

## Math Test Answer Key and Task Analysis (Grades K-6)

The related math worksheets were taken from the following URL.

<http://www.basic-mathematics.com/math-skills-assessment.html>

Math Calculation = MC

Math Problem Solving = MPS

### Kindergarten Math Test

| Type      | #  | Answer   | Skill   |
|-----------|----|--|---|
| MPS       | 1  | 2, <b>3</b> , <b>4</b> , 5, 6, 7, <b>8</b> , 9, <b>10</b>                          | - Describe a repeating pattern.<br>- Extend a repeating pattern.  |
| MC        | 2  | <i>Student should have circled 8 mice.</i>   | - Count whole numbers 1 to 10.  |
| MPS       | 3  | 12, 10, <b>8</b> , 6, <b>4</b> , 2, 0  | - Describe a repeating pattern.<br>- Extend a repeating pattern.  |
| MC        | 4  | 6 (bananas); 7 (ducks)   | - Count whole numbers 1 to 10.<br>- Write whole numbers 1 to 10.  |
| MPS       | 5  | <i>Student should have drawn a square.</i>   | - Draw plane figures (square).  |
| MPS       | 6  | <i>Student should have drawn a triangle.</i>                                       | - Draw plane figures (triangle).  |
| MPS       | 7  | <i>Student should have identified a circle, rectangle, &amp; triangle.</i>         | - Identify plane figures (circle, rectangle, & triangle).   |
| MPS<br>MC | 8  | 7; Thursday; Sunday  | - Identify the number of days in a week.<br>- Solve simple problems using days.   |
| MPS       | 9  | A. 10 cents  | - Identify the value of coins (dime).   |
| MPS<br>MC | 10 | 7  | - Choose the correct operation.<br>- Solve one-digit addition.  |
| MPS       | 11 | <i>Student should have identified a cone, sphere, cube, cylinder, and pyramid.</i> | - Identify solid figures (cone).<br>- Identify solid figures (sphere).<br>- Identify solid figures (cube).<br>- Identify solid figures (cylinder).<br>- Identify solid figures (pyramid). |
| MPS       | 12 | <i>Student should know left, right, and inside.</i>                                | - Identify position relative to an object.  |
| MPS       | 13 | Lion   | - Compare and order by weight.  |
| MPS       | 14 | Giraffe  | - Compare and order by height.  |
| MPS       | 15 | <i>Student should have crossed out the blue moon.</i>                              | - Sort objects by color.  |
| MPS       | 16 | <i>Student should have crossed out the flowers.</i>                                | - Sort objects by other criteria.   |
| MPS       | 17 | <i>Student should have shaded one-half of each figure.</i>                         | - Model fractions in a drawing.   |
| MPS       | 18 | 3:00   | - Tell time to the hour.  |
| MPS       | 19 | <i>Student should have selected Figure #3.</i>                                     | - Model subtraction in a drawing (one-half).  |
| MPS       | 20 | 3 inches   | - Measure length to the nearest inch.   |

First Grade Math Test

| Type      | #  | Answer  | Skill  |
|-----------|----|---|--|
| MPS       | 1  | C. 18   | - Describe a repeating pattern.<br>- Extend a repeating pattern.   |
| MPS       | 2  | B. 10 cents   | - Identify the value of coins (dime).  |
| MPS       | 3  | 8:05  | - Tell time to the nearest five minutes.   |
| MPS<br>MC | 4  | 7 pencils   | - Choose the correct operation.<br>- Solve simple subtraction without regrouping.  |
| MPS       | 5  | 34, 36, <b>38</b> , 40, <b>42</b>   | - Describe a repeating pattern.<br>- Extend a repeating pattern.<br>- Count by twos.   |
| MPS       | 6  | C. 25 cents and 5 nickels   | - Identify the value of coins (quarter).<br>- Describe relationships among coins.  |
| MPS       | 7  | 9 slices  | - Choose the correct operation.<br>- One-digit addition.   |
| MPS       | 8  | D. 50   | - Describe a repeating pattern.<br>- Extend a repeating pattern.   |
| MC        | 9  | 33  | - Solve two-digit subtraction without regrouping.  |
| MPS       | 10 | $4 > 2$ ; $5 < 7$   | - Compare one-digit whole numbers.   |
| MPS       | 11 | <i>Student should have identified one triangle, two rectangles, and one circle.</i> | - Identify plane figures (circle, rectangle, & triangle).  |
| MPS       | 12 | tens place = 5; ones place = 6  | - Identify place value (tens).   |
| MC        | 13 | 35; 102; 36; 17   | - Solve two-digit addition without regrouping.<br>- Solve two-digit addition with regrouping.<br>- Solve two-digit subtraction without regrouping.<br>- Solve two-digit subtraction with regrouping. |
| MPS       | 14 | 4:50  | - Tell time to the nearest ten minutes.  |
| MPS       | 15 | two; seven; fourteen; twenty-four   | - Write whole numbers 1-10.<br>- Write whole numbers 11-20.<br>- Write whole numbers 21-99.  |
| MPS       | 16 | sphere; cylinder  | - Identify solid figures (sphere).<br>- Identify solid figures (cylinder).   |
| MPS       | 17 | 75, 70, <b>65</b> , 60, 55, <b>50</b>   | - Describe a repeating pattern.<br>- Extend a repeating pattern.<br>- Count by fives.  |
| MPS       | 18 | two inches  | - Measure length to the nearest inch.  |
| MPS       | 19 | 5 dimes   | - Describe the relationship among coins.   |
| MPS<br>MC | 20 | 13 (6 + 7)  | - Solve word problems with the addition of whole numbers.  |

Second Grade Math Test

| Type      | #  | Answer  | Skill   |
|-----------|----|---|---|
| MPS       | 1  | 16, 22, 28, <b>34, 40</b>   | - Describe a repeating pattern.<br>- Extend a repeating pattern.  |
| MPS       | 2  | B. Quarter  | - Identify the value of coins (quarter).  |
| MPS       | 3  | <i>Student should have divided and shaded one-third of the rectangle and three-fourths of the circle.</i> | - Model fractions in a drawing (fourths).   |
| MPS       | 4  | C. 24 hours   | - Convert days to hours.  |
| MPS       | 5  | 847, 855, <b>863</b> , 871, <b>879</b>  | - Describe a repeating pattern.<br>- Extend a repeating pattern.  |
| MPS       | 6  | \$1.70; \$1.05  | - Identify the value of coins (quarter, dime, nickel, and penny).<br>- Identify the value of coin collections.<br>- Solve subtraction problems using money. |
| MPS<br>MC | 7  | 134 meals   | - Choose the correct operation.<br>- Solve subtraction without regrouping.  |
| MPS       | 8  | Figure #3   | - Identify congruent figures.   |
| MPS       | 9  | $87 > 81$ ; $157 < 211$   | - Compare two-digit whole numbers.<br>- Compare three-digit whole numbers.  |
| MPS       | 10 | D. 512  | - Identify place value (hundreds).<br>- Identify place value (ones).  |
| MPS       | 11 | tens place = 8; ones place = 5; hundreds place = 9  | - Identify place value (tens).<br>- Identify place value (ones).<br>- Identify place value (hundreds).  |
| MC        | 12 | 476; 977; 542; 111  | - Solve three-digit addition without regrouping.<br>- Solve three-digit subtraction without regrouping.<br>- Solve three-digit subtraction with regrouping. |
| MPS       | 13 | $\frac{1}{2}$ ; $\frac{3}{8}$   | - Model fractions in a drawing (one-half).<br>- Model fractions in a drawing (eighths).   |
| MC<br>MPS | 14 | $42 + 14 = 56$ ; $65 + 33 > 90$   | - Solve two-digit addition without regrouping.<br>- Compare numbers.  |
| MPS       | 15 | twenty-five; forty-eight; one-hundred twenty-four; two hundred fifty-six                                  | - Write whole numbers 21-99.<br>- Write three-digit whole numbers.  |
| MPS       | 16 | sphere; cone; cylinder  | - Identify solid figures (sphere).<br>- Identify solid figures (cone).<br>- Identify solid figures (cylinder).  |
| MPS       | 17 | 467, 459, <b>451</b> , 443, 435, <b>427</b>   | - Describe a repeating pattern.<br>- Extend a repeating pattern.  |
| MPS       | 18 | one and one-half inches   | - Measure length to the nearest half-inch.  |
| MPS       | 19 | C. $28 - 8 = 18$  | - Identify addition and subtraction fact families.  |
| MPS<br>MC | 20 | $55 + 64 = 119$ ; 998   | - Solve word problems with the addition of whole numbers.<br>- Solve word problems with the subtraction of whole numbers.                                   |

Third Grade Math Test

| Type      | #  | Answer  | Skill   |
|-----------|----|---|---|
| MPS       | 1  | 10055, 10105, 10155, <b>10205</b> , <b>10255</b>  | - Describe a repeating pattern.<br>- Extend a repeating pattern.  |
| MPS       | 2  | C. 13   | - Solve word problems with multiplication of whole numbers.   |
| MPS<br>MC | 3  | A. 236  | - Identify place value (hundreds).<br>- Identify place value (tens).<br>- Identify place value (ones).<br>- Solve three-digit addition without regrouping.  |
| MPS       | 4  | A. 245  | - Read and write three-digit whole numbers.   |
| MPS       | 5  | 941, 952, <b>963</b> , 974, <b>985</b>  | - Describe a repeating pattern.<br>- Extend a repeating pattern.  |
| MPS       | 6  | D. 911  | - Compare and order three-digit whole numbers.  |
| MPS       | 7  | C. $4 \times 3$   | - Model multiplication in a drawing.  |
| MPS<br>MC | 8  | C. 24   | - Choose the correct operation.<br>- Solve word problems with division of whole numbers.  |
| MPS       | 9  | $899 < 901$ ; $1425 > 1424$   | - Compare three-digit whole numbers.<br>- Compare four-digit whole numbers.   |
| MPS       | 10 | B. 484  | - Identify place value (hundreds).<br>- Identify place value (tens).<br>- Identify place value (ones).  |
| MPS<br>MC | 11 | $2 \times 8 = 16$ ; $4 \times 4 = 16$   | - Solve word problems with multiplication of whole numbers.   |
| MC        | 12 | 100,302; 1,112  | - Solve five-digit addition with regrouping.<br>- Solve five-digit subtraction without regrouping.  |
| MPS       | 13 | sphere; C. cylinder; D. rectangular prism   | - Identify solid figures (sphere).<br>- Identify solid figures (cylinder).<br>- Identify solid figures (rectangular prism).   |
| MPS<br>MC | 14 | <i>Any two like the following are acceptable:</i><br>$36 \times 2 = 72$ ; $8 \times 9 = 72$ ; $4 \times 18 = 72$ ; $6 \times 12 = 72$ | - Solve word problems with multiplication of whole numbers.   |
| MPS       | 15 | four thousand five hundred sixty-one;<br>three thousand nine hundred seventy-four   | - Write four-digit whole numbers.   |
| MPS       | 16 | A and D   | - Model fractions in a drawing (sixths).  |
| MPS       | 17 | <i>Student should draw a rectangle with 6 out of 8 equal parts shaded.</i>  | - Draw plane figures (rectangle).<br>- Model fractions in a drawing (eighths).  |
| MC        | 18 | D. Hamburger and Sprite   | - Solve addition problems using money.  |
| MPS       | 19 | D. $10 + ( 12 )$  | - Understand addition properties (associative).   |
| MPS<br>MC | 20 | \$432; \$120; \$40  | - Choose the correct operation.<br>- Solve word problems with multiplication of whole numbers.<br>- Solve word problems with subtraction of whole numbers.<br>- Solve word problems with division of whole numbers. |

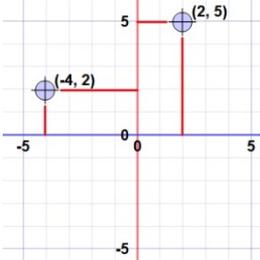
Fourth Grade Math Test

| Type      | #  | Answer  | Skill  |
|-----------|----|---|--|
| MPS       | 1  | $\frac{1}{3}$   | - Compare fractions.   |
| MPS       | 2  | B. 414  | - Describe a repeating pattern.<br>- Extend a repeating pattern.   |
| MPS       | 3  | A. 363  | - Identify place value (hundreds, tens, and ones).<br>- Solve three-digit addition without regrouping.                     |
| MPS       | 4  | 800; 4,000  | - Round whole numbers to the nearest hundred.<br>- Round whole numbers to the nearest thousand.                            |
| MPS       | 5  | D. 5,022  | - Read and write four-digit whole numbers.   |
| MPS       | 6  | twenty-five hundredths and $\frac{1}{4}$ ;<br>four tenths and $\frac{2}{5}$   | - Write decimals using words.<br>- Convert decimals to fractions.  |
| MPS       | 7  | B. 5,707  | - Compare and order four-digit whole numbers.  |
| MC        | 8  | 8   | - Solve open number sentences (addition).  |
| MPS<br>MC | 9  | B. 32 and 5   | - Identify place value (hundreds and tens).<br>- Use place value to solve a problem.                                       |
| MPS<br>MC | 10 | B. 71 cents   | - Identify the value of coins (quarter, dime, nickel, & penny).<br>- Solve two-digit addition with regrouping.             |
| MC        | 11 | C. 3,055  | - Solve multiplication with up to three- by two-digit factors.   |
| MPS       | 12 | B. $\frac{4}{5}$  | - Compare fractions.   |
| MPS       | 13 | <i>Any three like the following are acceptable:</i><br>$2 \times 18 = 36$ ; $3 \times 12 = 36$ ; $4 \times 9 = 36$ ; $6 \times 6 = 36$        | - Solve word problems with multiplication of whole numbers.  |
| MPS       | 14 | D. three-ninths   | - Model fractions in a drawing (ninths).   |
| MC        | 15 | 69,435; 923   | - Solve five-digit addition with regrouping.<br>- Solve five-digit subtraction with regrouping.                            |
| MPS       | 16 | trapezoid; B. sphere; D. rectangular prism  | - Identify solid figures (trapezoid, sphere, and rectangular prism).   |
| MPS       | 17 | quarter – highest value   | - Describe relationships among coins.  |
| MPS       | 18 | five thousand six hundred sixty-nine;<br>eight thousand seven hundred sixty-five  | - Write four-digit whole numbers.  |
| MC        | 19 | 59; 68, remainder 1   | - Solve long division with simple divisors (no remainder).<br>- Solve long division with simple divisors (with remainder). |
| MC        | 20 | C. A and B  | - Add simple fractions.  |
| MPS       | 21 | <i>Student should have drawn a circle, split it into 4 pieces, and shaded half.</i>   | - Draw plane figures (circle).<br>- Model fractions in a drawing (fourths).  |
| MPS       | 22 | <i>Student should have drawn two circles, split them into 4 pieces, and shaded <math>\frac{1}{4}</math> and <math>\frac{3}{4}</math>.</i>     | - Draw plane figures (circle).<br>- Model fractions in a drawing (fourths).  |
| MPS<br>MC | 23 | * + 4 must equal # + #  | - Solve open number sentences (addition).<br>- Evaluate algebraic expressions using addition / subtraction.                |
| MPS<br>MC | 24 | C. $40 \times 11$   | - Solve three-digit addition problems with whole numbers.<br>- Solve two-digit by two-digit multiplication problems.       |
| MPS<br>MC | 25 | \$5,600; <i>Student probably multiplied <math>8 \times 7</math>.</i><br>\$1,100; <i>Student probably subtracted <math>67-56</math>.</i> \$110 | - Choose the correct operation.<br>- Solve word problems using multiplication, subtraction, and division of whole numbers. |
| MPS<br>MC | 26 | \$40  | - Choose the correct operation.<br>- Solve word problems using division and multiplication.                                |
| MC        | 27 | D. 16 square units  | - Calculate area.  |
| MPS       | 28 | <i>Student should draw two parallel lines and one perpendicular line.</i>   | - Draws a line (parallel and perpendicular).   |
| MPS       | 29 | <i>Student should draw two congruent shapes and two similar shapes.</i>   | - Draws a shape (congruent and similar).   |
| MPS       | 30 | 4, 20, 100, <b>500, 2,500</b>   | - Describe a repeating pattern.<br>- Extend a repeating pattern.   |

Fifth Grade Math Test

| Type      | #  | Answer   | Skill  |
|-----------|----|--|--|
| MPS<br>MC | 1  | 10   | - Evaluate algebraic expressions.<br>- Apply order of operations.<br>- Solve equations using addition, multiplication, and subtraction.  |
| MPS       | 2  | D. 21  | - Solve word problems using division.  |
| MPS       | 3  | -20, -12, 5, 50  | - Use integers.<br>- Compare and order integers.   |
| MPS       | 4  | B. Circumference   | - Describe circumference.  |
| MPS<br>MC | 5  | A. 7   | - Calculate an average.<br>- Solve two-digit addition with whole numbers.<br>- Solve word problems with division of whole numbers.   |
| MC        | 6  | 3; -3; -13; 13   | - Add integers.  |
| MPS       | 7  | >  | - Compare decimals.  |
| MPS<br>MC | 8  | perimeter = 24 units<br>area = 35 square units                   | - Solve problems using perimeter.<br>- Solve problems using area.  |
| MPS       | 9  | heads or tails; $\frac{1}{2}$ ; 50%; 0.5                         | - Determine the possible outcomes.<br>- Determine the probability of an event.<br>- Write probability as a fraction.<br>- Write probability as a percent.<br>- Write probability as a decimal. |
| MPS<br>MC | 10 | $\frac{9}{6}$  | - Find the least common denominator.<br>- Find an equivalent fraction.<br>- Add fractions with a common denominator.   |
| MPS       | 11 | $1\frac{1}{2}$ ; $\frac{3}{2}$                                   | - Convert improper fractions to a mixed number.<br>- Reduce fractions.   |
| MC        | 12 | 523  | - Solve long division problems with two-digit divisors (and no remainder).   |
| MPS       | 13 | <i>Any picture representing the problem is acceptable; C. 12</i> | - Solve a problem using a picture.<br>- Determine the possible outcomes.   |
| MPS       | 14 | C. Multiply by 4 and then add 3.                                 | - Use an input-output table.   |
| MPS       | 15 | B. Centimeter  | - Identify the appropriate unit for measuring length.  |
| MPS<br>MC | 16 | 901  | - Solve open number sentences (addition and subtraction).<br>- Evaluate algebraic expressions using addition / subtraction.  |
| MPS<br>MC | 17 | D. 22 or 26  | - Describe an isosceles triangle.<br>- Calculate perimeter.  |
| MPS       | 18 | C. How much money Noemy had before buying the apples.            | - Solve word problems with addition.   |
| MPS       | 19 | C. Compared to 1970, computers cost half as much in 2010.        | - Analyze data in a bar graph.   |
| MPS       | 20 | no; \$166; $\frac{2}{3}$   | - Solve word problems using division.  |

Sixth Grade Math Test

| Type      | #  | Answer   | Skill  |
|-----------|----|--|--|
| MPS       | 1  | $x = 10$   | - Apply order of operations.<br>- Evaluate algebraic expressions.                                    |
| MPS       | 2  | C. $30 - k$  | - Write a subtraction expression for a word problem.   |
| MPS       | 3  | B. 1 inch  | - Solve for corresponding parts in similar figures.  |
| MC        | 4  | D. 125   | - Calculate exponents.   |
| MPS       | 5  | average = $7\frac{3}{7}$ ; median = 6; mode = 6; range = 13  | - Find the mean, median, mode, and range.  |
| MC        | 6  | -13; -3; -13   | - Subtract integers.   |
| MPS       | 7  |   | - Plot points on the coordinate plane.   |
| MPS<br>MC | 8  | perimeter = 16 units; area = $13\frac{2}{9}$   | - Calculate perimeter and area.<br>- Add fractions.<br>- Multiply fractions.                         |
| MPS       | 9  | 1,2,3,4,5,6; $\frac{1}{2}$ ; $\frac{1}{2}$ ; $\frac{1}{2}$   | - Determine the possible outcomes.<br>- Identify odd, even, and prime numbers.                       |
| MC        | 10 | $\frac{31}{35}$  | - Add fractions with different denominators.   |
| MPS       | 11 | C. thousandths   | - Identify place value (thousandths).  |
| MPS       | 12 | $x = 450$  | - Solve two-step equations.  |
| MPS       | 13 | $-\frac{2}{4}$ , $-.50$ , $-\frac{1}{4}$ , $0.20$ , $\frac{3}{4}$ , $0.90$ , $1.50$ , $\frac{7}{4}$  | - Compare and order fractions.   |
| MPS       | 14 | $4x + 50$ ; B. 130 dollars   | - Write an expression for a real-world situation.<br>- Evaluate algebraic expressions.               |
| MPS       | 15 | composites = 12, 14, 15, 16, 18; <i>Student should pick one of the composites and identify all the factors; prime numbers = 11, 13, 17, 19</i>       | - Identify composite numbers.<br>- Factor a number.  |
| MPS       | 16 | 4 lines of symmetry  | - Identify lines of symmetry.  |
| MPS       | 17 | C. perimeter = $8\pi$ and area = $16\pi$   | - Calculate the perimeter and area of a circle.  |
| MPS       | 18 | John has 32 dollars, and Peter has 8 dollars.  | - Write an equation for a real-world situation.<br>- Solve a system of equations.                    |
| MPS       | 19 | B. $\frac{5000}{6} = \frac{x}{15000}$  | - Set up a proportion.   |
| MPS       | 20 | \$138  | - Solve for a percent of a whole.<br>- Solve addition problems using money.                          |
| MPS       | 21 | 4 inches   | - Set up a proportion, and solve a proportion.   |
| MPS       | 22 | A. $\frac{4}{20}$ , red  | - Determine the possible outcomes.<br>- Determine the probability of an event.                       |
| MPS       | 23 | <i>Congruence: equal in shape and size. Student should draw such. Similarity: equal in shape but not necessarily size. Student should draw such.</i> | - Describe congruence and draw congruent figures.<br>- Describe similarity and draw similar figures. |
| MPS       | 24 | $\frac{1}{8}$  | - Determine the probability of an event.   |
| MPS       | 25 | 200  | - Apply order of operations.<br>- Solve multistep equations.   |
| MPS       | 26 | 540 degrees  | - Measure the interior angles of a polygon.  |
| MPS       | 27 | 42 inches  | - Convert feet to inches.  |
| MPS       | 28 | volume = 24 inches cubed<br>area = 52 inches squared   | - Calculate volume of a rectangular prism.<br>- Calculate surface area of a rectangular prism.       |
| MPS       | 29 | A. rectangular prism   | - Identify solid figures (rectangular prism).  |
| MPS       | 30 | \$56   | - Solve word problems with percents.   |