 | 2.4 | 67 | 3.2 | 70 | 3.7 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 75 | 2.0 | 78 | 3.1 | 71 | 2.7 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 66 | 2.8 | 72 | 3.9 | 60 | 4.2 |
| M09 | Yes | 4 x _<17: Which number could go in the blank to make the sentence true? | 65 | 2.6 | 62 | 3.9 | 68 | 3.8 |
| U04 | Yes | Explain operation used to find next number in a pattern. | 74 | 1.9 | 77 | 2.3 | 71 | 2.6 |

Percent Correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 78 | 1.1 | 75 | 1.6 | 80 | 1.4 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 82 | 0.9 | 81 | 1.2 | 82 | 1.1 |
| B08 | No | Which addition expression has the same value as 342? | 86 | 1.1 | 87 | 1.3 | 84 | 1.5 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 87 | 1.4 | 86 | 1.9 | 88 | 1.7 |
| E02 | No | Which digit is in the hundreds place in 2345? | 78 | 1.6 | 78 | 2.1 | 77 | 2.3 |
| F07 | No | What number equals 3 ones +5 tens +4 hundreds +60 thousands? | 58 | 1.5 | 59 | 2.1 | 58 | 2.3 |
| G03 | No | Which of the following is a name for 9740? | 93 | 1.1 | 91 | 1.9 | 95 | 1.1 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 68 | 1.8 | 70 | 2.2 | 67 | 2.5 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 76 | 1.5 | 77 | 2.0 | 75 | 2.1 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 62 | 2.5 | 57 | 4.0 | 65 | 3.2 |
| 104 | Yes | What is 3 times 23? | 87 | 1.9 | 86 | 2.8 | 88 | 2.4 |
| 109 | Yes | Subtract: 6000-2369. | 82 | 2.5 | 79 | 4.2 | 85 | 2.7 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 51 | 3.2 | 51 | 3.9 | 51 | 5.4 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 83 | 2.3 | 85 | 2.7 | 80 | 3.6 |
| K02 | Yes | Add: 6971 + 5291 | 92 | 1.3 | 92 | 1.7 | 93 | 1.8 |
| L07 | Yes | In which of the following pairs of numbers is the 2nd number 100 more than the 1st? | 44 | 3.3 | 54 | 4.8 | 34 | 4.2 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 60 | 3.1 | 62 | 4.2 | 58 | 4.5 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 72 | 2.9 | 71 | 3.8 | 72 | 4.1 |
| м08 | Yes | Which of the following four-digit numbers is the largest? | 88 | 2.0 | 87 | 2.9 | 88 | 2.9 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 62 | 2.1 | 63 | 2.7 | 60 | 2.8 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 49 | 2.3 | 47 | 3.1 | 50 | 3.0 |
| U05 | Yes | Write addition fact as a multiplication fact. | 86 | 1.6 | 87 | 2.1 | 85 | 2.2 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 53 | 2.3 | 55 | 3.2 | 52 | 3.2 |
| V03 | Yes | What is 5 less than 203? | 75 | 1.9 | 76 | 2.5 | 75 | 2.7 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 20 | 1.4 | 18 | 2.2 | 21 | 2.1 |
| v04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 46 | 1.7 | 46 | 2.4 | 46 | 2.4 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 70 | 1.6 | 67 | 2.2 | 72 | 2.1 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 86 | 1.1 | 88 | 1.7 | 86 | 1.6 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 87 | 1.3 | 88 | 1.6 | 89 | 1.6 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 74 | 2.0 | 76 | 2.1 | 76 | 2.6 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 68 | 2.6 | 66 | 4.3 | 72 | 3.3 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 57 | 3.1 | 55 | 3.9 | 60 | 4.8 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 51 | 3.1 | 56 | 5.2 | 46 | 4.5 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 51 | 2.7 | 50 | 4.1 | 53 | 4.7 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 85 | 2.7 | 88 | 2.9 | 82 | 3.6 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 56 | 2.7 | 52 | 5.2 | 58 | 3.5 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 37 | 2.4 | 36 | 3.2 | 37 | 2.9 |
| T01A | Yes | Read simple information from bar graph. | 76 | 1.9 | 81 | 2.3 | 74 | 2.6 |
| T01B | Yes | Read information from bar graph and add to find a total. | 40 | 2.6 | 40 | 3.4 | 42 | 3.2 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Israel SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 87 | 0.8 | 89 | 1.2 | 87 | 1.3 |
| A02 | No | Determine total number from ratio and one number. | 59 | 1.5 | 60 | 2.3 | 59 | 1.6 |
| B09 | No | What is the sum of 2.5 and 3.8? | 52 | 1.9 | 55 | 2.3 | 50 | 2.5 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 60 | 2.9 | 60 | 3.4 | 59 | 3.5 |
| D08 | No | Subtract: 4.03-1.15. | 51 | 2.2 | 47 | 3.1 | 56 | 2.5 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 54 | 2.5 | 51 | 3.0 | 57 | 2.8 |
| E04 | No | Which of the following numbers means 7/10? | 23 | 2.2 | 25 | 2.6 | 19 | 2.7 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 62 | 2.4 | 59 | 3.0 | 64 | 3.1 |
| G01 | No | Given map and legend, how far apart are two cities? | 31 | 1.5 | 36 | 2.7 | 25 | 2.0 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 18 | 2.9 | 19 | 4.0 | 18 | 3.5 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 60 | 2.9 | 67 | 4.5 | 51 | 4.5 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 53 | 3.5 | 58 | 4.7 | 45 | 5.5 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 62 | 3.4 | 63 | 5.3 | 63 | 4.5 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 34 | 2.8 | 38 | 4.0 | 34 | 3.6 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 28 | 3.2 | 22 | 4.1 | 32 | 4.4 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 25 | 1.9 | 24 | 2.2 | 27 | 2.8 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 57 | 2.6 | 59 | 3.5 | 55 | 3.7 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 19 | 1.7 | 17 | 2.5 | 23 | 2.5 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 16 | 1.7 | 16 | 1.9 | 18 | 2.5 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 65 | 2.6 | 64 | 3.3 | 65 | 3.2 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 60 | 2.3 | 65 | 2.9 | 58 | 2.8 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 43 | 2.6 | 49 | 3.0 | 39 | 3.8 |
| U03C | Yes | Solve two proportions and compare results. | 71 | 2.1 | 71 | 2.9 | 74 | 3.1 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 39 | 3.1 | 35 | 3.5 | 42 | 4.1 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 33 | 2.1 | 34 | 2.5 | 33 | 2.7 |
| D07 | No | Which two figures are congruent? | 82 | 1.5 | 81 | 2.2 | 85 | 1.9 |
| F09 | No | Which of the following must be true of a triangle? | 81 | 1.3 | 80 | 2.3 | 82 | 1.6 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 33 | 1.5 | 32 | 3.0 | 35 | 2.0 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 54 | 3.2 | 59 | 5.1 | 45 | 4.5 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 72 | 2.7 | 69 | 5.0 | 75 | 4.6 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 90 | 1.8 | 91 | 2.4 | 90 | 2.9 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 68 | 3.5 | 67 | 4.9 | 70 | 4.5 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 66 | 2.6 | 64 | 3.6 | 68 | 3.9 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 72 | 2.8 | 71 | 3.9 | 78 | 3.6 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 80 | 2.7 | 81 | 3.4 | 80 | 3.9 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 32 | 3.0 | 31 | 4.7 | 29 | 4.3 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 49 | 2.8 | 48 | 4.5 | 52 | 4.1 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 55 | 2.4 | 52 | 2.7 | 61 | 2.7 |

*COUNTRY ID*=Israel SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ItEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 81 | 1.1 | 82 | 1.2 | 79 | 1.6 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 58 | 2.4 | 59 | 2.9 | 57 | 3.4 |
| C02 | No | Find volume of a stack of 5 cubes. | 85 | 1.6 | 87 | 2.0 | 84 | 2.2 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 60 | 2.2 | 65 | 2.8 | 57 | 2.9 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 65 | 1.8 | 64 | 2.6 | 63 | 2.2 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 60 | 2.1 | 65 | 2.8 | 56 | 2.9 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 55 | 2.2 | 61 | 2.8 | 50 | 2.9 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 87 | 1.2 | 89 | 1.9 | 86 | 1.8 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 43 | 2.3 | 45 | 3.3 | 41 | 2.7 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 50 | 3.0 | 59 | 4.3 | 41 | 3.7 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 66 | 3.2 | 68 | 4.4 | 65 | 4.5 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 66 | 2.8 | 68 | 3.6 | 64 | 4.4 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 17 | 2.5 | 18 | 3.7 | 17 | 3.8 |
| L06 |  | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 62 | 2.4 | 70 | 3.9 | 55 | 3.6 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 27 | 3.1 | 25 | 4.7 | 31 | 4.3 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 28 | 3.1 | 27 | 4.6 | 30 | 3.9 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 35 | 2.2 | 36 | 3.5 | 35 | 3.1 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 46 | 2.7 | 53 | 3.1 | 41 | 3.3 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 46 | 2.1 | 45 | 3.6 | 48 | 3.0 |
| V05 | Yes | How many millimeters are in a meter? | 41 | 2.7 | 47 | 4.2 | 36 | 3.6 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 58 | 1.8 | 60 | 2.7 | 58 | 2.4 |
| H08 | No | Given number pattern, what are the next three numbers? | 63 | 2.4 | 64 | 3.1 | 65 | 3.1 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 61 | 3.0 | 59 | 4.1 | 65 | 4.6 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 45 | 3.5 | 50 | 5.0 | 40 | 4.1 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 59 | 3.1 | 57 | 3.8 | 61 | 4.3 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 56 | 3.1 | 60 | 4.8 | 55 | 4.6 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 69 | 2.8 | 61 | 4.6 | 77 | 3.6 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 68 | 3.4 | 69 | 4.2 | 67 | 4.3 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 77 | 2.7 | 76 | 4.2 | 77 | 3.6 |
| U04 | Yes | Explain operation used to find next number in a pattern. | 46 | 2.9 | 48 | 3.7 | 46 | 3.5 |


ercent correct on the Mathematics Items - Fourth Grade

Fourth Grade

|  |  |  | Overal |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 74 | 1.0 | 71 | 1.4 | 76 | 1.4 |
| C01 | No | Shown graph ( 20 unit increments), which class collected 45 bottles? | 97 | 0.5 | 97 | 0.7 | 97 | 0.6 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 86 | 0.9 | 85 | 1.4 | 87 | 1.1 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 88 | 0.8 | 87 | 1.3 | 89 | 1.2 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 65 | 2.0 | 68 | 2.7 | 62 | 3.0 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 90 | 1.5 | 90 | 1.9 | 90 | 2.0 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 70 | 2.4 | 70 | 3.1 | 69 | 3.3 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 89 | 1.5 | 91 | 1.6 | 87 | 2.1 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 68 | 2.0 | 70 | 2.8 | 67 | 3.2 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 78 | 1.3 | 73 | 1.6 | 83 | 1.7 |
| T01A | Yes | Read simple information from bar graph. | 94 | 0.7 | 94 | 1.0 | 95 | 1.0 |
| т01B | Yes | Read information from bar graph and add to find a total. | 32 | 1.9 | 31 | 2.3 | 32 | 2.4 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Japan SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 90 | 0.6 | 91 | 0.8 | 89 | 0.8 |
| A02 | No | Determine total number from ratio and one number. | 62 | 0.9 | 63 | 1.1 | 61 | 1.2 |
| B09 | No | What is the sum of 2.5 and 3.8? | 95 | 0.6 | 94 | 0.9 | 96 | 0.7 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 78 | 1.2 | 75 | 1.7 | 82 | 1.2 |
| D08 | No | Subtract: 4.03-1.15. | 87 | 0.9 | 87 | 1.3 | 88 | 1.2 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 71 | 1.2 | 71 | 1.7 | 72 | 1.5 |
| E04 | No | Which of the following numbers means 7/10? | 65 | 1.4 | 68 | 1.5 | 63 | 2.0 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate $1 / 4$, mother ate $1 / 4$, how much remains? | 49 | 1.3 | 48 | 2.1 | 49 | 1.7 |
| G01 | No | Given map and legend, how far apart are two cities? | 55 | 1.2 | 59 | 1.7 | 50 | 1.6 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 73 | 1.7 | 76 | 2.2 | 69 | 2.7 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 45 | 2.4 | 50 | 2.9 | 39 | 3.4 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 58 | 2.1 | 59 | 3.3 | 57 | 2.9 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 89 | 1.6 | 87 | 2.4 | 91 | 1.8 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 49 | 2.2 | 47 | 2.9 | 51 | 2.8 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 71 | 2.3 | 73 | 3.1 | 69 | 3.0 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 40 | 1.9 | 36 | 2.5 | 43 | 2.3 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 70 | 1.5 | 74 | 2.0 | 67 | 2.2 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 30 | 1.6 | 29 | 2.2 | 32 | 2.2 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 30 | 1.5 | 33 | 2.0 | 28 | 2.3 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 78 | 1.5 | 79 | 1.8 | 78 | 2.1 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 76 | 1.2 | 80 | 1.7 | 71 | 1.8 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 61 | 1.2 | 65 | 1.8 | 57 | 1.9 |
| U03C | Yes | Solve two proportions and compare results. | 85 | 1.2 | 85 | 1.7 | 85 | 1.6 |
| v01 | Yes | Is $1 / 3$ less than $1 / 4$ ? Shade appropriate parts of a circle to demonstrate. | 41 | 1.7 | 38 | 2.4 | 45 | 2.4 |

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 46 | 1.2 | 48 | 1.5 | 45 | 1.9 |
| D07 | No | Which two figures are congruent? | 92 | 0.6 | 92 | 0.9 | 93 | 1.0 |
| F09 | No | Which of the following must be true of a triangle? | 71 | 1.2 | 71 | 1.6 | 71 | 1.6 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 50 | 1.5 | 56 | 1.9 | 44 | 2.1 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 77 | 2.0 | 82 | 2.4 | 72 | 2.8 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 90 | 1.4 | 90 | 1.9 | 91 | 1.9 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 90 | 1.6 | 88 | 2.3 | 92 | 1.9 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 52 | 2.5 | 51 | 3.3 | 52 | 3.1 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 56 | 2.0 | 56 | 3.3 | 57 | 3.0 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 86 | 1.4 | 84 | 2.2 | 88 | 1.9 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 59 | 2.8 | 59 | 3.3 | 60 | 3.6 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 61 | 2.2 | 63 | 3.1 | 58 | 2.7 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 88 | 1.0 | 87 | 1.5 | 89 | 1.1 |

*COUNTRY ID*=Japan SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 95 | 0.4 | 94 | 0.6 | 95 | 0.5 |
| B07 | No | Word problem: best estimate of 84 x 57. | 65 | 1.2 | 67 | 1.4 | 62 | 1.6 |
| C02 | No | Find volume of a stack of 5 cubes. | 70 | 1.2 | 73 | 1.8 | 67 | 1.7 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 73 | 1.1 | 77 | 1.4 | 68 | 1.5 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 82 | 1.0 | 81 | 1.6 | 82 | 1.3 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 86 | 0.9 | 86 | 1.3 | 86 | 1.1 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 88 | 1.0 | 87 | 1.3 | 89 | 1.1 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 95 | 0.6 | 94 | 0.8 | 95 | 0.9 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 27 | 1.4 | 27 | 1.9 | 26 | 1.8 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 94 | 1.0 | 93 | 1.8 | 95 | 1.3 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 75 | 2.0 | 74 | 2.4 | 75 | 2.8 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 88 | 1.4 | 87 | 2.3 | 89 | 1.9 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 32 | 2.2 | 37 | 3.4 | 28 | 2.7 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 45 | 2.2 | 49 | 3.0 | 41 | 3.5 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 75 | 1.8 | 74 | 2.8 | 76 | 2.1 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 68 | 1.5 | 68 | 2.1 | 67 | 2.0 |
| T03 | Yes | Mr . Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 60 | 1.5 | 65 | 2.0 | 55 | 2.0 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 77 | 1.3 | 77 | 1.8 | 78 | 1.8 |
| v05 | Yes | How many millimeters are in a meter? | 62 | 1.5 | 67 | 1.8 | 57 | 2.3 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 74 | 1.2 | 75 | 1.6 | 74 | 1.6 |
| H08 | No | Given number pattern, what are the next three numbers? | 82 | 0.9 | 80 | 1.3 | 84 | 1.3 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 88 | 1.6 | 88 | 2.2 | 88 | 2.1 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 50 | 2.1 | 51 | 3.1 | 49 | 2.7 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 73 | 2.0 | 77 | 2.3 | 70 | 3.3 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 86 | 1.4 | 86 | 1.9 | 85 | 2.1 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 91 | 1.2 | 89 | 1.7 | 93 | 1.5 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 73 | 2.1 | 73 | 2.9 | 73 | 2.7 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 89 | 1.4 | 91 | 2.0 | 87 | 2.0 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 58 | 1.4 | 56 | 2.1 | 59 | 2.0 |

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 75 | 0.8 | 73 | 1.0 | 77 | 1.0 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 90 | 0.6 | 91 | 0.6 | 89 | 0.9 |
| B08 | No | Which addition expression has the same value as 342? | 95 | 0.5 | 95 | 0.7 | 95 | 0.6 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 91 | 0.7 | 92 | 0.9 | 91 | 1.0 |
| E02 | No | Which digit is in the hundreds place in 2345? | 94 | 0.7 | 94 | 0.8 | 94 | 0.9 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 81 | 1.0 | 83 | 1.3 | 79 | 1.4 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 87 | 0.9 | 86 | 1.2 | 87 | 1.1 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 60 | 1.1 | 60 | 1.9 | 60 | 1.7 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 71 | 2.1 | 69 | 2.5 | 73 | 3.0 |
| 104 | Yes | What is 3 times 23? | 96 | 0.8 | 96 | 1.4 | 97 | 1.1 |
| 109 | Yes | Subtract: 6000-2369. | 89 | 1.4 | 89 | 2.0 | 89 | 1.8 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 59 | 2.6 | 64 | 3.2 | 55 | 3.3 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 90 | 1.1 | 92 | 1.5 | 87 | 2.0 |
| K02 | Yes | Add: 6971 + 5291 | 93 | 1.1 | 94 | 1.6 | 93 | 1.7 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 73 | 2.2 | 77 | 2.5 | 69 | 2.8 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 89 | 1.4 | 90 | 1.7 | 88 | 2.2 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 88 | 1.5 | 91 | 1.7 | 85 | 2.2 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 94 | 1.0 | 94 | 1.5 | 95 | 1.5 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 86 | 1.2 | 87 | 1.6 | 84 | 1.6 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 53 | 1.8 | 58 | 2.3 | 48 | 2.4 |
| U05 | Yes | Write addition fact as a multiplication fact. | 92 | 0.8 | 93 | 1.1 | 92 | 1.2 |
| v02 | Yes | Write the number that is 1000 more than $56,821$. | 75 | 1.6 | 81 | 1.7 | 69 | 2.3 |
| v03 | Yes | What is 5 less than 203? | 81 | 1.2 | 85 | 1.7 | 76 | 1.7 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 36 | 1.4 | 36 | 1.9 | 36 | 2.2 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 81 | 1.2 | 82 | 1.6 | 81 | 1.6 |

## Fourth Grade

| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 70 | 1.3 | 68 | 2.0 | 71 | 1.8 |
| C01 | No | Shown graph ( 20 unit increments), which class collected 45 bottles? | 98 | 0.6 | 98 | 0.7 | 98 | 0.6 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 97 | 0.6 | 96 | 0.9 | 97 | 0.7 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 87 | 1.0 | 89 | 1.5 | 86 | 1.5 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 96 | 1.0 | 96 | 1.4 | 95 | 1.6 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 53 | 2.6 | 55 | 4.0 | 50 | 3.5 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 63 | 2.7 | 67 | 3.3 | 59 | 4.0 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 39 | 3.1 | 42 | 3.8 | 36 | 3.8 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 84 | 2.0 | 92 | 2.0 | 77 | 3.2 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 83 | 1.9 | 84 | 2.6 | 81 | 2.9 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 83 | 1.5 | 81 | 2.2 | 86 | 1.8 |
| T01A | Yes | Read simple information from bar graph. | 96 | 0.8 | 97 | 0.9 | 94 | 1.4 |
| т01B | Yes | Read information from bar graph and add to find a total. | 73 | 2.0 | 70 | 2.7 | 76 | 2.7 |

Percent Correct on the Mathematics Items - Fourth Grade
COUNTRY ID*=Korea SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 44 | 1.0 | 49 | 1.4 | 40 | 1.6 |
| A02 | No | Determine total number from ratio and one number. | 46 | 1.0 | 46 | 1.3 | 45 | 1.3 |
| B09 | No | What is the sum of 2.5 and 3.8? | 96 | 0.5 | 96 | 0.9 | 96 | 0.7 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 84 | 1.2 | 83 | 1.7 | 86 | 1.5 |
| D08 | No | Subtract: 4.03-1.15. | 89 | 1.1 | 89 | 1.5 | 88 | 1.6 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 66 | 1.3 | 67 | 2.0 | 65 | 1.9 |
| E04 | No | Which of the following numbers means 7/10? | 81 | 1.3 | 83 | 1.8 | 79 | 1.8 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 39 | 1.3 | 42 | 2.0 | 35 | 1.9 |
| G01 | No | Given map and legend, how far apart are two cities? | 47 | 1.6 | 48 | 2.2 | 46 | 2.3 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 70 | 2.7 | 75 | 3.2 | 65 | 4.2 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 67 | 2.5 | 71 | 3.4 | 64 | 3.2 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 57 | 2.6 | 60 | 4.4 | 54 | 3.4 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 92 | 1.4 | 92 | 1.7 | 92 | 2.1 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 54 | 2.7 | 56 | 3.5 | 53 | 3.7 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 67 | 2.7 | 71 | 3.2 | 63 | 3.9 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 53 | 2.0 | 51 | 3.0 | 56 | 2.6 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 69 | 1.5 | 73 | 2.2 | 66 | 2.3 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 43 | 2.4 | 41 | 3.1 | 45 | 3.2 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 32 | 2.0 | 33 | 2.5 | 31 | 2.8 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 90 | 1.3 | 91 | 1.6 | 89 | 1.9 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 76 | 1.6 | 80 | 2.1 | 73 | 2.4 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 64 | 1.9 | 70 | 2.6 | 58 | 2.7 |
| U03C | Yes | Solve two proportions and compare results. | 76 | 1.6 | 79 | 2.2 | 73 | 2.0 |
| v01 | Yes | Is $1 / 3$ less than $1 / 4$ ? Shade appropriate parts of a circle to demonstrate. | 41 | 2.1 | 41 | 2.9 |  | 2.7 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 61 | 1.4 | 58 | 1.9 | 65 | 1.8 |
| D07 | No | Which two figures are congruent? | 93 | 0.8 | 95 | 1.0 | 92 | 1.2 |
| F09 | No | Which of the following must be true of a triangle? | 90 | 0.9 | 91 | 1.1 | 88 | 1.4 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 55 | 1.3 | 62 | 2.0 | 46 | 2.1 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 68 | 2.7 | 73 | 3.7 | 64 | 3.7 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 83 | 2.2 | 82 | 3.5 | 85 | 2.7 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 81 | 2.1 | 80 | 3.2 | 81 | 3.2 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 87 | 1.7 | 86 | 2.8 | 89 | 2.4 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 38 | 2.6 | 39 | 4.0 | 38 | 4.0 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 90 | 2.0 | 90 | 2.6 | 89 | 2.8 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 91 | 1.6 | 90 | 2.5 | 93 | 1.8 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 31 | 2.5 | 31 | 3.8 | 31 | 3.1 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 52 | 2.7 | 55 | 3.8 | 49 | 3.7 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 84 | 1.4 | 83 | 2.1 | 86 | 1.8 |

*COUNTRY ID*=Korea SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 87 | 0.7 | 88 | 1.0 | 87 | 0.9 |
| B07 | No | Word problem: best estimate of 84 x 57. | 68 | 1.3 | 70 | 1.6 | 66 | 1.9 |
| C02 | No | Find volume of a stack of 5 cubes. | 94 | 0.8 | 94 | 1.2 | 94 | 1.0 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 61 | 1.6 | 70 | 2.0 | 53 | 2.5 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 77 | 1.3 | 82 | 1.7 | 73 | 2.0 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 95 | 0.7 | 95 | 0.9 | 95 | 0.9 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 82 | 1.3 | 83 | 1.7 | 81 | 1.8 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 90 | 0.9 | 89 | 1.7 | 91 | 1.3 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 41 | 1.8 | 45 | 2.2 | 38 | 2.4 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 90 | 1.6 | 92 | 2.1 | 87 | 2.7 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 78 | 2.3 | 80 | 3.0 | 76 | 3.7 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 85 | 2.0 | 88 | 2.6 | 83 | 2.7 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 38 | 3.0 | 41 | 4.0 | 36 | 3.9 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 67 | 2.5 | 69 | 3.5 | 65 | 3.8 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 65 | 2.1 | 62 | 3.7 | 69 | 3.3 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 31 | 2.5 | 28 | 3.6 | 33 | 3.5 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 67 | 2.0 | 67 | 2.8 | 67 | 2.9 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 74 | 1.9 | 78 | 2.5 | 69 | 2.8 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 74 | 2.0 | 69 | 2.5 | 79 | 2.2 |
| v05 | Yes | How many millimeters are in a meter? | 52 | 1.9 | 57 | 2.5 | 47 | 2.8 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 72 | 1.4 | 72 | 2.1 | 72 | 2.0 |
| H08 | No | Given number pattern, what are the next three numbers? | 89 | 1.0 | 87 | 1.5 | 91 | 1.4 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 86 | 1.9 | 85 | 3.3 | 86 | 2.3 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 70 | 2.2 | 74 | 3.2 | 67 | 4.1 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 80 | 2.2 | 79 | 2.8 | 80 | 3.3 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 87 | 1.7 | 89 | 2.6 | 86 | 2.6 |
| L0 4 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 93 | 1.4 | 92 | 2.1 | 93 | 1.8 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 86 | 1.8 | 88 | 2.7 | 85 | 2.6 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 93 | 1.4 | 94 | 1.9 | 93 | 2.2 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 74 | 1.7 | 76 | 2.1 | 71 | 2.5 |

ercent Correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 80 | 0.7 | 80 | 1.1 | 80 | 1.3 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 92 | 0.5 | 93 | 0.7 | 92 | 0.8 |
| B08 | No | Which addition expression has the same value as 342? | 97 | 0.5 | 98 | 0.6 | 96 | 0.7 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 95 | 0.7 | 95 | 1.0 | 94 | 1.0 |
| E02 | No | Which digit is in the hundreds place in 2345? | 98 | 0.4 | 98 | 0.6 | 98 | 0.7 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 77 | 1.4 | 81 | 1.7 | 72 | 2.1 |
| G03 | No | Which of the following is a name for 9740? | 99 | 0.3 | 99 | 0.3 | 99 | 0.5 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 92 | 0.7 | 93 | 1.0 | 90 | 1.2 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 94 | 0.7 | 94 | 0.9 | 94 | 1.0 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 82 | 2.1 | 81 | 3.4 | 82 | 3.0 |
| 104 | Yes | What is 3 times 23? | 86 | 1.8 | 84 | 3.0 | 88 | 2.2 |
| 109 | Yes | Subtract: 6000-2369. | 93 | 1.6 | 90 | 2.7 | 95 | 1.6 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 80 | 1.8 | 84 | 2.6 | 75 | 3.1 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 91 | 1.8 | 93 | 2.1 | 89 | 2.8 |
| K02 | Yes | Add: 6971 + 5291 | 96 | 1.2 | 95 | 1.6 | 97 | 1.6 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 80 | 2.2 | 80 | 3.0 | 81 | 2.9 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x _ is the same as what? | 82 | 1.9 | 84 | 2.6 | 79 | 3.3 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 87 | 1.6 | 88 | 2.1 | 86 | 2.5 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 97 | 1.0 | 96 | 1.5 | 97 | 1.3 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 91 | 1.1 | 92 | 1.7 | 90 | 1.4 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 92 | 1.1 | 92 | 1.6 | 92 | 1.5 |
| U05 | Yes | Write addition fact as a multiplication fact. | 94 | 0.9 | 93 | 1.3 | 94 | 1.3 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 85 | 1.4 | 89 | 1.7 | 81 | 2.3 |
| V03 | Yes | What is 5 less than 203? | 89 | 1.3 | 92 | 1.5 | 86 | 2.0 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 63 | 2.4 | 63 | 2.9 | 63 | 2.9 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 66 | 2.1 | 68 | 2.7 | 63 | 3.0 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Kuwait SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ItEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 38 | 1.5 |  |  | - |  |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 45 | 1.8 |  |  |  |  |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 55 | 1.7 | - | . | . |  |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 46 | 1.7 |  | . | . |  |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 43 | 1.6 |  | . | . |  |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 10 | 1.5 |  |  |  |  |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 7 | 1.4 |  | . | . |  |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 31 | 2.1 |  | . | . |  |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 58 | 1.9 |  | . | . |  |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 8 | 1.2 |  | . |  |  |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 8 | 0.9 |  | . | . |  |
| T01A | Yes | Read simple information from bar graph. | 17 | 1.5 |  | . | . |  |
| т01B | Yes | Read information from bar graph and add to find a total. | 3 | 0.8 | . | . | . |  |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 74 | 0.7 |  |  | . |  |
| A02 | No | Determine total number from ratio and one number. | 17 | 0.6 |  |  | . |  |
| B09 | No | What is the sum of 2.5 and 3.8? | 37 | 1.4 |  |  | . |  |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 20 | 1.3 |  |  | . |  |
| D08 | No | Subtract: 4.03-1.15. | 42 | 1.9 |  |  |  |  |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 36 | 1.5 |  |  | - |  |
| E04 | No | Which of the following numbers means 7/10? | 19 | 1.3 |  | . | . |  |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate $1 / 4$, mother ate $1 / 4$, how much remains? | 53 | 2.2 |  | . | - |  |
| G01 | No | Given map and legend, how far apart are two cities? | 27 | 1.2 |  | . | - |  |
| 102 | Yes | Which of the following word expressions is the same as .4? | 22 | 1.9 |  | . | . |  |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 23 | 2.3 |  |  | . |  |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 38 | 2.5 |  | - | - |  |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 21 | 1.9 |  | . | - |  |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 20 | 1.8 |  |  | . |  |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 32 | 2.3 |  | . | . |  |
| S03 | Yes | Solve word problem: 96.4-33.2 | 5 | 0.7 |  | - | - |  |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 11 | 1.2 |  | . | . |  |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 7 | 1.0 |  | . | . |  |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 4 | 0.8 |  | . | . |  |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 30 | 1.7 |  | . | . |  |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 17 | 1.2 |  | . | - |  |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 7 | 1.1 |  | . | . |  |
| U03C | Yes | Solve two proportions and compare results. | 28 | 2.1 | . | . | $\cdot$ |  |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 6 | 0.8 |  |  |  |  |


*COUNTRY ID*=Kuwait SCALE=Measurement, Estimation, \& Number Sense


Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 29 | 1.8 |  |  |  |  |
| H08 | No | Given number pattern, what are the next three numbers? | 41 | 1.3 |  |  |  |  |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 25 | 1.8 |  |  |  |  |
| J05 | Yes | Determine common operation between four pairs of numbers. | 20 | 2.1 |  |  |  |  |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 31 | 2.3 |  |  |  |  |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 41 | 2.7 |  |  |  |  |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 44 | 2.4 |  |  |  |  |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 43 | 2.7 |  |  |  |  |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 43 | 2.0 |  |  |  |  |
| U04 | Yes | Explain operation used to find next number in a pattern. | 12 | 1.0 |  |  |  |  |



|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 69 | 1.6 | 67 | 2.1 | 72 | 2.0 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 74 | 2.0 | 73 | 2.6 | 74 | 2.3 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 65 | 1.8 | 59 | 2.4 | 70 | 2.4 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 59 | 2.4 | 58 | 3.2 | 60 | 2.8 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 70 | 2.6 | 65 | 4.0 | 77 | 3.8 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 43 | 3.3 | 41 | 4.9 | 45 | 4.7 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 31 | 3.8 | 31 | 4.9 | 31 | 4.5 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 42 | 3.5 | 42 | 4.3 | 42 | 4.5 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 79 | 3.0 | 79 | 4.1 | 78 | 3.8 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 59 | 3.3 | 56 | 4.9 | 61 | 4.3 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 31 | 3.1 | 29 | 3.5 | 33 | 4.0 |
| T01A | Yes | Read simple information from bar graph. | 63 | 2.6 | 65 | 3.0 | 61 | 3.7 |
| т01B | Yes | Read information from bar graph and add to find a total. | 33 | 2.7 | 35 | 3.5 | 31 | 3.3 |

*COUNTRY ID*=Latvia (LSS) SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 84 | 1.1 | 82 | 1.6 | 87 | 1.4 |
| A02 | No | Determine total number from ratio and one number. | 47 | 1.6 | 46 | 1.9 | 47 | 1.9 |
| B09 | No | What is the sum of 2.5 and 3.8? | 59 | 2.3 | 58 | 2.8 | 60 | 2.8 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 51 | 2.5 | 51 | 3.1 | 51 | 3.1 |
| D08 | No | Subtract: 4.03-1.15. | 64 | 2.2 | 61 | 2.8 | 67 | 2.8 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 43 | 2.5 | 45 | 3.4 | 42 | 3.2 |
| E04 | No | Which of the following numbers means 7/10? | 17 | 2.1 | 18 | 2.8 | 16 | 2.4 |
| F06 | No | Janis ate 1/2 cake, Maija ate 1/4, mother ate 1/4, how much remains? | 68 | 1.9 | 67 | 2.5 | 68 | 2.4 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 17 | 3.0 | 19 | 4.1 | 16 | 3.7 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 53 | 3.3 | 57 | 4.4 | 50 | 4.7 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 53 | 3.2 | 48 | 4.8 | 58 | 3.9 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 48 | 3.2 | 46 | 4.5 | 51 | 4.2 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 45 | 3.7 | 42 | 5.3 | 49 | 5.3 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 30 | 3.2 | 33 | 4.4 | 25 | 3.8 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 18 | 2.4 | 14 | 2.7 | 21 | 3.1 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 46 | 2.4 | 46 | 3.3 | 46 | 3.7 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 9 | 1.5 |  | 1.8 | 10 | 2.2 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 6 | 1.2 | 5 | 1.6 | 7 | 2.0 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 45 | 3.0 | 47 | 3.9 | 43 | 3.4 |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 60 | 2.5 | 65 | 3.3 | 55 | 3.2 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 47 | 2.7 | 48 | 3.3 | 46 | 3.8 |
| U03C | Yes | Solve two proportions and compare results. | 66 | 2.5 | 62 | 3.3 | 69 | 3.4 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 24 | 2.5 | 24 | 3.2 | 23 | 3.2 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 44 | 2.3 | 47 | 2.9 | 40 | 3.0 |
| D07 | No | Which two figures are congruent? | 92 | 0.9 | 90 | 1.4 | 95 | 1.0 |
| F09 | No | Which of the following must be true of a triangle? | 74 | 1.6 | 69 | 2.0 | 79 | 2.1 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 66 | 2.0 | 69 | 2.5 | 63 | 2.7 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 63 | 3.4 | 68 | 4.5 | 59 | 4.7 |
| I06 | Yes | Which of the following figures is made with straight sides only? | 88 | 2.2 | 87 | 3.0 | 89 | 3.0 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 89 | 2.1 | 85 | 3.2 | 93 | 2.5 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 62 | 3.8 | 63 | 4.2 | 62 | 5.0 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 56 | 3.5 | 56 | 4.8 | 57 | 4.1 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 75 | 3.1 | 71 | 3.8 | 79 | 4.2 |
| L03 | Yes | Shown "game board" graph, which object is located at (2,D)? | 85 | 2.1 | 84 | 3.2 | 86 | 2.8 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 32 | 2.8 | 29 | 3.3 | 35 | 4.4 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 42 | 3.4 | 39 | 4.8 | 46 | 4.8 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 60 | 2.9 | 53 | 4.1 | 67 | 3.4 |

ercent Correct on the Mathematics Items - Fourth Grade

## Fourth Grade

| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 92 | 0.7 | 92 | 0.9 | 92 | 0.8 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 36 | 1.9 | 37 | 2.7 | 35 | 2.3 |
| C02 | No | Find volume of a stack of 5 cubes. | 76 | 1.6 | 76 | 2.4 | 76 | 2.1 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 66 | 2.1 | 65 | 2.9 | 66 | 2.7 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 71 | 1.7 | 67 | 2.3 | 75 | 2.1 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 55 | 2.0 | 56 | 2.9 | 55 | 2.7 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 71 | 2.0 | 71 | 2.6 | 71 | 2.7 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 75 | 2.0 | 74 | 2.8 | 76 | 2.4 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 77 | 2.7 | 75 | 3.7 | 79 | 4.0 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 39 | 3.3 | 37 | 4.7 | 41 | 5.2 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 85 | 2.7 | 87 | 3.1 | 83 | 3.6 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 24 | 3.1 | 23 | 4.0 | 24 | 4.4 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 57 | 3.3 | 56 | 4.8 | 57 | 3.8 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 48 | 3.6 | 51 | 4.7 | 45 | 5.1 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 42 | 3.0 | 40 | 4.9 | 45 | 3.9 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 37 | 2.1 | 35 | 3.3 | 38 | 3.2 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 59 | 2.4 | 67 | 3.2 | 52 | 3.6 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 40 | 2.9 | 37 | 3.7 | 44 | 3.8 |
| v05 | Yes | How many millimeters are in a meter? | 65 | 2.2 | 64 | 3.3 | 66 | 3.1 |

# Fourth Grade 

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 52 | 2.1 | 51 | 2.9 | 54 | 2.5 |
| H08 | No | Given number pattern, what are the next three numbers? | 69 | 1.9 | 65 | 2.8 | 73 | 2.3 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 72 | 2.7 | 70 | 4.3 | 74 | 4.0 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 53 | 3.4 | 52 | 4.6 | 55 | 4.6 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 53 | 3.3 | 56 | 4.8 | 50 | 5.3 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 72 | 3.0 | 72 | 4.2 | 72 | 4.3 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 82 | 2.7 | 79 | 4.0 | 86 | 3.4 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 50 | 3.3 | 49 | 4.7 | 51 | 4.7 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 79 | 3.1 | 76 | 4.8 | 83 | 3.4 |
| U04 | Yes | Explain operation used to find next number in a pattern. | 70 | 2.5 | 70 | 3.4 | 71 | 3.3 |



|  |  |  | Overal |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 76 | 1.6 | 73 | 2.1 | 79 | 2.1 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 95 | 0.8 | 95 | 1.3 | 95 | 1.1 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 91 | 1.1 | 89 | 1.6 | 92 | 1.4 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 84 | 1.4 | 85 | 2.3 | 85 | 1.6 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 88 | 2.1 | 92 | 2.1 | 84 | 3.2 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 70 | 2.9 | 71 | 3.5 | 70 | 3.9 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 63 | 3.2 | 61 | 4.2 | 64 | 4.5 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 74 | 2.6 | 78 | 2.6 | 71 | 3.9 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 86 | 2.4 | 91 | 2.7 | 80 | 3.5 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 69 | 3.0 | 69 | 4.0 | 69 | 4.2 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 42 | 2.8 | 42 | 3.9 | 43 | 3.5 |
| T01A | Yes | Read simple information from bar graph. | 94 | 1.2 | 94 | 1.6 | 93 | 1.5 |
| T01B | Yes | Read information from bar graph and add to find a total. | 56 | 2.5 | 54 | 3.1 | 58 | 3.4 |

*COUNTRY ID*=Netherlands SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 97 | 0.5 | 97 | 0.6 | 97 | 0.6 |
| A02 | No | Determine total number from ratio and one number. | 83 | 1.0 | 83 | 1.1 | 82 | 1.2 |
| B09 | No | What is the sum of 2.5 and 3.8? | 75 | 1.6 | 77 | 1.9 | 73 | 2.2 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 65 | 2.4 | 67 | 2.9 | 63 | 2.7 |
| D08 | No | Subtract: 4.03-1.15. | 82 | 1.6 | 83 | 1.9 | 81 | 2.1 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 65 | 2.0 | 67 | 2.8 | 64 | 2.6 |
| E04 | No | Which of the following numbers means 7/10? | 35 | 1.9 | 36 | 2.4 | 33 | 2.9 |
| F06 | No | Janis ate 1/2 cake, Maija ate 1/4, mother ate 1/4, how much remains? | 64 | 2.1 | 65 | 2.5 | 64 | 2.3 |
| G01 | No | Given map and legend, how far apart are two cities? | 55 | 1.9 | 60 | 2.8 | 50 | 2.6 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 29 | 3.3 | 32 | 4.4 | 28 | 4.8 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 67 | 3.2 | 69 | 4.1 | 65 | 4.8 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 59 | 3.2 | 62 | 4.0 | 56 | 4.8 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 70 | 2.9 | 73 | 4.6 | 68 | 4.3 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 51 | 3.2 | 49 | 4.2 | 54 | 4.5 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 32 | 2.7 | 37 | 3.9 | 27 | 4.0 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 28 | 2.2 | 26 | 2.8 | 31 | 3.0 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 73 | 2.4 | 76 | 3.1 | 70 | 3.0 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 38 | 2.3 | 37 | 3.0 | 40 | 3.6 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 24 | 2.1 | 23 | 3.1 | 24 | 2.5 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 50 | 2.3 | 48 | 2.9 | 51 | 3.6 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 81 | 2.0 | 83 | 2.8 | 78 | 2.7 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 62 | 2.5 | 66 | 3.5 | 59 | 3.0 |
| U03C | Yes | Solve two proportions and compare results. | 90 | 1.8 | 91 | 2.0 | 87 | 2.6 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 56 | 3.4 | 58 | 3.7 | 55 | 4.2 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 57 | 1.5 | 62 | 2.0 | 52 | 2.2 |
| D07 | No | Which two figures are congruent? | 92 | 0.9 | 93 | 1.3 | 91 | 1.2 |
| F09 | No | Which of the following must be true of a triangle? | 80 | 1.2 | 81 | 1.5 | 79 | 1.9 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 46 | 1.8 | 52 | 2.6 | 41 | 2.7 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 63 | 3.2 | 72 | 4.2 | 56 | 5.0 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 88 | 2.2 | 89 | 2.5 | 89 | 3.3 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 94 | 1.5 | 95 | 2.1 | 93 | 2.9 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 40 | 3.4 | 41 | 4.6 | 40 | 4.2 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 70 | 2.3 | 68 | 3.4 | 73 | 3.4 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 89 | 2.0 | 88 | 2.7 | 91 | 2.3 |
| L03 | Yes | Shown "game board" graph, which object is located at (2,D)? | 97 | 1.1 | 97 | 2.0 | 98 | 1.2 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 55 | 2.9 | 62 | 3.8 | 49 | 4.1 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 50 | 3.1 | 55 | 4.7 | 45 | 4.1 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 71 | 2.5 | 71 | 3.1 | 71 | 3.6 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 84 | 1.0 | 86 | 1.3 | 82 | 1.2 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 58 | 1.9 | 60 | 2.1 | 57 | 2.4 |
| C02 | No | Find volume of a stack of 5 cubes. | 85 | 1.1 | 88 | 1.3 | 81 | 1.8 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 76 | 1.7 | 83 | 1.9 | 69 | 2.6 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 81 | 1.7 | 83 | 1.9 | 79 | 2.3 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 79 | 1.5 | 82 | 2.1 | 76 | 2.3 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 86 | 1.3 | 91 | 1.6 | 81 | 2.0 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 89 | 1.2 | 91 | 1.5 | 87 | 1.5 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 46 | 2.4 | 47 | 3.2 | 45 | 3.1 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 92 | 1.7 | 95 | 1.6 | 90 | 2.7 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 66 | 3.2 | 75 | 3.4 | 60 | 4.6 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 77 | 2.6 | 82 | 3.2 | 72 | 4.0 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 35 | 3.6 | 32 | 4.3 | 39 | 4.9 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 71 | 3.0 | 71 | 3.8 | 70 | 4.3 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 61 | 3.0 | 60 | 4.3 | 62 | 4.8 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 27 | 2.9 | 28 | 4.2 | 27 | 3.7 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 61 | 2.1 | 60 | 3.3 | 63 | 3.1 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 72 | 2.2 | 79 | 2.1 | 64 | 3.6 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 76 | 1.7 | 71 | 2.7 | 81 | 2.2 |
| v05 | Yes | How many millimeters are in a meter? | 57 | 2.8 | 65 | 3.5 | 49 | 3.3 |

*COUNTRY ID*=Netherlands SCALE=Patterns, Relations and Functions

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 60 | 1.8 | 56 | 2.1 | 63 | 2.9 |
| H08 | No | Given number pattern, what are the next three numbers? | 60 | 2.0 | 57 | 2.6 | 62 | 2.6 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 75 | 2.3 | 75 | 3.7 | 76 | 3.9 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 41 | 3.2 | 42 | 4.0 | 41 | 4.9 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 36 | 2.8 | 39 | 3.5 | 34 | 4.0 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 83 | 2.1 | 81 | 3.0 | 86 | 2.9 |
| L0 4 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 84 | 2.3 | 80 | 3.6 | 87 | 2.6 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 66 | 2.8 | 67 | 4.0 | 65 | 4.3 |
| M09 | Yes | 4 x _ <17: Which number could go in the blank to make the sentence true? | 70 | 2.9 | 75 | 2.8 | 65 | 4.5 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 77 | 1.9 | 75 | 2.0 | 79 | 2.9 |

Fercent Correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 70 | 1.3 | 70 | 1.6 | 71 | 1.6 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 87 | 0.8 | 87 | 1.2 | 87 | 1.1 |
| B08 | No | Which addition expression has the same value as 342? | 95 | 0.9 | 96 | 0.9 | 95 | 1.2 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 95 | 0.8 | 97 | 1.0 | 94 | 1.2 |
| E02 | No | Which digit is in the hundreds place in 2345? | 83 | 1.6 | 87 | 1.7 | 80 | 2.3 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 80 | 1.7 | 79 | 2.5 | 80 | 1.8 |
| G03 | No | Which of the following is a name for 9740? | 94 | 0.9 | 94 | 1.1 | 95 | 1.0 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 58 | 2.8 | 61 | 3.1 | 55 | 3.3 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 80 | 1.5 | 82 | 2.3 | 78 | 1.9 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 70 | 3.2 | 69 | 4.7 | 72 | 4.0 |
| 104 | Yes | What is 3 times 23? | 98 | 1.1 | 98 | 1.3 | 97 | 1.7 |
| 109 | Yes | Subtract: 6000-2369. | 86 | 2.0 | 87 | 2.9 | 85 | 3.1 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 60 | 3.0 | 67 | 4.4 | 53 | 4.2 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 92 | 1.6 | 93 | 2.5 | 91 | 2.5 |
| K02 | Yes | Add: 6971 + 5291 | 90 | 1.6 | 90 | 2.1 | 90 | 2.7 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 65 | 3.3 | 66 | 3.8 | 63 | 4.6 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x _ is the same as what? | 66 | 2.7 | 68 | 3.8 | 65 | 4.1 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 84 | 2.5 | 87 | 2.8 | 81 | 3.4 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 93 | 1.7 | 96 | 1.8 | 91 | 2.5 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 83 | 1.9 | 85 | 2.3 | 82 | 2.5 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 43 | 2.4 | 46 | 3.2 | 40 | 3.4 |
| U05 | Yes | Write addition fact as a multiplication fact. | 85 | 1.5 | 83 | 2.1 | 86 | 1.8 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 55 | 2.5 | 57 | 3.4 | 54 | 3.5 |
| V03 | Yes | What is 5 less than 203? | 67 | 2.6 | 70 | 3.3 | 64 | 3.4 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 22 | 1.8 | 19 | 2.5 | 26 | 2.5 |
| v04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 62 | 2.3 | 59 | 3.5 | 64 | 3.0 |

*COUNTRY ID*=New Zealand SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 66 | 1.6 | 57 | 2.4 | 74 | 1.9 |
| C 01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 90 | 1.2 | 89 | 1.8 | 90 | 1.4 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 84 | 1.7 | 80 | 2.4 | 88 | 1.8 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 73 | 2.1 | 71 | 2.6 | 74 | 2.2 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 73 | 3.0 | 71 | 4.3 | 74 | 4.1 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 49 | 3.4 | 52 | 4.8 | 46 | 4.3 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 45 | 3.3 | 43 | 4.5 | 46 | 4.4 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 55 | 3.6 | 52 | 4.6 | 59 | 4.5 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 74 | 2.8 | 70 | 4.1 | 78 | 3.7 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 38 | 2.9 | 33 | 3.9 | 42 | 4.1 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 48 | 2.8 | 43 | 3.7 | 54 | 3.6 |
| T01A | Yes | Read simple information from bar graph. | 77 | 2.2 | 77 | 3.1 | 78 | 2.7 |
| T01B | Yes | Read information from bar graph and add to find a total. | 30 | 2.6 | 27 | 3.4 | 33 | 3.3 |

*COUNTRY ID*=New Zealand SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 80 | 1.3 | 80 | 1.8 | 81 | 1.4 |
| A02 | No | Determine total number from ratio and one number. | 58 | 1.4 | 57 | 1.9 | 59 | 1.6 |
| B09 | No | What is the sum of 2.5 and 3.8? | 43 | 2.0 | 42 | 2.6 | 44 | 2.4 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 47 | 2.4 | 50 | 3.3 | 45 | 2.9 |
| D08 | No | Subtract: 4.03-1.15. | 26 | 2.1 | 25 | 2.7 | 26 | 2.6 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 47 | 2.1 | 44 | 2.8 | 49 | 2.5 |
| E04 | No | Which of the following numbers means 7/10? | 32 | 2.3 | 32 | 2.9 | 33 | 2.8 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 69 | 2.0 | 68 | 2.8 | 70 | 2.5 |
| G01 | No | Given map and legend, how far apart are two cities? | 38 | 1.9 | 43 | 2.5 | 33 | 2.8 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 20 | 2.5 | 23 | 4.3 | 16 | 3.1 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 48 | 3.6 | 45 | 4.7 | 51 | 4.7 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 50 | 3.8 | 50 | 5.2 | 51 | 4.9 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 50 | 3.5 | 49 | 4.9 | 51 | 4.7 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 33 | 3.3 | 34 | 4.9 | 32 | 4.2 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 25 | 2.7 | 22 | 3.5 | 28 | 4.0 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 13 | 1.9 | 11 | 2.0 | 16 | 2.8 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 47 | 2.6 | 48 | 3.9 | 46 | 3.0 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 25 | 2.5 | 18 | 2.8 | 31 | 3.4 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 15 | 1.6 | 13 | 1.9 | 17 | 2.6 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 51 | 2.6 | 48 | 3.9 | 55 | 2.8 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 60 | 2.4 | 65 | 3.0 | 56 | 3.4 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 36 | 2.4 | 40 | 3.3 | 33 | 3.1 |
| U03C | Yes | Solve two proportions and compare results. | 75 | 2.0 | 71 | 2.9 | 80 | 2.3 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 16 | 1.7 | 19 | 2.6 | 14 | 1.9 |



| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 77 | 0.9 | 76 | 1.6 | 78 | 1.1 |
| B07 | No | Word problem: best estimate of 84 x 57. | 37 | 1.5 | 36 | 2.3 | 37 | 2.4 |
| C02 |  | Find volume of a stack of 5 cubes. | 53 | 2.1 | 54 | 3.1 | 53 | 2.7 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 43 | 1.8 | 44 | 2.7 | 41 | 2.3 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 71 | 1.6 | 69 | 2.3 | 73 | 2.2 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 69 | 1.8 | 70 | 2.6 | 68 | 2.7 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 56 | 1.9 | 57 | 2.8 | 55 | 2.7 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 68 | 2.0 | 67 | 2.8 | 69 | 2.8 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 37 | 1.9 | 37 | 2.9 | 36 | 2.5 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 58 | 3.3 | 61 | 4.4 | 55 | 4.6 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 42 | 3.3 | 41 | 4.3 | 44 | 4.6 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 71 | 2.9 | 66 | 4.8 | 76 | 3.4 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 23 | 2.3 | 24 | 3.7 | 21 | 3.5 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 42 | 2.8 | 42 | 4.2 | 42 | 4.0 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 21 | 2.6 | 24 | 3.7 | 19 | 3.6 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 35 | 3.6 | 36 | 3.9 | 34 | 5.2 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 45 | 2.5 | 42 | 3.8 | 47 | 3.1 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 45 | 2.6 | 46 | 3.5 | 45 | 3.5 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 37 | 2.2 | 32 | 2.9 | 41 | 2.9 |
| V05 | Yes | How many millimeters are in a meter? | 43 | 2.8 | 44 | 3.7 | 41 | 3.7 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 46 | 1.9 | 46 | 2.5 | 45 | 2.6 |
| H08 | No | Given number pattern, what are the next three numbers? | 74 | 1.7 | 69 | 2.6 | 78 | 2.4 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 48 | 3.6 | 42 | 5.1 | 54 | 4.8 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 27 | 2.9 | 22 | 3.4 | 32 | 4.2 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 42 | 3.6 | 39 | 4.7 | 44 | 4.4 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 49 | 3.1 | 41 | 4.6 | 56 | 3.7 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 71 | 2.6 | 65 | 3.9 | 78 | 3.8 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 64 | 2.9 | 64 | 4.2 | 65 | 4.4 |
| M09 | Yes | $4 \mathrm{x}-<17$ : Which number could go in the blank to make the sentence true? | 57 | 2.9 | 64 | 4.1 | 51 | 4.1 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 48 | 2.3 | 50 | 3.3 | 45 | 3.0 |

*COUNTRY ID*=New Zealand SCALE=Whole Numbers

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 45 | 1.2 | 41 | 1.7 | 49 | 1.6 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 77 | 1.0 | 80 | 1.4 | 73 | 1.6 |
| B08 | No | Which addition expression has the same value as 342 ? | 78 | 1.3 | 75 | 2.2 | 80 | 2.1 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 68 | 1.9 | 68 | 2.7 | 68 | 2.8 |
| E02 | No | Which digit is in the hundreds place in 2345? | 73 | 2.3 | 71 | 3.0 | 75 | 2.8 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 58 | 1.8 | 60 | 2.7 | 56 | 2.2 |
| G03 | No | Which of the following is a name for 9740? | 85 | 1.5 | 84 | 2.0 | 86 | 2.3 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 60 | 2.1 | 57 | 2.7 | 63 | 3.3 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 67 | 1.8 | 65 | 2.6 | 69 | 2.5 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 47 | 3.6 | 47 | 4.9 | 46 | 5.1 |
| 104 | Yes | What is 3 times 23? | 78 | 3.0 | 75 | 3.9 | 82 | 3.5 |
| 109 | Yes | Subtract: 6000-2369. | 30 | 3.6 | 30 | 4.6 | 30 | 4.7 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 28 | 3.0 | 31 | 4.2 | 25 | 4.1 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 73 | 3.3 | 70 | 4.4 | 76 | 4.0 |
| K02 | Yes | Add: $6971+5291$ | 69 | 3.0 | 66 | 4.5 | 72 | 3.8 |
| L07 | Yes | In which of the following pairs of numbers is the 2nd number 100 more than the 1st? | 33 | 3.3 | 36 | 4.5 | 29 | 4.2 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 59 | 3.5 | 55 | 4.5 | 63 | 4.6 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 65 | 3.3 | 68 | 4.4 | 63 | 4.6 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 83 | 2.6 | 79 | 4.1 | 86 | 3.1 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 49 | 2.3 | 45 | 3.1 | 52 | 3.1 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 39 | 2.3 | 35 | 2.7 | 44 | 3.3 |
| U05 | Yes | Write addition fact as a multiplication fact. | 67 | 2.5 | 67 | 3.5 | 67 | 2.9 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 32 | 2.0 | 40 | 3.1 | 25 | 2.5 |
| v03 | Yes | What is 5 less than 203? | 51 | 2.7 | 58 | 3.6 | 44 | 3.2 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 13 | 1.7 | 12 | 2.4 | 13 | 2.1 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 42 | 2.3 | 44 | 3.4 | 40 | 3.0 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Norway SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 66 | 1.5 | 63 | 2.0 | 69 | 2.3 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 88 | 1.2 | 88 | 1.6 | 89 | 1.8 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 83 | 1.6 | 82 | 2.2 | 85 | 2.1 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 75 | 1.7 | 73 | 2.2 | 77 | 2.5 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 80 | 2.3 | 80 | 2.9 | 81 | 3.9 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 38 | 2.9 | 41 | 4.6 | 34 | 3.8 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 40 | 3.2 | 43 | 4.3 | 37 | 4.4 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 58 | 3.1 | 56 | 4.6 | 59 | 4.3 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 86 | 2.3 | 87 | 2.9 | 85 | 3.7 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 48 | 3.2 | 44 | 4.6 | 50 | 4.5 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 26 | 2.5 | 28 | 3.7 | 24 | 3.1 |
| T01A | Yes | Read simple information from bar graph. | 79 | 1.8 | 78 | 2.5 | 82 | 2.4 |
| т01B | Yes | Read information from bar graph and add to find a total. | 28 | 1.9 | 24 | 2.5 | 34 | 2.8 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Norway SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 93 | 0.6 | 93 | 0.8 | 93 | 0.9 |
| A02 | No | Determine total number from ratio and one number. | 49 | 1.3 | 48 | 1.6 | 49 | 2.0 |
| B09 | No | What is the sum of 2.5 and 3.8? | 47 | 1.7 | 53 | 2.3 | 41 | 2.5 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 24 | 1.8 | 25 | 2.4 | 24 | 2.3 |
| D08 | No | Subtract: 4.03-1.15. | 51 | 2.6 | 47 | 3.1 | 55 | 3.4 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 49 | 1.7 | 51 | 2.5 | 46 | 2.5 |
| E04 | No | Which of the following numbers means 7/10? | 15 | 1.6 | 17 | 2.4 | 12 | 2.0 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 53 | 2.0 | 52 | 2.6 | 54 | 2.7 |
| G01 | No | Given map and legend, how far apart are two cities? | 45 | 1.6 | 50 | 2.5 | 39 | 2.7 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 14 | 2.4 | 16 | 3.2 | 11 | 3.6 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 51 | 3.0 | 56 | 4.4 | 48 | 5.3 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 55 | 3.1 | 51 | 4.5 | 61 | 4.0 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 25 | 2.8 | 25 | 3.6 | 24 | 3.9 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 12 | 1.9 | 14 | 2.8 | 10 | 2.8 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 19 | 2.4 | 25 | 3.8 | 15 | 3.3 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 19 | 1.8 | 18 | 2.7 | 19 | 2.5 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 27 | 2.3 | 27 | 2.9 | 27 | 3.3 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 24 | 2.1 | 21 | 2.4 | 27 | 3.2 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 15 | 1.7 | 14 | 2.4 | 17 | 2.7 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 38 | 2.6 | 39 | 3.1 | 38 | 3.5 |
| U03A | Yes | Solve word problem using proportions: $3 / 10=9 / ?$ | 61 | 2.6 | 66 | 3.4 | 54 | 3.7 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 43 | 2.2 | 46 | 3.2 | 37 | 3.2 |
| U03C | Yes | Solve two proportions and compare results. | 73 | 2.2 | 76 | 2.8 | 70 | 3.5 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 16 | 1.8 | 17 | 2.3 | 16 | 2.4 |


|  |  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL |  | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which | of these solids has both a flat surface and a curved surface? | 34 | 1.8 | 37 | 2.5 | 31 | 2.3 |
| D07 | No | Which | two figures are congruent? | 86 | 1.4 | 87 | 2.0 | 85 | 2.0 |
| F09 | No | Which | of the following must be true of a triangle? | 73 | 1.4 | 68 | 2.2 | 77 | 2.0 |
| H05 | No | Shown | diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 63 | 2.0 | 61 | 2.6 | 66 | 2.6 |
| 101 | Yes | Shown | map with city blocks, and given directions to school, locate school on map. | 60 | 3.2 | 65 | 4.4 | 54 | 4.4 |
| 106 | Yes | Which | of the following figures is made with straight sides only? | 81 | 2.8 | 82 | 3.8 | 82 | 3.9 |
| J01 | Yes | Shown | hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 78 | 2.8 | 79 | 3.8 | 77 | 3.8 |
| J02 | Yes | Shown | several drawings with a line through each, which does not show a line of symmetry? | 29 | 2.8 | 32 | 3.4 | 26 | 4.2 |
| K01 | Yes | Shown | figure with overlapping shapes, which number is in square and circle, but not in triangle? | 59 | 3.4 | 60 | 4.8 | 57 | 4.3 |
| K08 | Yes | Which | of the following rectangles is not divided into 4 equal parts? | 63 | 2.8 | 59 | 4.2 | 67 | 3.7 |
| L03 | Yes | Shown | "game board" graph, which object is located at ( $2, \mathrm{D}$ )? | 88 | 2.1 | 88 | 3.1 | 89 | 2.8 |
| L05 | Yes | Shown | diagram of cube with one edge labeled, how many edges does the cube have? | 8 | 1.7 |  | 2.1 | 11 |  |
| M04 | Yes | Given | explanation of how grid works, give the coordinates of a particular point. | 41 | 3.5 | 38 | 4.9 | 43 | 4.9 |
| T05 | Yes | Shown | picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 43 | 2.7 | 39 | 3.5 | 48 | 3.7 |

*COUNTRY ID*=Norway SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 74 | 1.2 | 75 | 1.4 | 73 | 1.7 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 35 | 1.5 | 35 | 2.4 | 34 | 2.3 |
| C02 | No | Find volume of a stack of 5 cubes. | 51 | 1.9 | 52 | 2.5 | 50 | 2.7 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 65 | 1.6 | 69 | 2.4 | 58 | 2.6 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 70 | 1.6 | 70 | 2.2 | 71 | 2.5 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 63 | 2.1 | 66 | 2.6 | 57 | 3.0 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 68 | 1.6 | 70 | 2.0 | 66 | 2.5 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 90 | 1.3 | 91 | 1.5 | 88 | 2.0 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 57 | 2.2 | 56 | 2.8 | 59 | 3.5 |
| J06 |  | Which of the following weight (mass) measures is the largest? | 74 | 3.1 | 78 | 3.9 | 68 | 4.8 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 40 | 2.9 | 42 | 4.4 | 39 | 4.5 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 79 | 2.4 | 79 | 3.0 | 79 | 3.1 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 19 | 2.2 | 15 | 3.1 | 24 | 3.8 |
| L0 6 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 49 | 3.1 | 49 | 4.2 | 48 | 4.6 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 35 | 3.6 | 37 | 4.7 | 33 | 4.8 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 24 | 2.1 | 27 | 3.8 | 22 | 3.0 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 60 | 2.2 | 61 | 2.9 | 58 | 3.7 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 60 | 2.2 | 62 | 3.0 | 56 | 3.5 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 52 | 2.5 | 53 | 3.4 | 52 | 3.3 |
| v05 | Yes | How many millimeters are in a meter? | 43 | 2.1 | 48 | 2.9 | 38 | 3.2 |

# Fourth Grade 

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 40 | 1.7 | 43 | 2.4 | 36 | 2.8 |
| H08 | No | Given number pattern, what are the next three numbers? | 49 | 2.0 | 44 | 2.2 | 53 | 3.3 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 49 | 3.1 | 45 | 4.4 | 53 | 4.2 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 30 | 3.5 | 29 | 4.6 | 32 | 4.4 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 46 | 3.5 | 44 | 4.8 | 48 | 4.3 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 49 | 3.4 | 49 | 4.3 | 47 | 4.9 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 65 | 3.0 | 59 | 4.3 | 70 | 4.2 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 66 | 3.2 | 67 | 4.4 | 65 | 4.4 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 63 | 3.3 | 65 | 4.2 | 61 | 4.3 |
| U04 | Yes | Explain operation used to find next number in a pattern. | 46 | 2.2 | 46 | 3.3 | 47 | 3.5 |

*COUNTRY ID*=Norway SCALE=Whole Numbers

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 41 | 1.2 | 43 | 1.7 | 40 | 2.1 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 85 | 1.1 | 84 | 1.4 | 85 | 1.4 |
| B08 | No | Which addition expression has the same value as 342 ? | 88 | 1.0 | 89 | 1.6 | 88 | 1.5 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 73 | 1.6 | 72 | 2.3 | 74 | 2.2 |
| E02 | No | Which digit is in the hundreds place in 2345? | 75 | 1.7 | 77 | 2.4 | 73 | 2.3 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 65 | 1.6 | 66 | 2.6 | 64 | 2.3 |
| G03 | No | Which of the following is a name for 9740? | 92 | 1.1 | 91 | 1.5 | 93 | 1.7 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 81 | 1.6 | 81 | 2.4 | 81 | 2.0 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 74 | 1.7 | 75 | 2.5 | 71 | 2.4 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 43 | 3.2 | 43 | 4.6 | 43 | 4.4 |
| 104 | Yes | What is 3 times 23? | 82 | 2.6 | 83 | 3.1 | 80 | 4.2 |
| 109 | Yes | Subtract: 6000-2369. | 60 | 3.7 | 57 | 4.7 | 63 | 4.9 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 38 | 2.8 | 41 | 3.5 | 37 | 4.6 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 68 | 2.8 | 67 | 3.6 | 68 | 4.3 |
| K02 | Yes | Add: 6971 + 5291 | 76 | 2.7 | 70 | 4.1 | 85 | 3.1 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 35 | 2.9 | 39 | 4.5 | 31 | 4.2 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 64 | 3.0 | 62 | 4.5 | 67 | 4.2 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 68 | 2.9 | 75 | 3.1 | 62 | 4.6 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 87 | 1.8 | 84 | 3.1 | 88 | 2.5 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 45 | 2.2 | 50 | 3.0 | 40 | 3.6 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 29 | 2.2 | 27 | 2.7 | 29 | 3.4 |
| U05 | Yes | Write addition fact as a multiplication fact. | 66 | 2.5 | 65 | 3.1 | 66 | 4.0 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 45 | 2.5 | 54 | 3.2 | 36 | 3.6 |
| V03 | Yes | What is 5 less than 203? | 64 | 2.8 | 68 | 3.3 | 59 | 4.0 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 6 | 1.1 | 5 | 1.5 | 7 | 1.7 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 41 | 2.8 | 38 | 3.1 | 43 | 3.8 |

*COUNTRY ID*=Portugal SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 44 | 1.8 | 44 | 2.3 | 44 | 2.5 |
| C 01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 67 | 2.0 | 65 | 2.4 | 69 | 2.7 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 66 | 1.8 | 66 | 2.6 | 67 | 2.3 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 47 | 1.7 | 48 | 2.4 | 45 | 2.5 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 70 | 2.7 | 67 | 3.3 | 73 | 3.3 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 34 | 2.8 | 37 | 3.4 | 31 | 3.6 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 22 | 2.7 | 24 | 3.3 | 21 | 3.8 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 30 | 2.4 | 32 | 3.4 | 29 | 3.6 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 62 | 2.7 | 67 | 3.8 | 57 | 3.7 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 47 | 2.6 | 46 | 3.9 | 48 | 3.8 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 13 | 1.3 | 12 | 1.6 | 15 | 2.3 |
| T01A | Yes | Read simple information from bar graph. | 57 | 2.5 | 59 | 3.1 | 55 | 2.9 |
| т01B | Yes | Read information from bar graph and add to find a total. | 26 | 2.0 | 24 | 2.7 | 28 | 2.7 |

fercent correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 81 | 1.0 | 82 | 1.2 | 79 | 1.3 |
| A02 | No | Determine total number from ratio and one number. | 30 | 1.4 | 28 | 1.5 | 33 | 1.7 |
| B09 | No | What is the sum of 2.5 and 3.8? | 77 | 1.5 | 75 | 2.0 | 79 | 1.8 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 20 | 1.8 | 17 | 2.0 | 24 | 2.6 |
| D08 | No | Subtract: 4.03-1.15. | 66 | 1.9 | 64 | 2.3 | 68 | 2.4 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 36 | 1.9 | 38 | 2.3 | 35 | 2.5 |
| E04 | No | Which of the following numbers means 7/10? | 33 | 2.2 | 33 | 2.6 | 33 | 2.6 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 58 | 1.6 | 57 | 2.2 | 60 | 2.4 |
| G01 | No | Given map and legend, how far apart are two cities? | 29 | 1.6 | 33 | 2.2 | 24 | 2.0 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 90 | 1.7 | 91 | 2.4 | 90 | 2.4 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 42 | 3.2 | 44 | 3.9 | 40 | 4.2 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 42 | 2.7 | 43 | 3.8 | 42 | 3.6 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 16 | 2.3 | 16 | 3.1 | 15 | 3.1 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 26 | 2.6 | 27 | 3.8 | 25 | 3.2 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 71 | 2.7 | 67 | 4.0 | 74 | 3.5 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 15 | 1.3 | 12 | 1.5 | 18 | 2.1 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 25 | 1.7 | 26 | 2.5 | 24 | 2.3 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 9 | 1.1 | 9 | 1.6 | 9 | 1.5 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 3 | 0.6 | 3 | 0.8 | 2 | 0.8 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 28 | 2.1 | 29 | 2.7 | 28 | 2.8 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 46 | 2.2 | 46 | 2.9 | 45 | 2.7 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 25 | 2.2 | 28 | 2.7 | 22 | 2.4 |
| U03C | Yes | Solve two proportions and compare results. | 62 | 2.0 | 63 | 2.5 | 60 | 2.6 |
| v01 | Yes | Is $1 / 3$ less than $1 / 4$ ? Shade appropriate parts of a circle to demonstrate. | 6 | 1.1 | 6 | 1.6 | 5 | 1.3 |


| ITEM | REL |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 72 | 1.4 | 74 | 1.9 | 70 | 2.2 |
| D07 | No | Which two figures are congruent? | 77 | 1.6 | 80 | 2.1 | 75 | 2.0 |
| F09 | No | Which of the following must be true of a triangle? | 71 | 1.6 | 67 | 2.3 | 76 | 1.7 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 33 | 1.7 | 35 | 2.1 | 31 | 2.2 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 34 | 2.7 | 39 | 3.9 | 30 | 3.9 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 41 | 3.0 | 49 | 4.2 | 33 | 3.7 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 84 | 2.2 | 83 | 3.2 | 85 | 3.1 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 37 | 2.8 | 34 | 3.6 | 40 | 4.5 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 58 | 2.7 | 54 | 4.2 | 61 | 3.8 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 49 | 2.8 | 46 | 3.8 | 52 | 3.4 |
| L03 | Yes | Shown "game board" graph, which object is located at (2,D)? | 69 | 2.3 | 67 | 3.7 | 72 | 3.8 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 62 | 2.6 | 61 | 3.8 | 63 | 3.6 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 17 | 2.2 | 18 | 3.0 | 16 | 3.2 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 26 | 2.2 | 26 | 2.8 | 26 | 3.0 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Portugal SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 83 | 0.9 | 83 | 1.2 | 83 | 1.3 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 34 | 1.6 | 35 | 1.9 | 34 | 2.2 |
| C02 | No | Find volume of a stack of 5 cubes. | 61 | 1.6 | 64 | 2.5 | 58 | 2.0 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 49 | 1.5 | 53 | 2.2 | 45 | 2.2 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 50 | 1.8 | 49 | 2.2 | 51 | 2.4 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 55 | 2.1 | 59 | 2.7 | 51 | 2.6 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 61 | 1.7 | 61 | 2.3 | 62 | 2.4 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 72 | 1.7 | 74 | 2.5 | 70 | 2.1 |
| H06 | No | Shown $6 \times 4$ rectangle, which of the following expressions gives the perimeter of the rectangle? | 61 | 1.9 | 61 | 2.4 | 62 | 2.7 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 79 | 2.2 | 75 | 3.1 | 84 | 3.1 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 34 | 3.0 | 35 | 3.8 | 33 | 4.4 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 66 | 3.3 | 67 | 4.0 | 65 | 4.3 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 18 | 2.2 | 22 | 3.4 | 15 | 2.8 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 43 | 2.4 | 41 | 3.7 | 44 | 3.7 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 27 | 2.5 | 29 | 3.7 | 26 | 3.5 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 45 | 3.1 | 45 | 4.2 | 45 | 4.8 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 29 | 2.0 | 29 | 2.5 | 29 | 2.8 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 16 | 1.7 | 19 | 2.0 | 13 | 2.2 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 43 | 2.1 | 43 | 3.3 | 42 | 2.4 |
| V05 | Yes | How many millimeters are in a meter? | 54 | 2.2 | 54 | 3.0 | 55 | 2.8 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 42 | 1.9 | 42 | 2.2 | 41 | 2.5 |
| H08 | No | Given number pattern, what are the next three numbers? | 47 | 1.7 | 48 | 2.4 | 45 | 2.2 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 47 | 3.1 | 51 | 4.1 | 43 | 4.5 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 32 | 2.6 | 30 | 3.2 | 36 | 3.6 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 40 | 2.7 | 45 | 3.8 | 35 | 3.8 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 56 | 3.0 | 64 | 4.3 | 49 | 3.8 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 58 | 3.0 | 56 | 3.9 | 60 | 3.9 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 54 | 2.8 | 53 | 3.8 | 56 | 3.8 |
| M09 | Yes | $4 \mathrm{x}-<17$ : Which number could go in the blank to make the sentence true? | 65 | 3.1 | 66 | 3.8 | 63 | 4.1 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 30 | 2.3 | 31 | 2.9 | 29 | 2. |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 71 | 1.3 | 71 | 1.5 | 71 | 1.6 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 70 | 1.3 | 71 | 1.6 | 68 | 1.8 |
| B08 | No | Which addition expression has the same value as 342? | 79 | 1.4 | 79 | 1.9 | 80 | 1.9 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 70 | 1.8 | 72 | 1.8 | 67 | 2.6 |
| E02 | No | Which digit is in the hundreds place in 2345? | 71 | 1.5 | 70 | 2.0 | 73 | 2.3 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 43 | 1.7 | 43 | 2.5 | 44 | 2.2 |
| G03 | No | Which of the following is a name for 9740? | 88 | 1.0 | 90 | 1.4 | 86 | 1.4 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 60 | 1.7 | 60 | 2.2 | 60 | 2.2 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 45 | 1.8 | 46 | 2.3 | 45 | 2.3 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 40 | 3.0 | 40 | 3.6 | 40 | 4.6 |
| 104 | Yes | What is 3 times 23? | 80 | 2.6 | 78 | 3.6 | 83 | 2.9 |
| 109 | Yes | Subtract: 6000-2369. | 77 | 2.3 | 75 | 3.5 | 79 | 3.8 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 38 | 3.0 | 37 | 3.6 | 38 | 4.5 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 62 | 2.5 | 64 | 3.4 | 60 | 4.1 |
| K02 | Yes | Add: 6971 + 5291 | 86 | 1.9 | 83 | 3.1 | 89 | 2.3 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 31 | 2.9 | 31 | 3.9 | 31 | 3.9 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x _ is the same as what? | 51 | 2.6 | 58 | 3.2 | 44 | 3.8 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 48 | 2.6 | 45 | 3.8 | 50 | 3.9 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 80 | 1.9 | 78 | 3.1 | 82 | 2.8 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 60 | 2.3 | 59 | 2.6 | 60 | 3.2 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 31 | 2.3 | 29 | 2.8 | 34 | 3.1 |
| U05 | Yes | Write addition fact as a multiplication fact. | 65 | 2.3 | 66 | 2.9 | 65 | 2.9 |
| v02 | Yes | Write the number that is 1000 more than $56,821$. | 32 | 1.8 | 35 | 2.8 | 29 | 2.6 |
| V03 | Yes | What is 5 less than 203? | 34 | 2.0 | 37 | 2.7 | 31 | 2.7 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 32 | 1.9 | 31 | 2.6 | 34 | 3.3 |
| v04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 29 | 1.9 | 30 | 2.7 | 28 | 2.6 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 78 | 1.2 | 76 | 1.4 | 80 | 1.5 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 96 | 0.4 | 95 | 0.6 | 97 | 0.6 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 94 | 0.5 | 93 | 0.7 | 96 | 0.6 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 75 | 1.1 | 75 | 1.4 | 75 | 1.5 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 90 | 1.2 | 91 | 1.4 | 88 | 2.0 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 71 | 1.8 | 72 | 2.3 | 71 | 2.6 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 75 | 1.8 | 73 | 2.5 | 77 | 2.5 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 61 | 1.9 | 60 | 2.4 | 62 | 2.9 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 70 | 1.8 | 69 | 2.4 | 72 | 2.3 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 73 | 2.0 | 69 | 2.9 | 78 | 2.2 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 74 | 1.6 | 71 | 1.9 | 77 | 1.9 |
| T01A | Yes | Read simple information from bar graph. | 95 | 0.5 | 95 | 0.9 | 96 | 0.7 |
| T01B | Yes | Read information from bar graph and add to find a total. | 80 | 1.3 | 79 | 1.7 | 81 | 1.9 |

ercent correct on the Mathematics Items - Fourth Grade

Fourth Grade

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 87 | 0.8 | 88 | 0.9 | 87 | 1.1 |
| A02 | No | Determine total number from ratio and one number. | 74 | 1.2 | 74 | 1.3 | 75 | 1.5 |
| B09 | No | What is the sum of 2.5 and 3.8? | 94 | 0.5 | 93 | 0.7 | 95 | 0.5 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 90 | 0.7 | 91 | 0.9 | 89 | 1.1 |
| D08 | No | Subtract: 4.03-1.15. | 93 | 0.5 | 92 | 0.7 | 94 | 0.7 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 71 | 1.3 | 69 | 1.9 | 74 | 1.8 |
| E04 | No | Which of the following numbers means 7/10? | 92 | 0.6 | 90 | 0.9 | 94 | 0.7 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 78 | 1.3 | 76 | 1.5 | 81 | 1.6 |
| G01 | No | Given map and legend, how far apart are two cities? | 49 | 1.4 | 54 | 1.7 | 43 | 1.8 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 90 | 1.1 | 88 | 1.7 | 92 | 1.6 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 60 | 2.2 | 61 | 2.8 | 59 | 2.7 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 72 | 2.1 | 69 | 2.6 | 74 | 2.8 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 94 | 1.0 | 93 | 1.2 | 95 | 1.3 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 76 | 1.7 | 76 | 1.9 | 76 | 2.5 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 81 | 1.7 | 78 | 2.3 | 84 | 2.1 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 61 | 1.6 | 59 | 2.1 | 63 | 1.8 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 63 | 2.0 | 63 | 2.4 | 63 | 2.5 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 41 | 1.9 | 41 | 2.1 | 42 | 2.6 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 37 | 2.0 | 36 | 2.4 | 37 | 2.9 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 76 | 1.2 | 78 | 1.5 | 74 | 1.9 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 74 | 1.7 | 76 | 1.9 | 71 | 2.3 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 69 | 1.8 | 71 | 2.0 | 66 | 2.4 |
| U03C | Yes | Solve two proportions and compare results. | 86 | 1.0 | 85 | 1.5 | 88 | 1.3 |
| v01 | Yes | Is $1 / 3$ less than $1 / 4$ ? Shade appropriate parts of a circle to demonstrate. | 58 | 2.0 | 55 | 2.0 | 62 | 2.8 |


|  |  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL |  | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which | of these solids has both a flat surface and a curved surface? | 56 | 1.4 | 54 | 1.7 | 57 | 1.8 |
| D07 | No | Which | two figures are congruent? | 91 | 0.6 | 89 | 0.9 | 94 | 0.6 |
| F09 | No | Which | of the following must be true of a triangle? | 81 | 0.9 | 79 | 1.3 | 84 | 1.1 |
| H05 | No | Shown | diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 48 | 1.3 | 50 | 1.4 | 46 | 1.8 |
| 101 | Yes | Shown | map with city blocks, and given directions to school, locate school on map. | 48 | 2.1 | 51 | 2.7 | 44 | 3.0 |
| 106 | Yes | Which | of the following figures is made with straight sides only? | 74 | 1.8 | 73 | 2.2 | 75 | 2.4 |
| J01 | Yes | Shown | hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 92 | 0.9 | 92 | 1.3 | 91 | 1.4 |
| J02 | Yes | Shown | several drawings with a line through each, which does not show a line of symmetry? | 93 | 0.9 | 93 | 1.3 | 94 | 1.3 |
| K01 | Yes | Shown | figure with overlapping shapes, which number is in square and circle, but not in triangle? | 64 | 1.9 | 62 | 2.5 | 65 | 2.7 |
| K08 | Yes | Which | of the following rectangles is not divided into 4 equal parts? | 85 | 1.4 | 83 | 1.8 | 86 | 2.1 |
| L03 | Yes | Shown | "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 92 | 1.2 | 92 | 1.6 | 92 | 1.5 |
| L05 | Yes | Shown | diagram of cube with one edge labeled, how many edges does the cube have? | 44 | 2.2 | 44 | 2.7 | 44 | 3.3 |
| M04 | Yes | Given | explanation of how grid works, give the coordinates of a particular point. | 56 | 2.1 | 50 | 2.7 | 62 | 2.8 |
| T05 | Yes | Shown | picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 87 | 0.9 | 85 | 1.3 | 89 | 1.3 |

*COUNTRY ID*=Singapore SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ItEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 87 | 0.6 | 86 | 0.8 | 88 | 0.8 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 76 | 1.3 | 75 | 1.5 | 78 | 1.7 |
| C02 | No | Find volume of a stack of 5 cubes. | 84 | 1.0 | 84 | 1.3 | 85 | 1.3 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 46 | 1.3 | 50 | 1.5 | 41 | 1.9 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 72 | 1.2 | 72 | 1.5 | 72 | 1.7 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 82 | 1.1 | 81 | 1.3 | 83 | 1.3 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 76 | 1.2 | 75 | 1.4 | 76 | 1.6 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 83 | 1.0 | 82 | 1.1 | 84 | 1.3 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 88 | 0.9 | 87 | 1.1 | 90 | 1.0 |
| J06 |  | Which of the following weight (mass) measures is the largest? | 76 | 1.7 | 78 | 2.1 | 74 | 2.7 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 80 | 1.7 | 79 | 2.3 | 81 | 2.2 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 91 | 1.0 | 89 | 1.5 | 93 | 1.2 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 46 | 2.0 | 50 | 2.9 | 43 | 3.0 |
| L0 6 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 59 | 2.5 | 60 | 2.9 | 59 |  |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 25 | 1.9 | 28 | 2.8 | 22 | 2.2 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 45 | 1.9 | 45 | 2.4 | 46 | 2.8 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 47 | 2.0 | 47 | 2.3 | 48 | 2.6 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 51 | 2.1 | 55 | 2.2 | 46 | 2.9 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 66 | 1.8 | 65 | 1.9 | 67 | 2.7 |
| V05 | Yes | How many millimeters are in a meter? | 43 | 1.9 | 43 | 2.2 | 44 | 2.3 |

*COUNTRY ID*=Singapore SCALE=Patterns, Relations and Functions

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 77 | 1.1 | 77 | 1.5 | 77 | 1.6 |
| H08 | No | Given number pattern, what are the next three numbers? | 92 | 0.6 | 91 | 0.9 | 93 | 0.8 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 74 | 2.0 | 69 | 2.4 | 78 | 2.6 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 54 | 2.2 | 58 | 2.7 | 51 | 3.0 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 66 | 2.0 | 68 | 2.3 | 63 | 3.2 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 75 | 1.5 | 74 | 2.0 | 75 | 2.4 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 85 | 1.4 | 82 | 2.0 | 88 | 2.0 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 72 | 1.9 | 74 | 2.5 | 70 | 2.8 |
| M09 | Yes | 4 x _<17: Which number could go in the blank to make the sentence true? | 87 | 1.4 | 86 | 2.1 | 88 | 1.9 |
| U04 | Yes | Explain operation used to find next number in a pattern. | 79 | 1.3 | 77 | 1.6 | 80 | 1.8 |


| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 88 | 0.6 | 86 | 0.7 | 90 | 0.8 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 89 | 0.5 | 89 | 0.6 | 90 | 0.8 |
| B08 | No | Which addition expression has the same value as 342? | 96 | 0.4 | 96 | 0.5 | 96 | 0.6 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 91 | 0.7 | 90 | 0.8 | 92 | 0.9 |
| E02 | No | Which digit is in the hundreds place in 2345? | 95 | 0.5 | 94 | 0.7 | 96 | 0.6 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 85 | 1.0 | 85 | 1.3 | 86 | 1.4 |
| G03 | No | Which of the following is a name for 9740? | 96 | 0.5 | 95 | 0.7 | 98 | 0.5 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 89 | 0.8 | 89 | 1.0 | 88 | 1.1 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 80 | 1.3 | 77 | 1.6 | 82 | 1.5 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300 ? | 62 | 2.2 | 57 | 2.6 | 68 | 3.0 |
| 104 | Yes | What is 3 times 23? | 93 | 0.9 | 92 | 1.2 | 94 | 1.4 |
| 109 | Yes | Subtract: 6000-2369. | 91 | 1.0 | 90 | 1.6 | 93 | 1.4 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 73 | 1.7 | 74 | 1.9 | 72 | 2.7 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 84 | 1.4 | 82 | 2.1 | 87 | 1.7 |
| K02 | Yes | Add: 6971 + 5291 ler | 94 | 0.8 | 94 | 1.1 | 95 | 1.0 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 61 | 2.3 | 62 | 2.7 | 61 | 3.4 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 78 | 1.7 | 76 | 2.6 | 79 | 2.1 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 81 | 1.8 | 80 | 2.6 | 82 | 2.3 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 91 | 1.3 | 89 | 1.9 | 94 | 1.4 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 92 | 0.7 | 91 | 1.0 | 93 | 0.9 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 72 | 1.5 | 72 | 1.9 | 73 | 2.0 |
| U05 | Yes | Write addition fact as a multiplication fact. | 90 | 0.8 | 89 | 1.0 | 92 | 1.1 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 83 | 1.4 | 82 | 1.6 | 83 | 1.8 |
| V03 | Yes | What is 5 less than 203? | 82 | 1.2 | 82 | 1.6 | 82 | 1.7 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 29 | 1.0 | 25 | 1.4 | 34 | 1.8 |
| v04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 70 | 1.8 | 68 | 2.0 | 73 | 2.1 |


| ITEM | REL | LABEL | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 43 | 2.4 | 39 | 2.5 | 47 | 3.0 |
| C01 | No | Shown graph ( 20 unit increments), which class collected 45 bottles? | 89 | 1.3 | 90 | 1.7 | 89 | 1.5 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 86 | 1.7 | 81 | 2.9 | 91 | 1.1 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 51 | 1.8 | 53 | 2.7 | 50 | 2.3 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 74 | 2.8 | 70 | 3.8 | 80 | 3.1 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 28 | 3.2 | 22 | 3.8 | 36 | 4.3 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 48 | 3.6 | 45 | 4.8 | 49 | 4.0 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 39 | 2.8 | 35 | 4.4 | 41 | 4.0 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 78 | 3.0 | 84 | 3.5 | 73 | 4.2 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 44 | 3.5 | 33 | 4.8 | 54 | 4.8 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 38 | 3.2 | 35 | 3.5 | 42 | 4.1 |
| T01A | Yes | Read simple information from bar graph. | 82 | 2.1 | 82 | 3.2 | 82 | 2.7 |
| т01B | Yes | Read information from bar graph and add to find a total. | 23 | 2.2 | 20 | 2.5 | 27 | 3.0 |

Percent Correct on the Mathematics Items - Fourth Grade

Fourth Grade

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 74 | 1.9 | 75 | 2.3 | 73 | 2.1 |
| A02 | No | Determine total number from ratio and one number. | 36 | 1.2 | 36 | 1.5 | 36 | 1.7 |
| B09 | No | What is the sum of 2.5 and 3.8? | 66 | 2.0 | 64 | 2.8 | 67 | 2.7 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 71 | 2.2 | 69 | 2.7 | 73 | 2.7 |
| D08 | No | Subtract: 4.03-1.15. | 69 | 1.9 | 65 | 2.5 | 73 | 2.4 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 43 | 1.9 | 42 | 3.1 | 44 | 2.3 |
| E04 | No | Which of the following numbers means 7/10? | 37 | 2.6 | 36 | 3.4 | 39 | 2.5 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 51 | 2.0 | 51 | 2.4 | 51 | 2.7 |
| G01 | No | Given map and legend, how far apart are two cities? | 26 | 1.8 | 27 | 2.4 | 26 | 3.1 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 26 | 2.6 | 26 | 3.7 | 26 | 3.7 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 57 | 2.7 | 64 | 4.2 | 51 | 3.8 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 43 | 4.2 | 36 | 5.2 | 49 | 5.5 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 75 | 3.0 | 75 | 4.2 | 76 | 4.4 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 25 | 2.5 | 19 | 3.0 | 33 | 4.4 |
| m05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 35 | 3.2 | 38 | 5.7 | 32 | 3.7 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 32 | 2.7 | 30 | 3.1 | 35 | 3.2 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 26 | 3.2 | 24 | 2.8 | 27 | 5.0 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 4 | 1.3 | 3 | 1.5 | 6 | 1.8 |
| т04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 4 | 1.3 | 3 | 1.5 | 4 | 1.4 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 73 | 2.3 | 68 | 3.5 | 77 | 2.5 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 54 | 2.7 | 54 | 3.6 | 54 | 3.0 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 32 | 2.6 | 32 | 4.0 | 31 | 3.3 |
| U03C | Yes | Solve two proportions and compare results. | 66 | 2.3 | 64 | 3.2 | 68 | 3.5 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 14 | 2.1 | 13 | 2.2 | 14 | 3.3 |


|  |  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL |  | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which | of these solids has both a flat surface and a curved surface? | 53 | 2.2 | 52 | 2.6 | 53 | 3.2 |
| D07 | No | Which | two figures are congruent? | 83 | 1.6 | 79 | 2.5 | 87 | 1.9 |
| F09 | No | Which | of the following must be true of a triangle? | 57 | 1.8 | 56 | 2.6 | 59 | 2.7 |
| H05 | No | Shown | diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 17 | 1.5 | 18 | 1.8 | 16 | 2.3 |
| 101 | Yes | Shown | map with city blocks, and given directions to school, locate school on map. | 24 | 4.2 | 25 | 5.4 | 23 | 4.7 |
| 106 | Yes | Which | of the following figures is made with straight sides only? | 72 | 3.2 | 74 | 4.0 | 71 | 4.5 |
| J01 | Yes | Shown | hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 71 | 2.9 | 70 | 4.2 | 73 | 4. |
| J02 | Yes | Shown | several drawings with a line through each, which does not show a line of symmetry? | 66 | 3.0 | 65 | 4.0 | 66 | 3. |
| K01 | Yes | Shown | figure with overlapping shapes, which number is in square and circle, but not in triangle? | 50 | 3.3 | 46 | 3.9 | 55 | 4.8 |
| K08 | Yes | Which | of the following rectangles is not divided into 4 equal parts? | 71 | 2.1 | 67 | 3.0 | 78 | 3.7 |
| L03 | Yes | Shown | "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 80 | 3.1 | 80 | 3.8 | 80 | 3.7 |
| L05 | Yes | Shown | diagram of cube with one edge labeled, how many edges does the cube have? | 32 | 3.2 | 36 | 4.5 | 28 | 3.8 |
| M04 | Yes | Given | explanation of how grid works, give the coordinates of a particular point. | 19 | 3.0 | 20 | 4.4 | 19 | 3.7 |
| T05 | Yes | Shown | picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 46 | 3.3 | 45 | 3.9 | 48 | 3.5 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Thailand SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 93 | 1.0 | 93 | 1.5 | 93 | 0.8 |
| B07 | No | Word problem: best estimate of 84 x 57. | 33 | 1.4 | 37 | 2.3 | 28 | 1.6 |
| C02 | No | Find volume of a stack of 5 cubes. | 62 | 1.7 | 61 | 2.4 | 63 | 2.3 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 34 | 2.0 | 35 | 2.5 | 33 | 2.5 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 54 | 2.6 | 52 | 2.9 | 55 | 3.1 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 46 | 2.1 | 46 | 2.5 | 45 | 2.7 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 53 | 1.9 | 56 | 2.6 | 49 | 3.0 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 80 | 1.7 | 77 | 2.5 | 82 | 1.8 |
| H06 | No | Shown $6 \times 4$ rectangle, which of the following expressions gives the perimeter of the rectangle? | 29 | 2.3 | 30 | 2.7 | 28 | 2.5 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 73 | 2.9 | 76 | 3.2 | 69 | 4.8 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 28 | 2.8 | 27 | 3.3 | 30 | 3.7 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 84 | 2.9 | 82 | 4.3 | 86 | 2.4 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 15 | 2.4 | 16 | 3.2 | 14 | 3.0 |
| L0 6 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 50 | 3.3 | 55 | 4.4 | 47 | 4.4 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 15 | 2.2 | 15 | 3.4 | 15 | 2.9 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 22 | 2.4 | 22 | 3.8 | 22 | 3.9 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 33 | 2.8 | 34 | 3.7 | 33 | 3.3 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 13 | 2.1 | 13 | 2.3 | 12 | 3.2 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 22 | 3.0 | 24 | 3.3 | 21 | 3.6 |
| V05 | Yes | How many millimeters are in a meter? | 34 | 3.0 | 36 | 3.2 | 33 | 4.2 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 49 | 1.9 | 47 | 2.5 | 51 | 2.7 |
| H08 | No | Given number pattern, what are the next three numbers? | 53 | 2.6 | 52 | 2.9 | 55 | 3.0 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 54 | 4.1 | 52 | 5.4 | 55 | 4.8 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 37 | 2.5 | 35 | 3.5 | 39 | 4.1 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 44 | 2.9 | 43 | 3.9 | 45 | 4.7 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 59 | 2.6 | 56 | 3.3 | 62 | 3.7 |
| L0 4 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 55 | 2.8 | 48 | 4.1 | 60 | 3.8 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 47 | 3.6 | 51 | 5.0 | 44 | 3.6 |
| M09 | Yes | 4 x _ <17: Which number could go in the blank to make the sentence true? | 56 | 3.1 | 52 | 4.8 | 60 | 4.6 |

*COUNTRY ID*=Thailand SCALE=Whole Numbers

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 74 | 1.3 | 70 | 1.5 | 78 | 1.7 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 86 | 1.2 | 85 | 1.3 | 87 | 1.3 |
| B08 | No | Which addition expression has the same value as 342 ? | 86 | 1.4 | 85 | 1.8 | 88 | 1.7 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 73 | 1.8 | 71 | 2.4 | 75 | 2.7 |
| E02 | No | Which digit is in the hundreds place in 2345? | 83 | 1.7 | 82 | 2.2 | 83 | 2.0 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 59 | 1.7 | 56 | 2.7 | 63 | 2.9 |
| G03 | No | Which of the following is a name for 9740? | 95 | 1.0 | 94 | 1.4 | 95 | 1.0 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 67 | 2.2 | 67 | 2.9 | 66 | 2.8 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 81 | 2.0 | 84 | 2.4 | 77 | 2.7 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 54 | 2.9 | 47 | 3.8 | 60 | 4.1 |
| 104 | Yes | What is 3 times 23? | 54 | 2.8 | 58 | 4.4 | 50 | 3.5 |
| 109 | Yes | Subtract: 6000-2369. | 65 | 3.0 | 62 | 4.8 | 68 | 3.8 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 33 | 2.3 | 28 | 2.9 | 40 | 3.7 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 50 | 3.3 | 48 | 3.6 | 53 | 5.2 |
| K02 | Yes | Add: 6971 + 5291 l | 91 | 1.7 | 92 | 2.0 | 89 | 3.1 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 36 | 3.4 | 37 | 3.9 | 35 | 4.0 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 55 | 3.4 | 49 | 4.6 | 61 | 4.8 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 53 | 3.3 | 48 | 4.6 | 57 | 4.5 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 81 | 2.4 | 75 | 3.8 | 88 | 2.6 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 59 | 2.5 | 59 | 3.4 | 58 | 3.4 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 19 | 2.2 | 17 | 2.5 | 22 | 3.4 |
| U05 | Yes | Write addition fact as a multiplication fact. | 65 | 2.2 | 62 | 3.5 | 68 | 3.1 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 32 | 2.5 | 32 | 3.1 | 32 | 3.1 |
| V03 | Yes | What is 5 less than 203? | 39 | 2.8 | 36 | 3.3 | 42 | 3.5 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 0 | 0.1 |  |  | 0 | 0.2 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 18 | 2.2 | 14 | 2.4 | 21 | 2.7 |

*COUNTRY ID*=England SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 69 | 1.3 | 66 | 2.0 | 71 | 1.9 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 90 | 1.1 | 90 | 1.5 | 91 | 1.3 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 84 | 1.2 | 80 | 1.8 | 86 | 1.8 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 77 | 1.3 | 77 | 1.8 | 78 | 1.8 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 75 | 2.4 | 74 | 2.9 | 75 | 3.2 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 45 | 2.4 | 46 | 3.2 | 44 | 4.4 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 49 | 2.6 | 50 | 3.5 | 49 | 3.7 |
| L02 |  | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 55 | 2.9 | 53 | 4.2 | 57 | 3.9 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 78 | 1.9 | 77 | 2.8 | 79 | 2.5 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 49 | 2.8 | 49 | 3.9 | 49 | 3.0 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 49 | 2.2 | 48 | 3.2 | 51 | 3.2 |

fercent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=England SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 81 | 0.9 | 84 | 1.1 | 79 | 1.2 |
| A02 | No | Determine total number from ratio and one number. | 61 | 1.0 | 60 | 1.3 | 61 | 1.5 |
| B09 | No | What is the sum of 2.5 and 3.8? | 51 | 1.7 | 48 | 2.3 | 54 | 2.0 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 47 | 1.9 | 46 | 2.3 | 48 | 2.5 |
| D08 | No | Subtract: 4.03-1.15. | 38 | 1.6 | 35 | 2.3 | 41 | 2.0 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 53 | 2.1 | 52 | 2.4 | 54 | 2.5 |
| E04 | No | Which of the following numbers means 7/10? | 25 | 1.9 | 27 | 1.9 | 24 | 2.8 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate $1 / 4$, mother ate $1 / 4$, how much remains? | 74 | 1.4 | 74 | 2.1 | 75 | 1.7 |
| G01 | No | Given map and legend, how far apart are two cities? | 37 | 1.8 | 40 | 2.2 | 34 | 2.3 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 20 | 3.0 | 20 | 3.8 | 20 | 3.7 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 51 | 3.0 | 59 | 4.6 | 44 | 3.4 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 57 | 2.8 | 59 | 4.1 | 55 | 4.1 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 48 | 3.0 | 44 | 3.7 | 52 | 4.5 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 35 | 2.3 | 33 | 3.4 | 38 | 3.9 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 34 | 2.9 | 36 | 3.6 | 31 | 4.1 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 22 | 2.0 | 20 | 2.4 | 24 | 3.1 |
| S04 | Yes | Solve word problem: $10 / 30=$ ?/90. | 53 | 1.8 | 58 | 2.8 | 47 | 2.5 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 30 | 1.8 | 28 | 2.1 | 32 | 3.2 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 20 | 1.3 | 16 | 1.7 | 23 | 2.2 |
| U02 | Yes | Write a fraction that is larger than 2/7. | 55 | 2.0 | 53 | 2.6 | 57 | 2.9 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 60 | 1.8 | 65 | 2.4 | 55 | 2.4 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 40 | 1.6 | 44 | 2.9 | 36 | 2.5 |
| U03C | Yes | Solve two proportions and compare results. | 75 | 1.6 | 74 | 2.4 | 75 | 2.2 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 20 | 1.9 | 23 | 2.5 | 17 | 2.4 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 71 | 1.2 | 70 | 1.9 | 72 | 2.1 |
| D07 | No | Which two figures are congruent? | 88 | 0.9 | 87 | 1.5 | 89 | 1.3 |
| F09 | No | Which of the following must be true of a triangle? | 73 | 1.4 | 72 | 1.8 | 74 | 1.8 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 51 | 1.7 | 53 | 2.3 | 50 | 2.4 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 64 | 3.0 | 76 | 3.6 | 53 | 4.2 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 82 | 2.1 | 86 | 2.9 | 80 | 2.9 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 91 | 1.5 | 88 | 2.4 | 93 | 1.8 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 84 | 2.2 | 81 | 3.4 | 88 | 2.9 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 74 | 2.6 | 72 | 3.4 | 76 | 3.9 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 75 | 2.1 | 74 | 2.6 | 77 | 3.5 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 94 | 1.3 | 91 | 2.2 | 97 | 1.2 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 39 | 2.6 | 40 | 3.8 | 37 | 3.8 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 68 | 2.4 | 66 | 3.7 | 71 | 2.9 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 76 | 1.8 | 75 | 2.2 | 78 | 2.4 |

*COUNTRY ID*=England SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 83 | 1.0 | 84 | 1.2 | 83 | 1.2 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 36 | 1.6 | 37 | 2.2 | 35 | 1.9 |
| C02 | No | Find volume of a stack of 5 cubes. | 64 | 1.5 | 65 | 2.0 | 63 | 2.1 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 60 | 1.7 | 60 | 2.1 | 60 | 2.7 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 70 | 1.5 | 70 | 2.0 | 70 | 1.7 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 62 | 1.6 | 67 | 2.0 | 57 | 2.2 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 62 | 1.8 | 67 | 2.5 | 57 | 2.2 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 50 | 2.1 | 53 | 2.4 | 47 | 2.7 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 43 | 1.8 | 42 | 2.8 | 43 | 2.2 |
| J06 |  | Which of the following weight (mass) measures is the largest? | 62 | 2.6 | 66 | 3.9 | 58 | 3.7 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 46 | 2.9 | 51 | 4.3 | 40 | 4.2 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 68 | 3.0 | 67 | 3.7 | 69 | 4.2 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 29 | 3.2 | 26 | 3.4 | 32 | 4.2 |
| L0 6 |  | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 47 | 2.9 | 44 | 4.8 | 50 |  |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 27 | 2.1 | 37 | 3.3 | 17 | 2.7 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 37 | 2.8 | 38 | 3.4 | 37 | 4.2 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 58 | 1.9 | 60 | 2.5 | 56 | 2.6 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 49 | 2.0 | 53 | 2.6 | 45 | 2.9 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 38 | 1.8 | 39 | 2.3 | 38 | 2.9 |
| v05 | Yes | How many millimeters are in a meter? | 44 | 2.2 | 50 | 3.1 | 38 | 2.7 |

*COUNTRY ID*=England SCALE=Patterns, Relations and Functions

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 44 | 1.8 | 46 | 2.3 | 43 | 2.7 |
| H08 | No | Given number pattern, what are the next three numbers? | 77 | 1.4 | 77 | 2.0 | 78 | 2.1 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 43 | 2.8 | 48 | 4.6 | 39 | 3.6 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 35 | 2.7 | 38 | 3.6 | 31 | 3.7 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 42 | 2.6 | 40 | 3.6 | 43 | 3.8 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 54 | 2.7 | 53 | 3.3 | 55 | 4.9 |
| L04 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 75 | 2.3 | 71 | 3.5 | 79 | 3.0 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 66 | 2.7 | 69 | 3.5 | 62 | 3.9 |
| M09 | Yes | 4 x - <17: Which number could go in the blank to make the sentence true? | 56 | 2.8 | 55 | 4.1 | 57 | 3.8 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 57 | 1.8 | 59 | 3.1 | 54 | 2.6 |

*COUNTRY ID*=England SCALE=Whole Numbers

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes | 47 | 4 | 45 | 1.6 | 48 | 1.9 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 82 | 0.9 | 82 | 1.2 | 81 | 1.3 |
| B08 | No | Which addition expression has the same value as 342? | 79 | 1.2 | 83 | 1.4 | 75 | 1.8 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 74 | 1.7 | 76 | 2.2 | 72 | 2.1 |
| E02 | No | Which digit is in the hundreds place in 2345? | 68 | 1.4 | 69 | 1.7 | 67 | 2.7 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 54 | 2.0 | 57 | 2.4 | 51 | 3.0 |
| G03 | No | Which of the following is a name for 9740? | 86 | 1.0 | 86 | 1.5 | 86 | 1.6 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 36 | 1.8 | 34 | 2.3 | 38 | 2.3 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 74 | 1.5 | 74 | 1.9 | 73 | 2.1 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 48 | 2.9 | 47 | 4.7 | 48 | 4.0 |
| 104 | Yes | What is 3 times 23? | 89 | 1.7 | 92 | 2.2 | 87 | 2.4 |
| 109 | Yes | Subtract: 6000-2369. | 36 | 2.5 | 37 | 4.2 | 36 | 3.2 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 37 | 3.0 | 46 | 4.0 | 27 | 3.9 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 83 | 1.8 | 82 | 2.6 | 83 | 2.5 |
| к02 | Yes | Add: 6971 + 5291 le | 60 | 2.4 | 53 | 3.1 | 69 | 3.6 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 34 | 2.6 | 45 | 3.8 | 23 | 3.4 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x - is the same as what? | 61 | 2.2 | 65 | 4.0 | 58 | 3.4 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 70 | 2.6 | 71 | 3.5 | 68 | 3.4 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 83 | 2.0 | 80 | 3.2 | 87 | 2.8 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 49 | 2.1 | 56 | 2.8 | 42 | 2.8 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 35 | 2.3 | 37 | 3.4 | 33 | 2.9 |
| U05 | Yes | Write addition fact as a multiplication fact. | 53 | 1.9 | 53 | 2.3 | 52 | 2.7 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 36 | 1.8 | 42 | 2.5 | 29 | 2.4 |
| v03 | Yes | What is 5 less than 203? | 61 | 1.8 | 66 | 2.3 | 57 | 3.0 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 11 | 1.3 | 10 | 1.8 | 11 | 1.8 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 50 | 2.2 | 48 | 2.7 | 53 | 2.9 |

*COUNTRY ID*=Scotland SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 69 | 1.5 | 65 | 1.9 | 73 | 1.7 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 92 | 1.0 | 91 | 1.3 | 93 | 1.1 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 83 | 1.4 | 82 | 1.8 | 86 | 1.6 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 77 | 1.5 | 76 | 2.1 | 77 | 1.7 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 74 | 2.1 | 72 | 3.1 | 76 | 3.1 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 53 | 2.3 | 54 | 3.8 | 52 | 3.1 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 56 | 2.8 | 56 | 3.4 | 57 | 4.3 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 55 | 2.5 | 49 | 3.9 | 61 | 3.3 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 73 | 2.9 | 75 | 3.6 | 70 | 3.7 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 54 | 2.6 | 55 | 3.2 | 53 | 3.5 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 45 | 2.0 | 44 | 2.1 | 47 | 3.1 |
| T01A | Yes | Read simple information from bar graph. | 83 | 1.5 | 85 | 1.9 | 81 | 2.1 |
| T01B | Yes | Read information from bar graph and add to find a total. | 43 | 2.3 | 40 | 3.0 | 47 | 2.6 |

ercent Correct on the Mathematics Items - Fourth Grade

Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 78 | 1.3 | 80 | 1.3 | 77 | 1.7 |
| A02 | No | Determine total number from ratio and one number. | 55 | 1.2 | 53 | 1.4 | 56 | 1.5 |
| B09 | No | What is the sum of 2.5 and 3.8? | 56 | 1.8 | 55 | 1.9 | 58 | 2.4 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 52 | 1.8 | 48 | 2.3 | 57 | 2.1 |
| D08 | No | Subtract: 4.03-1.15. | 57 | 2.0 | 53 | 2.5 | 60 | 2.5 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 48 | 1.8 | 51 | 2.2 | 45 | 2.2 |
| E04 | No | Which of the following numbers means 7/10? | 31 | 2.3 | 34 | 2.7 | 29 | 2.6 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate 1/4, mother ate 1/4, how much remains? | 73 | 1.6 | 71 | 2.2 | 75 | 1.8 |
| G01 | No | Given map and legend, how far apart are two cities? | 36 | 1.7 | 40 | 2.4 | 32 | 2.1 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 28 | 2.9 | 24 | 3.3 | 31 | 3.8 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 46 | 2.5 | 45 | 3.2 | 47 | 3.9 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 46 | 3.1 | 50 | 4.1 | 43 | 4.1 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 66 | 2.5 | 64 | 3.9 | 67 | 3.6 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 33 | 2.4 | 33 | 3.4 | 33 | 3.2 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 34 | 2.7 | 34 | 3.7 | 35 | 3.9 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 27 | 2.2 | 24 | 2.7 | 29 | 2.9 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 52 | 2.3 | 54 | 2.9 | 51 | 3.1 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 26 | 1.9 | 23 | 2.5 | 28 | 2.4 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 16 | 1.7 | 14 | 2.5 | 17 | 2.0 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 54 | 2.2 | 55 | 2.8 | 53 | 3.1 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 57 | 2.1 | 60 | 2.8 | 54 | 2.8 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 45 | 1.9 | 48 | 2.5 | 41 | 2.8 |
| U03C | Yes | Solve two proportions and compare results. | 80 | 1.5 | 79 | 1.9 | 80 | 2.4 |
| V01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 20 | 1.7 | 20 | 2.1 | 21 | 2.3 |


| ITEM | REL |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 71 | 1.5 | 71 | 1.7 | 72 | 2.0 |
| D07 | No | Which two figures are congruent? | 88 | 1.0 | 87 | 1.4 | 89 | 1.3 |
| F09 | No | Which of the following must be true of a triangle? | 71 | 1.7 | 70 | 2.3 | 71 | 2.0 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 49 | 1.6 | 51 | 2.0 | 47 | 2.3 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 61 | 2.5 | 63 | 3.5 | 57 | 3.8 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 73 | 2.5 | 76 | 3.2 | 70 | 3.8 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 95 | 1.0 | 93 | 1.8 | 97 | 1.2 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 90 | 1.6 | 89 | 2.1 | 90 | 2.2 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 69 | 2.5 | 69 | 3.3 | 69 | 3.3 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 77 | 2.0 | 76 | 2.9 | 79 | 3.0 |
| L03 | Yes | Shown "game board" graph, which object is located at (2,D)? | 95 | 1.2 | 94 | 1.8 | 96 | 1.5 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 44 | 2.8 | 45 | 3.6 | 44 | 3.8 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 55 | 2.7 | 50 | 3.9 | 59 | 3.4 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 76 | 1.8 | 74 | 2.4 | 77 | 2.3 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Scotland SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 89 | 0.8 | 89 | 0.9 | 88 | 1.0 |
| B07 |  | Word problem: best estimate of 84 x 57. | 41 | 1.4 | 41 | 1.9 | 42 | 1.9 |
| C02 | No | Find volume of a stack of 5 cubes. | 65 | 1.4 | 68 | 1.9 | 62 | 2.1 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 57 | 1.6 | 60 | 2.2 | 55 | 2.2 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 75 | 1.5 | 74 | 1.8 | 76 | 2.4 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 73 | 1.6 | 75 | 2.0 | 71 | 2.3 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 57 | 1.8 | 57 | 2.0 | 58 | 2.7 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 50 | 1.8 | 50 | 2.2 | 51 | 2.4 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 45 | 1.7 | 46 | 2.1 | 45 | 2.6 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 55 | 2.7 | 58 | 3.4 | 51 | 3.7 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 47 | 2.6 | 48 | 3.6 | 46 | 4.1 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 69 | 2.9 | 75 | 3.8 | 64 | 4.0 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 24 | 1.9 | 22 | 2.3 | 27 | 3.1 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 50 | 2.7 | 45 | 3.5 | 55 | 3.8 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 23 | 2.6 | 26 | 3.5 | 20 | 3.6 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 35 | 2.2 | 38 | 3.6 | 31 | 3.4 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 57 | 1.7 | 56 | 2.3 | 58 | 2.8 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 54 | 2.0 | 57 | 3.1 | 50 | 2.7 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 52 | 2.2 | 50 | 3.0 | 54 | 2.7 |
| V05 | Yes | How many millimeters are in a meter? | 37 | 2.3 | 34 | 2.7 | 40 | 3.1 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 48 | 1.4 | 46 | 2.2 | 49 | 2.0 |
| H08 | No | Given number pattern, what are the next three numbers? | 78 | 1.5 | 77 | 1.7 | 78 | 2. |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 47 | 2.9 | 49 | 4.1 | 45 | 4.4 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 31 | 2.6 | 33 | 3.3 | 29 | 3.5 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 49 | 2.1 | 49 | 3.5 | 49 | 3.4 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 61 | 2.7 | 63 | 3.7 | 58 | 4.0 |
| L0 4 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 73 | 2.3 | 69 | 3.5 | 78 | 2.5 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 65 | 2.1 | 68 | 3.4 | 62 | 3.3 |
| M09 | Yes | $4 \mathrm{x}-<17$ : Which number could go in the blank to make the sentence true? | 59 | 2.5 | 58 | 3.5 | 60 | 3.7 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 63 | 2.2 | 65 | 2.9 | 62 | 2. |

Percent Correct on the Mathematics Items - Fourth Grade

Fourth Grade

*COUNTRY ID*=United States SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 76 | 1.0 | 71 | 1.1 | 80 | 1.2 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 96 | 0.4 | 95 | 0.7 | 97 | 0.5 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 93 | 0.6 | 92 | 1.3 | 95 | 0.6 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 81 | 1.2 | 80 | 1.6 | 81 | 1.2 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 78 | 1.8 | 78 | 2.6 | 77 | 2.4 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 53 | 2.7 | 52 | 4.1 | 53 | 3.2 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 68 | 2.2 | 72 | 2.6 | 64 | 2.8 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 68 | 1.9 | 69 | 2.9 | 67 | 3.0 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 83 | 1.5 | 85 | 1.9 | 82 | 2.1 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 53 | 1.7 | 53 | 3.1 | 54 | 2.3 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 55 | 1.7 | 52 | 2.3 | 58 | 2.5 |
| T01A | Yes | Read simple information from bar graph. | 90 | 0.9 | 90 | 1.1 | 89 | 1.3 |
| т01B | Yes | Read information from bar graph and add to find a total. | 57 | 1.9 | 53 | 2.9 | 61 | 1.8 |

*COUNTRY ID*=United States SCALE=Fractions and Proportionality

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 76 | 1.3 | 78 | 1.4 | 74 | 1.3 |
| A02 | No | Determine total number from ratio and one number. | 53 | 0.8 | 51 | 1.2 | 55 | 1.2 |
| B09 | No | What is the sum of 2.5 and 3.8? | 67 | 1.8 | 66 | 1.9 | 68 | 2.2 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 71 | 1.8 | 68 | 1.7 | 74 | 2.1 |
| D08 | No | Subtract: 4.03-1.15. | 70 | 1.4 | 69 | 2.0 | 70 | 1.8 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 61 | 1.2 | 61 | 1.7 | 60 | 1.6 |
| E04 | No | Which of the following numbers means 7/10? | 44 | 2.3 | 44 | 2.3 | 44 | 2.7 |
| F06 | No | Janis ate $1 / 2$ cake, Maija ate $1 / 4$, mother ate $1 / 4$, how much remains? | 59 | 1.2 | 57 | 1.8 | 61 | 1.5 |
| G01 | No | Given map and legend, how far apart are two cities? | 32 | 1.2 | 34 | 2.0 | 29 | 1.7 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 40 | 2.8 | 42 | 3.3 | 39 | 3.7 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 43 | 2.0 | 50 | 2.5 | 35 | 2.8 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 52 | 1.9 | 57 | 2.1 | 46 | 2.9 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 80 | 1.6 | 79 | 2.1 | 82 | 2.1 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 36 | 2.1 | 37 | 4.1 | 35 | 2.4 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 32 | 2.5 | 29 | 3.3 | 35 | 2.6 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 32 | 1.8 | 30 | 2.1 | 34 | 2.2 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 45 | 1.4 | 47 | 2.1 | 43 | 2.0 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 25 | 1.5 | 22 | 2.0 | 28 | 2.0 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 17 | 1.5 | 17 | 1.7 | 17 | 1.9 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 68 | 1.4 | 68 | 2.1 | 68 | 1.4 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 62 | 1.7 | 67 | 2.0 | 57 | 2.1 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 44 | 2.0 | 48 | 3.1 | 40 | 1.8 |
| U03C | Yes | Solve two proportions and compare results. | 82 | 1.2 | 81 | 2.0 | 84 | 1.0 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 27 | 1.6 | 27 | 2.2 | 27 | 2.0 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 70 | 1.4 | 70 | 1.9 | 70 | 1.6 |
| D07 | No | Which two figures are congruent? | 92 | 0.6 | 92 | 0.9 | 92 | 0.9 |
| F09 | No | Which of the following must be true of a triangle? | 72 | 0.9 | 70 | 1.3 | 75 | 1.3 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 45 | 1.4 | 45 | 2.0 | 46 | 1.8 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 62 | 2.1 | 63 | 2.5 | 60 | 3.4 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 75 | 1.4 | 76 | 2.4 | 75 | 2.4 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 91 | 1.0 | 90 | 1.6 | 91 | 1.7 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 74 | 2.0 | 75 | 2.2 | 72 | 3.5 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 74 | 1.7 | 76 | 2.2 | 73 | 2.4 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 83 | 1.5 | 84 | 2.5 | 83 | 1.7 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 97 | 0.5 | 96 | 0.9 | 98 | 0.5 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 35 | 1.9 | 35 | 2.3 | 35 | 2.5 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 56 | 2.3 | 55 | 3.4 | 56 | 3.0 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 66 | 1.9 | 66 | 1.9 | 65 | 2.5 |


|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 81 | 0.7 | 82 | 0.8 | 80 | 0.9 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 64 | 1.5 | 64 | 1.9 | 63 | 1.7 |
| C02 | No | Find volume of a stack of 5 cubes. | 65 | 1.4 | 67 | 1.9 | 64 | 1.6 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 50 | 1.3 | 53 | 1.6 | 46 | 1.8 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 73 | 1.1 | 72 | 1.4 | 73 | 1.5 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 82 | 1.1 | 84 | 1.3 | 79 | 1.4 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 58 | 1.3 | 60 | 1.6 | 55 | 1.6 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 48 | 1.2 | 48 | 2.0 | 47 | 1.7 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 50 | 2.3 | 53 | 2.8 | 48 | 2.7 |
| J06 |  | Which of the following weight (mass) measures is the largest? | 61 | 2.1 | 64 | 2.2 | 58 | 3.6 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 71 | 2.0 | 68 | 2.9 | 74 | 2.6 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 55 | 2.2 | 55 | 3.5 | 54 | 3.1 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 23 | 1.9 | 23 | 2.3 | 23 | 2.6 |
| L0 6 |  | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 52 | 2.6 | 49 | 3.5 | 55 | 3.1 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 10 | 1.5 | 11 | 2.0 | 10 | 1.8 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 38 | 2.2 | 42 | 3.4 | 33 | 2.5 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 53 | 1.4 | 54 | 1.7 | 51 | 2.0 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 49 | 1.7 | 54 | 2.3 | 44 | 2.3 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 46 | 1.7 | 44 | 2.4 | 47 | 2.0 |
| v05 | Yes | How many millimeters are in a meter? | 21 | 2.1 | 24 | 2.1 | 19 | 2.7 |

*COUNTRY ID*=United States SCALE=Patterns, Relations and Functions


Percent Correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 72 | 0.9 | 70 | 1.2 | 75 | 1.0 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 89 | 0.5 | 90 | 0.7 | 87 | 0.7 |
| B08 | No | Which addition expression has the same value as 342? | 86 | 0.7 | 87 | 1.0 | 86 | 0.8 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 82 | 0.9 | 81 | 1.5 | 82 | 1.3 |
| E02 | No | Which digit is in the hundreds place in 2345? | 89 | 0.9 | 89 | 1.1 | 89 | 1.0 |
| F07 | No | What number equals 3 ones + 5 tens + 4 hundreds + 60 thousands? | 75 | 1.3 | 75 | 1.5 | 74 | 1.8 |
| G03 | No | Which of the following is a name for 9740? | 92 | 0.7 | 92 | 1.0 | 93 | 0.7 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 77 | 1.3 | 78 | 1.7 | 76 | 1.6 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 61 | 1.3 | 63 | 1.9 | 58 | 1.8 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 57 | 2.2 | 55 | 3.0 | 60 | 2.7 |
| 104 | Yes | What is 3 times 23? | 90 | 1.0 | 88 | 1.8 | 91 | 1.3 |
| 109 | Yes | Subtract: 6000-2369. | 71 | 2.2 | 68 | 2.7 | 74 | 2.6 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 46 | 2.1 | 48 | 2.9 | 44 | 2.8 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 83 | 1.4 | 83 | 1.8 | 82 | 2.3 |
| K02 | Yes | Add: 6971 + 5291 | 86 | 1.1 | 85 | 1.5 | 86 | 1.9 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 45 | 1.9 | 47 | 2.6 | 43 | 2.7 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x _ is the same as what? | 71 | 1.9 | 71 | 2.6 | 71 | 2.3 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 69 | 1.8 | 72 | 3.1 | 67 | 2.5 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 89 | 1.5 | 88 | 2.0 | 89 | 1.6 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 58 | 1.6 | 62 | 2.2 | 54 | 2.1 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 50 | 1.8 | 49 | 2.5 | 50 | 2.6 |
| U05 | Yes | Write addition fact as a multiplication fact. | 84 | 1.4 | 83 | 2.0 | 84 | 1.5 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 58 | 2.1 | 61 | 2.3 | 54 | 2.9 |
| V03 | Yes | What is 5 less than 203? | 64 | 1.8 | 67 | 2.4 | 60 | 1.9 |
| V04A | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Which sum is greater? How do you know? | 23 | 1.5 | 18 | 1.7 | 28 | 2.0 |
| v04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 57 | 1.3 | 58 | 1.5 | 56 | 1.9 |

*COUNTRY ID*=Slovenia SCALE=Data Rep., Analysis and Probability

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| B05 | No | Multi-step graph problem: determine Sarah's relative height, then her height from graph. | 75 | 1.4 | 73 | 1.7 | 77 | 2.2 |
| C01 | No | Shown graph (20 unit increments), which class collected 45 bottles? | 87 | 1.3 | 87 | 1.7 | 87 | 1.7 |
| D05 | No | Shown bar graph, which two classes collected exactly 80 bottles? | 77 | 1.6 | 75 | 2.3 | 80 | 1.9 |
| F05 | No | Shown temperature chart, when was the highest temperature recorded? | 76 | 1.6 | 77 | 2.4 | 77 | 1.9 |
| J03 | Yes | Shown pie graph of how Mary spent her day, how much time did she spend on two categories combined? | 82 | 2.3 | 83 | 2.5 | 82 | 4.0 |
| K04 | Yes | Add points from various rounds of a game to determine who won game and by how much. | 63 | 3.0 | 64 | 3.7 | 61 | 3.9 |
| L01 | Yes | Given graph showing numbers of trees, how many trees does each symbol represent? | 44 | 3.6 | 43 | 4.7 | 45 | 5.3 |
| L02 | Yes | Given bags containing different numbers of marbles, determine greatest chance of choosing red marble. | 49 | 2.7 | 49 | 3.5 | 50 | 4.5 |
| M01 | Yes | Given several hexagons with various parts shaded, find greatest chance of stone landing on shaded area. | 84 | 2.2 | 87 | 2.7 | 80 | 3.9 |
| M02 | Yes | Multi-step word problem: add 6 one-digit numbers and subtract from 60. | 65 | 2.7 | 59 | 3.9 | 70 | 4.1 |
| S01 | Yes | Given table of frequencies, complete bar graph for same information. | 32 | 2.2 | 34 | 2.9 | 31 | 3.0 |
| T01A | Yes | Read simple information from bar graph. | 73 | 2.1 | 77 | 2.8 | 70 | 2.6 |
| т01B | Yes | Read information from bar graph and add to find a total. | 48 | 2.7 | 46 | 3.8 | 49 | 2.9 |

fercent correct on the Mathematics Items - Fourth Grade

## Fourth Grade

|  |  |  | Ove |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Item | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A01 | No | In which figure are one-half of the dots black? | 94 | 0.5 | 93 | 0.5 | 95 | 0.6 |
| A02 | No | Determine total number from ratio and one number. | 61 | 1.0 | 61 | 1.6 | 61 | 1.5 |
| B09 | No | What is the sum of 2.5 and 3.8? | 66 | 1.8 | 64 | 1.9 | 66 | 2.7 |
| C03 | No | Which figure shows $2 / 3$ of the square shaded? | 52 | 1.7 | 51 | 2.6 | 54 | 2.4 |
| D08 | No | Subtract: 4.03-1.15. | 68 | 1.8 | 65 | 2.4 | 71 | 2.2 |
| D09 | No | Which of the following diagram has three out of every four squares shaded? | 65 | 1.9 | 65 | 2.4 | 66 | 2.7 |
| E04 | No | Which of the following numbers means 7/10? | 4 | 0.7 | 5 | 1.1 | 3 | 0.8 |
| F06 | No | Janis ate 1/2 cake, Maija ate 1/4, mother ate 1/4, how much remains? | 75 | 2.0 | 75 | 2.7 | 74 | 2.8 |
| G01 | No | Given map and legend, how far apart are two cities? | 49 | 2.1 | 55 | 2.5 | 43 | 2.4 |
| 102 | Yes | Which of the following word expressions is the same as .4? | 16 | 2.2 | 16 | 2.8 | 15 | 3.3 |
| 105 | Yes | If five tomatoes make $1 / 2$ liter of sauce, how much sauce do 15 tomatoes make? | 61 | 3.2 | 68 | 4.5 | 53 | 4.3 |
| 108 | Yes | Shown four diagrams with various fractions shaded, which two represent the same fraction? | 64 | 2.6 | 67 | 4.4 | 60 | 4.4 |
| J07 | Yes | Shown a square divided into 9 squares, 5 of which are shaded, what fraction of the figure is shaded? | 47 | 3.2 | 48 | 5.1 | 47 | 3.4 |
| K09 | Yes | 54 marbles are equally divided into 6 bags. How many marbles in 2 bags? | 47 | 3.1 | 48 | 4.1 | 45 | 4.2 |
| M05 | Yes | Given partly shaded figure, which of the following numbers represents the shaded part? | 29 | 3.5 | 36 | 4.9 | 20 | 3.4 |
| S03 | Yes | Solve word problem: 96.4-33.2 | 33 | 2.5 | 32 | 2.8 | 35 | 3.3 |
| S04 | Yes | Solve word problem: 10/30 = ?/90. | 51 | 2.2 | 53 | 3.4 | 50 | 3.5 |
| T04A | Yes | Does 10 girls and 20 boys mean one girl for every two boys? Explain. | 24 | 2.5 | 20 | 2.6 | 27 | 3.3 |
| T04B | Yes | Does 10 girls and 20 boys mean half of all students are girls? Explain. | 12 | 1.7 | 11 | 2.3 | 13 | 2.0 |
| U02 | Yes | Write a fraction that is larger than $2 / 7$. | 39 | 2.0 | 37 | 3.0 | 41 | 3.3 |
| U03A | Yes | Solve word problem using proportions: 3/10 = 9/? | 68 | 1.7 | 74 | 2.5 | 62 | 3.1 |
| U03B | Yes | Solve word problem using proportions: 1/3 = 9/? | 61 | 2.5 | 63 | 2.7 | 60 | 3.2 |
| U03C | Yes | Solve two proportions and compare results. | 82 | 1.8 | 82 | 2.4 | 81 | 2.2 |
| v01 | Yes | Is $1 / 3$ less than 1/4? Shade appropriate parts of a circle to demonstrate. | 26 | 2.1 | 22 | 2.5 | 30 | 3.3 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| B06 | No | Which of these solids has both a flat surface and a curved surface? | 51 | 1.4 | 50 | 2.0 | 51 | 2.4 |
| D07 | No | Which two figures are congruent? | 92 | 0.7 | 92 | 1.3 | 93 | 1.0 |
| F09 | No | Which of the following must be true of a triangle? | 77 | 1.6 | 77 | 2.3 | 78 | 2.0 |
| H05 | No | Shown diagram of a figure made of blocks, which of the following could be the figure after it is turned? | 61 | 1.5 | 63 | 2.0 | 59 | 2.4 |
| 101 | Yes | Shown map with city blocks, and given directions to school, locate school on map. | 63 | 2.6 | 64 | 3.6 | 60 | 4.1 |
| 106 | Yes | Which of the following figures is made with straight sides only? | 85 | 2.1 | 86 | 3.2 | 85 | 2.9 |
| J01 | Yes | Shown hexagon divided into six triangles, identify smaller shape. (recognize triangles) | 95 | 1.2 | 95 | 1.4 | 96 | 1.9 |
| J02 | Yes | Shown several drawings with a line through each, which does not show a line of symmetry? | 63 | 3.5 | 65 | 4.4 | 62 | 4.5 |
| K01 | Yes | Shown figure with overlapping shapes, which number is in square and circle, but not in triangle? | 72 | 2.8 | 68 | 4.1 | 75 | 3.4 |
| K08 | Yes | Which of the following rectangles is not divided into 4 equal parts? | 78 | 2.4 | 75 | 3.8 | 79 | 3.2 |
| L03 | Yes | Shown "game board" graph, which object is located at ( $2, \mathrm{D}$ ) ? | 93 | 1.7 | 92 | 2.2 | 94 | 2.5 |
| L05 | Yes | Shown diagram of cube with one edge labeled, how many edges does the cube have? | 60 | 2.7 | 59 | 3.7 | 60 | 4.0 |
| M04 | Yes | Given explanation of how grid works, give the coordinates of a particular point. | 46 | 2.8 | 41 | 4.2 | 51 | 3.5 |
| T05 | Yes | Shown picture of folded paper with shape cut out, draw picture of cut-out when unfolded. | 68 | 2.0 | 61 | 3.1 | 75 | 2.5 |

Percent Correct on the Mathematics Items - Fourth Grade
*COUNTRY ID*=Slovenia SCALE=Measurement, Estimation, \& Number Sense

|  | REL | LABEL | Fourth Grade |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Overall |  | Boys |  | Girls |  |
| ITEM |  |  | \% | (se) | \% | (se) | \% | (se) |
| A05 | No | Which of these figures has the largest area? | 86 | 1.1 | 86 | 1.3 | 86 | 1.6 |
| B07 | No | Word problem: best estimate of $84 \times 57$. | 52 | 1.8 | 53 | 2.4 | 52 | 2.4 |
| C02 | No | Find volume of a stack of 5 cubes. | 74 | 1.6 | 75 | 2.2 | 74 | 2.5 |
| D06 | No | How many degrees did temperature rise from minus 3 to 5? | 59 | 2.0 | 69 | 2.5 | 50 | 2.9 |
| E01 | No | Shown calendar, what date is three weeks after December 2? | 76 | 1.6 | 76 | 1.9 | 77 | 2.1 |
| E03 | No | Which of the following numbers would be rounded to 600 when rounded to the nearest hundred? | 65 | 1.7 | 70 | 2.1 | 61 | 2.5 |
| F08 | No | Which units would be best to measure the weight (mass) of an egg? | 80 | 1.4 | 82 | 2.0 | 77 | 2.3 |
| G02 | No | Which of the following could be the weight (mass) of an adult? | 78 | 1.7 | 79 | 2.3 | 78 | 2.4 |
| H06 | No | Shown 6 x 4 rectangle, which of the following expressions gives the perimeter of the rectangle? | 72 | 1.8 | 71 | 2.4 | 72 | 2.1 |
| J06 | Yes | Which of the following weight (mass) measures is the largest? | 89 | 2.0 | 88 | 2.9 | 90 | 2.7 |
| J08 | Yes | Word problem: best estimate of $57+62+59$. | 45 | 2.7 | 49 | 3.6 | 41 | 3.8 |
| K05 | Yes | About how many centimeters is this picture of a pencil? | 84 | 2.3 | 87 | 3.1 | 81 | 3.0 |
| K07 | Yes | A 20 cm wire is formed into a rectangle with width 4 cm . What is the length? | 20 | 2.3 | 24 | 3.8 | 16 | 2.9 |
| L06 | Yes | Given 1 clothespin $=9.2 \mathrm{~g}$, which is the best estimate of the weight (mass) of 1000? | 71 | 2.6 | 71 | 4.0 | 70 | 4.1 |
| L08 | Yes | Given number of paces in which each of several children cross the room, who had the longest pace? | 54 | 3.2 | 54 | 4.2 | 54 | 4.9 |
| M07 | Yes | Which of the following would most likely be measured in milliliters? | 45 | 3.2 | 42 | 3.8 | 49 | 4.4 |
| S05 | Yes | Given picture of a paper clip, about how many lengths of the clip is the length of this line? | 43 | 2.2 | 42 | 3.4 | 45 | 3.4 |
| T03 | Yes | Mr. Brown talks a 1 hour and 30 minute walk and returns at 7:00. At what time did he start? | 59 | 2.3 | 64 | 2.8 | 54 | 3.3 |
| U01 | Yes | Given a triangle and large irregular figure, how many triangles will cover the figure? | 53 | 2.9 | 49 | 3.5 | 57 | 3.7 |
| V05 | Yes | How many millimeters are in a meter? | 70 | 1.5 | 70 | 2.4 | 70 | 2.6 |


|  |  |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ITEM | REL | LABEL | \% | (se) | \% | (se) | \% | (se) |
| G04 | No | Given symbol for number of magazines read in a week, select expression for number read in 6 weeks. | 57 | 1.5 | 58 | 2.5 | 56 | 2.1 |
| H08 | No | Given number pattern, what are the next three numbers? | 75 | 1.5 | 71 | 2.3 | 80 | 1.8 |
| 107 | Yes | Given a 130 page book, and 78 pages read, which expression gives the number of pages remaining? | 67 | 2.6 | 67 | 4.1 | 67 | 4.1 |
| J05 | Yes | Determine common operation between four pairs of numbers. | 47 | 3.1 | 45 | 4.3 | 49 | 4.8 |
| K03 | Yes | Which pair of numbers follows the rule 'multiply by 5'? | 61 | 3.0 | 60 | 4.6 | 61 | 4.0 |
| K06 | Yes | Extend pattern of figures to determine number of tiles in the sixth figure. | 72 | 2.8 | 72 | 3.5 | 71 | 4.2 |
| L0 4 | Yes | Shown pattern of shapes, which of the following is arranged in the same pattern? | 75 | 2.7 | 74 | 3.9 | 78 | 3.3 |
| L09 | Yes | Given statements about the relative ages of three children, which statement must also be true? | 72 | 3.2 | 72 | 4.3 | 72 | 3.9 |
| M09 | Yes | $4 \mathrm{x}-<17$ : Which number could go in the blank to make the sentence true? | 86 | 1.6 | 85 | 2.6 | 88 | 2.5 |
| U0 4 | Yes | Explain operation used to find next number in a pattern. | 68 | 2.0 | 66 | 2.9 | 70 |  |


| ITEM | REL |  | Overall |  | Boys |  | Girls |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | LABEL | \% | (se) | \% | (se) | \% | (se) |
| A03 | No | Find number of pencils given pencils/box and number of boxes. | 80 | 0.9 | 78 | 1.0 | 82 | 1.6 |
| A04 | No | Find number of small squares given groupings of hundreds, tens, and ones. | 82 | 0.8 | 83 | 1.0 | 82 | 1.4 |
| B08 | No | Which addition expression has the same value as 342? | 92 | 0.8 | 92 | 1.0 | 92 | 1.2 |
| C04 | No | Which expression shows how long it will take to wash 8 windows at 4 minutes/window? | 82 | 1.3 | 81 | 2.0 | 83 | 1.8 |
| E02 | No | Which digit is in the hundreds place in 2345? | 67 | 1.8 | 68 | 2.7 | 65 | 2.4 |
| F07 | No | What number equals 3 ones + 5 tens +4 hundreds + 60 thousands? | 70 | 1.6 | 69 | 2.6 | 71 | 2.5 |
| G03 | No | Which of the following is a name for 9740? | 87 | 1.2 | 86 | 1.3 | 88 | 1.7 |
| H07 | No | Determine the relative magnitude of three-digit numbers when digits are rearranged. | 83 | 1.3 | 81 | 1.6 | 84 | 2.0 |
| H09 | No | Which number is equal to eight tens plus nine tens? | 56 | 2.1 | 58 | 2.6 | 54 | 2.5 |
| 103 | Yes | Which of the numbers below, when subtracted from 900, yields an answer greater than 300? | 72 | 3.0 | 70 | 4.3 | 74 | 3.8 |
| 104 | Yes | What is 3 times 23? | 95 | 1.3 | 97 | 1.7 | 94 | 2.0 |
| 109 | Yes | Subtract: 6000-2369. | 86 | 1.9 | 85 | 2.9 | 86 | 3.0 |
| J04 | Yes | $25 \times 18$ is more than $24 \times 18$. How much more? | 51 | 3.0 | 52 | 3.8 | 50 | 4.4 |
| J09 | Yes | Given chart with consecutive numbers in rows, extend pattern to find the number in square. | 77 | 2.8 | 76 | 3.8 | 77 | 3.8 |
| K02 | Yes | Add: 6971 + 5291 | 91 | 1.6 | 91 | 2.6 | 90 | 2.3 |
| L07 | Yes | In which of the following pairs of numbers is the 2 nd number 100 more than the 1st? | 63 | 3.3 | 62 | 4.0 | 65 | 4.5 |
| M03 | Yes | Recognize symmetric property of multiplication: 7 x _ is the same as what? | 57 | 3.2 | 59 | 4.1 | 57 | 4.8 |
| M06 | Yes | John wanted to add $1463+319$, but entered $1263+319$. How could he fix his mistake? | 80 | 1.9 | 79 | 3.2 | 82 | 3.4 |
| M08 | Yes | Which of the following four-digit numbers is the largest? | 92 | 1.5 | 90 | 2.0 | 95 | 2.1 |
| S02 | Yes | Complete number sentence: $2000+?+30+9=2739$. | 81 | 1.6 | 83 | 2.3 | 80 | 2.6 |
| T02 | Yes | Arrange four digits to make the smallest possible whole number. | 30 | 2.2 | 30 | 2.7 | 29 | 3.1 |
| U05 | Yes | Write addition fact as a multiplication fact. | 86 | 1.5 | 85 | 2.1 | 88 | 1.9 |
| V02 | Yes | Write the number that is 1000 more than 56,821. | 70 | 2.0 | 71 | 2.2 | 69 | 3.1 |
| V03 | Yes | What is 5 less than 203? | 79 | 1.8 | 77 | 2.8 | 81 | 2.1 |
| V04A | Yes | Arrange 4 digits as addition of 22 -digit numbers. Which sum is greater? How do you know? | 45 | 2.9 | 38 | 3.7 | 54 | 3.7 |
| V04B | Yes | Arrange 4 digits as addition of 2 2-digit numbers. Find arrangement with sum greater than either of above. | 57 | 2.4 | 52 | 3.0 | 63 | 3.0 |

