

Pre-Formatted Reports: Benchmark Test Item Analysis - New Format

Data Selections

Institution(s): All School Types, All Schools
Benchmark Administration: 09/03/14, 2014-2015 Baseline Math Grade 5
Trend Profile: 2014-2015
Subject: Mathematics
Test Focus: Mathematics
Test Level: All Benchmark Test Levels
Test Category: District Benchmark
Grade: All Grade Levels
Enrollment: Total for 2014-2015

Number of questions: 40
 Number of test-taking students: 1278

Student Responses

Question - Type	Correct		Incorrect	Most Common Mistake		Point Value	Points Achieved / Possible	P-Value/Item Mean	Discrimination
	Rate	Value	Total Rate	Rate	Value				
1 - Multiple Choice	83%	B	17%	14%	C	1	1058 / 1278	0.82	0.18
2 - Multiple Choice	51%	C	49%	22%	D	1	652 / 1278	0.51	0.34
3 - Multiple Choice	90%	A	10%	4%	B	1	1149 / 1278	0.89	0.35
4 - Multiple Choice	50%	C	50%	22%	A	1	636 / 1278	0.49	0.42
5 - Multiple Choice	70%	C	30%	16%	A	1	889 / 1278	0.69	0.50
6 - Multiple Choice	57%	D	43%	17%	A	1	729 / 1278	0.57	0.55
7 - Multiple Choice	48%	A	52%	20%	D	1	611 / 1278	0.48	0.50
8 - Multiple Choice	88%	A	12%	8%	B	1	1129 / 1278	0.88	0.44
9 - Multiple Choice	86%	C	14%	9%	B	1	1098 / 1278	0.85	0.41
10 - Multiple Choice	48%	B	52%	27%	C	1	611 / 1278	0.48	0.51
11 - Multiple Choice	85%	D	15%	8%	B	1	1090 / 1278	0.84	0.46
12 - Multiple Choice	41%	D	59%	38%	A	1	526 / 1278	0.40	0.53
13 - Multiple Choice	57%	A	43%	22%	B	1	728 / 1278	0.56	0.57
14 - Multiple Choice	43%	C	57%	36%	B	1	546 / 1278	0.42	0.45
15 - Multiple Choice	85%	A	15%	7%	B	1	1088 / 1278	0.85	0.38
16 - Multiple Choice	72%	C	28%	13%	A	1	917 / 1278	0.71	0.42
17 - Multiple Choice	63%	A	37%	22%	C	1	809 / 1278	0.63	0.17

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18 - Multiple Choice	67%	B	33%	18%	A	1	854 / 1278	0.66	0.39
19 - Multiple Choice	69%	C	31%	14%	B	1	884 / 1278	0.69	0.33
20 - Multiple Choice	50%	B	50%	22%	C	1	639 / 1278	0.49	0.46
21 - Multiple Choice	70%	C	30%	13%	D	1	889 / 1278	0.69	0.46
22 - Multiple Choice	51%	D	49%	25%	B	1	648 / 1278	0.50	0.39
23 - Multiple Choice	53%	A	47%	23%	B	1	682 / 1278	0.53	0.39
24 - Multiple Choice	60%	C	40%	15%	A	1	762 / 1278	0.59	0.47
25 - Multiple Choice	51%	B	49%	30%	C	1	646 / 1278	0.50	0.41
26 - Multiple Choice	89%	A	11%	6%	B	1	1133 / 1278	0.88	0.38
27 - Multiple Choice	76%	D	24%	9%	A	1	974 / 1278	0.75	0.50
28 - Multiple Choice	88%	C	12%	5%	B	1	1129 / 1278	0.88	0.36
29 - Multiple Choice	35%	B	65%	42%	A	1	443 / 1278	0.35	0.41
30 - Multiple Choice	33%	A	67%	38%	B	1	428 / 1278	0.33	0.32
31 - Multiple Choice	54%	C	46%	26%	A	1	694 / 1278	0.54	0.55
32 - Multiple Choice	76%	B	24%	10%	A	1	970 / 1278	0.75	0.45
33 - Multiple Choice	54%	D	46%	25%	B	1	693 / 1278	0.53	0.58
34 - Multiple Choice	58%	B	42%	16%	A	1	742 / 1278	0.57	0.56
35 - Multiple Choice	42%	A	58%	26%	D	1	540 / 1278	0.42	0.35
36 - Multiple Choice	69%	C	31%	14%	A	1	881 / 1278	0.68	0.52
37 - Multiple Choice	74%	D	26%	18%	A	1	951 / 1278	0.73	0.40
38 - Multiple Choice	59%	C	41%	24%	A	1	748 / 1278	0.58	0.52
39 - Multiple Choice	66%	B	34%	17%	D	1	845 / 1278	0.65	0.44
40 - Multiple Choice	47%	C	53%	29%	A	1	607 / 1278	0.47	0.39
Summary	63%		37%				801 / 1278		

P-value represents an item's difficulty as evaluated by dividing the total number of correct responses by the total number of students tested. P-value is calculated for true/false, multiple choice, gridded or hot spot-single response items.

Item Mean is the average score for student responses to an open response question or to a multi-part question. Item Mean is calculated for inline response, matching or hot spot-multiple selections items.

Discrimination or Item Total Score Correlation is the correlation between the question score and the overall test score and indicates the extent to which success on an item corresponds to success on the test.

Standards Alignment to NC Standards

Question	ID	Standard Description
1 - Multiple Choice	CCSS.Math.Content.4.NF.A.2	Compare two fractions with different numerators and different

denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

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- 2 - Multiple Choice** **CCSS.Math.Content.4.NF.C.7** Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.
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- 3 - Multiple Choice** **CCSS.Math.Content.4.NBT.A.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
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- 4 - Multiple Choice** **CCSS.Math.Content.4.NBT.B.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
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- 5 - Multiple Choice** **CCSS.Math.Content.4.NBT.B.5** Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
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- 6 - Multiple Choice** **CCSS.Math.Content.4.NBT.B.6** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
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- 7 - Multiple Choice** **CCSS.Math.Content.4.NBT.B.6** Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
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- 8 - Multiple Choice** **CCSS.Math.Content.4.NF.B.3** Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.
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- 9 - Multiple Choice** **CCSS.Math.Content.4.NF.B.3** Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.
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- 10 - Multiple Choice** **CCSS.Math.Content.4.NF.B.3** Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.
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- 11 - Multiple Choice** **CCSS.Math.Content.4.NF.B.3** Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.
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- 12 - Multiple Choice** **CCSS.Math.Content.4.NF.B.3c** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
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- 13 - Multiple Choice** **CCSS.Math.Content.4.NF.B.3c** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.
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- 14 - Multiple Choice** **CCSS.Math.Content.4.NBT.A.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
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- 15 - Multiple Choice** **CCSS.Math.Content.4.NBT.A.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
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- 16 - Multiple Choice** **CCSS.Math.Content.4.NBT.A.2** Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
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- 17 - Multiple Choice** **CCSS.Math.Content.4.NF.A.2** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or

by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

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- 18 - Multiple Choice CCSS.Math.Content.4.NF.A.2** Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.
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- 19 - Multiple Choice CCSS.Math.Content.4.OA.C.5** Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.
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- 20 - Multiple Choice CCSS.Math.Content.4.MD.A.1** Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36),...
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- 21 - Multiple Choice CCSS.Math.Content.4.G.A.1** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
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- 22 - Multiple Choice CCSS.Math.Content.4.G.A.1** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
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- 23 - Multiple Choice CCSS.Math.Content.4.MD.A.1** Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36),...
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- 24 - Multiple Choice CCSS.Math.Content.4.NBT.A.3** Use place value understanding to round multi-digit whole numbers to any place.
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- 25 - Multiple Choice CCSS.Math.Content.4.G.A.2** Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
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- 26 - Multiple Choice CCSS.Math.Content.4.MD.C.6** Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
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- 27 - Multiple Choice CCSS.Math.Content.4.G.A.2** Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
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- 28 - Multiple Choice CCSS.Math.Content.4.G.A.2** Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
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- 29 - Multiple Choice CCSS.Math.Content.4.MD.A.3** Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.
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- 30 - Multiple Choice CCSS.Math.Content.4.NBT.A.3** Use place value understanding to round multi-digit whole numbers to any place.
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- 31 - Multiple Choice CCSS.Math.Content.4.NF.C.6** Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate

0.62 on a number line diagram.

32 - Multiple Choice CCSS.Math.Content.4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

33 - Multiple Choice CCSS.Math.Content.4.NF.A.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

34 - Multiple Choice CCSS.Math.Content.4.NF.A.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

35 - Multiple Choice CCSS.Math.Content.4.NBT.A.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

36 - Multiple Choice CCSS.Math.Content.4.NBT.A.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division.

37 - Multiple Choice CCSS.Math.Content.4.NF.A.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

38 - Multiple Choice CCSS.Math.Content.4.NF.A.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

39 - Multiple Choice CCSS.Math.Content.4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

40 - Multiple Choice CCSS.Math.Content.4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.
