

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

### Data Selections

**Institution(s):** All School Types,All Schools  
**Benchmark Administration:** 05/21/15, 2014-2015 BA3 1st Math  
**Trend Profile:** 2014-2015  
**Subject:** Mathematics  
**Test Focus:** Mathematics  
**Test Level:** All Benchmark Test Levels  
**Test Category:** District Benchmark  
**Grade:** All Grade Levels  
**Enrollment:** Current

Number of questions: 33  
 Number of test-taking students: 1469

### 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	76%	A	24%	23%	B	1	1122 / 1469	0.76	0.61
2 - Multiple Choice	92%	A	8%	8%	B	1	1354 / 1469	0.92	0.38
3 - Multiple Choice	84%	A	16%	16%	B	1	1231 / 1469	0.84	0.59
4 - Multiple Choice	83%	A	17%	17%	B	1	1212 / 1469	0.83	0.59
5 - Multiple Choice	92%	A	8%	8%	B	1	1350 / 1469	0.92	0.55
6 - Multiple Choice	88%	A	12%	12%	B	1	1294 / 1469	0.88	0.62
7 - Multiple Choice	92%	A	8%	8%	B	1	1348 / 1469	0.92	0.53
8 - Multiple Choice	95%	A	5%	5%	B	1	1393 / 1469	0.95	0.59
9 - Multiple Choice	76%	A	24%	24%	B	1	1118 / 1469	0.76	0.50
10 - Multiple Choice	93%	A	7%	7%	B	1	1363 / 1469	0.93	0.56
11 - Multiple Choice	77%	A	23%	22%	B	1	1138 / 1469	0.78	0.58
12 - Multiple Choice	92%	A	8%	8%	B	1	1349 / 1469	0.92	0.56
13 - Multiple Choice	86%	A	14%	14%	B	1	1265 / 1469	0.86	0.54

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14 - Multiple Choice	91%	A	9%	9%	B	1	1332 / 1469	0.91	0.48
15 - Multiple Choice	88%	A	12%	12%	B	1	1288 / 1469	0.88	0.50
16 - Multiple Choice	84%	A	16%	16%	B	1	1237 / 1469	0.84	0.56
17 - Multiple Choice	89%	A	11%	11%	B	1	1305 / 1469	0.89	0.52
18 - Multiple Choice	90%	A	10%	10%	B	1	1321 / 1469	0.90	0.62
19 - Multiple Choice	84%	A	16%	16%	B	1	1237 / 1469	0.84	0.56
20 - Multiple Choice	80%	A	20%	20%	B	1	1171 / 1469	0.80	0.51
21 - Multiple Choice	93%	A	7%	7%	B	1	1360 / 1469	0.93	0.48
22 - Multiple Choice	93%	A	7%	7%	B	1	1369 / 1469	0.93	0.45
23 - Multiple Choice	95%	A	5%	5%	B	1	1391 / 1469	0.95	0.56
24 - Multiple Choice	91%	A	9%	9%	B	1	1336 / 1469	0.91	0.56
25 - Multiple Choice	96%	A	4%	4%	B	1	1407 / 1469	0.96	0.41
26 - Multiple Choice	96%	A	4%	4%	B	1	1404 / 1469	0.96	0.47
27 - Multiple Choice	60%	A	40%	39%	B	1	888 / 1469	0.60	0.53
28 - Multiple Choice	71%	A	29%	29%	B	1	1040 / 1469	0.71	0.58
29 - Multiple Choice	96%	A	4%	3%	B	1	1417 / 1469	0.96	0.42
30 - Multiple Choice	94%	A	6%	6%	B	1	1377 / 1469	0.94	0.47
31 - Multiple Choice	93%	A	7%	7%	B	1	1364 / 1469	0.93	0.61
32 - Multiple Choice	85%	A	15%	14%	B	1	1255 / 1469	0.86	0.58
33 - Multiple Choice	91%	A	9%	8%	B	1	1344 / 1469	0.92	0.31
<b>Summary</b>	<b>87%</b>		<b>13%</b>				<b>1284 / 1469</b>		

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.

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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.

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## Standards Alignment to NC Standards

Question	ID	Standard Description
1 - Multiple Choice	CCSS.Math.Content.1.NBT.C.5	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
2 - Multiple Choice	CCSS.Math.Content.1.G.A.2	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. Students do not need to learn formal names such as "right rectangular prism."
3 - Multiple Choice	CCSS.Math.Content.1.NBT.C.4	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
4 - Multiple Choice	CCSS.Math.Content.1.NBT.C.6	Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
5 - Multiple Choice	CCSS.Math.Content.1.NBT.A.1	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
6 - Multiple Choice	CCSS.Math.Content.1.NBT.A.1	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
7 - Multiple Choice	CCSS.Math.Content.1.NBT.B.3	Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$ , $=$ , and $<$ .
8 - Multiple Choice	CCSS.Math.Content.1.NBT.B.2	Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
9 - Multiple Choice	CCSS.Math.Content.1.MD.A.1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
10 - Multiple Choice	CCSS.Math.Content.1.MD.B.3	Tell and write time in hours and half-hours using analog and digital clocks.
11 - Multiple Choice	CCSS.Math.Content.1.MD.B.3	Tell and write time in hours and half-hours using analog and digital clocks.
12 - Multiple Choice	CCSS.Math.Content.1.OA.C.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$ , one knows $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$ ).
13 - Multiple Choice	CCSS.Math.Content.1.OA.C.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number

leading to a ten (e.g.,  $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that  $8 + 4 = 12$ , one knows  $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding  $6 + 7$  by creating the known equivalent  $6 + 6 + 1 = 12 + 1 = 13$ ).

- 14 - Multiple Choice CCSS.Math.Content.1.OA.A.2** Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 15 - Multiple Choice CCSS.Math.Content.1.OA.A.1** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 16 - Multiple Choice CCSS.Math.Content.1.NBT.A.1** Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
- 17 - Multiple Choice CCSS.Math.Content.1.NBT.B.2** Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
- 18 - Multiple Choice CCSS.Math.Content.1.OA.B.3** Apply properties of operations as strategies to add and subtract. Students need not use formal terms for these properties. Examples: If  $8 + 3 = 11$  is known, then  $3 + 8 = 11$  is also known. (Commutative property of addition.) To add  $2 + 6 + 4$ , the second two numbers can be added to make a ten, so  $2 + 6 + 4 = 2 + 10 = 12$ . (Associative property of addition.)
- 19 - Multiple Choice CCSS.Math.Content.1.OA.B.3** Apply properties of operations as strategies to add and subtract. Students need not use formal terms for these properties. Examples: If  $8 + 3 = 11$  is known, then  $3 + 8 = 11$  is also known. (Commutative property of addition.) To add  $2 + 6 + 4$ , the second two numbers can be added to make a ten, so  $2 + 6 + 4 = 2 + 10 = 12$ . (Associative property of addition.)
- 20 - Multiple Choice CCSS.Math.Content.1.OA.B.4** Understand subtraction as an unknown-addend problem. For example, subtract  $10 - 8$  by finding the number that makes 10 when added to 8.
- 21 - Multiple Choice CCSS.Math.Content.1.OA.D.7** Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false?  $6 = 6$ ,  $7 = 8 - 1$ ,  $5 + 2 = 2 + 5$ ,  $4 + 1 = 5 + 2$ .
- 22 - Multiple Choice CCSS.Math.Content.1.OA.D.7** Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false?  $6 = 6$ ,  $7 = 8 - 1$ ,  $5 + 2 = 2 + 5$ ,  $4 + 1 = 5 + 2$ .
- 23 - Multiple Choice CCSS.Math.Content.1.OA.D.8** Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations  $8 + ? = 11$ ,  $5 = \_ - 3$ ,  $6 + 6 = \_$ .
- 24 - Multiple Choice CCSS.Math.Content.1.OA.D.8** Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations  $8 + ? = 11$ ,  $5 = \_ - 3$ ,  $6 + 6 = \_$ .
- 25 - Multiple Choice CCSS.Math.Content.1.G.A.1** Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
- 26 - Multiple Choice CCSS.Math.Content.1.MD.C.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
- 27 - Multiple Choice CCSS.Math.Content.1.MD.C.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in

each category, and how many more or less are in one category than in another.

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**28 - Multiple Choice CCSS.Math.Content.1.MD.C.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

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**29 - Multiple Choice CCSS.Math.Content.1.G.A.3** Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

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**30 - Multiple Choice CCSS.Math.Content.1.G.A.3** Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

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**31 - Multiple Choice CCSS.Math.Content.1.OA.C.5** Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

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**32 - Multiple Choice CCSS.Math.Content.1.OA.C.5** Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

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**33 - Multiple Choice CCSS.Math.Content.1.MD.A.2** Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

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