

Jones County School District

Assessment Blueprint 2013-2014

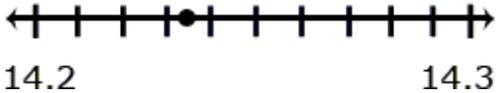
Grade/Subject Level: Fifth Grade Math

Team Members: J. Beech, A. Hinton, K. Padgett, D. Williams, W. Rogers, J. Holifield

Creating Summative / District Benchmark Tests

Weeks	Standard	Formative, Summative, or Both	Formative type assessment (i.e. windshield check, dry erase boards, exit tickets, multiple choice, journals, checklists, etc.)	Summative type Multiple Choice (MC) Constructed Response (CR) Extended Response (ER) Product (PRO) Portfolio (PORT)	Sample Test Item Use Stem Questions to increase rigor for items not found in ELS test bank. (See pages 32-34 on International Center for Leadership in Education Guide.)
1-2	<p>Math Number and Operations in Base Ten</p> <p>A. Understand the place value system.</p> <p>5.NBT.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it</p>	Both	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • "Scoot" • "Pencil Pair" 	MC, ER	<p>Example: The 2 in the number 542 is different from the value of the 2 in 324.</p>

1-2	represents in the place to its left.				
	5.NBT.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	Both		MC, ER	<p>Example: $2.5 \times 10^3 = 2.5 \times (10 \times 10 \times 10) = 2.5 \times 1,000 = 2,500$</p>
	<p>5.NBT.3. Read, write, and compare decimals to thousandths.</p> <p>a. Read and write decimals to thousandths using base-ten numerals, number names, and</p>	Both	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • "Scoot" 	MC, ER	<p>e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$.</p>

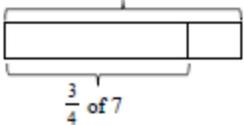
3-7	expanded form.		"Pencil Pair"		
	b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.	Both		MC, ER	Example: Comparing 0.25 and 0.17, a student might think, "25 hundredths is more than 17 hundredths".
7-15	5.NBT.4. Use place value understanding to round decimals to any place.	Both	Formative- <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • "Scoot" • "Pencil Pair" 	MC, ER	Example: Round 14.235 to the nearest tenth. 
	5.NBT.7 Add, subtract, multiply, and divide decimals to hundredths, 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	Both	Formative- <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • "Scoot" 	MC, ER	$3.6 + 1.7$ $5.4 - 0.8$ 6×2.4

	method and explain the reasoning used.		“Pencil Pair”		
	5.NBT.5. Fluently multiply multi-digit whole numbers using the standard algorithm.	Both	Formative- <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 	MC, ER	There are 225 dozen cookies in the bakery. How many cookies are there? Student 1 225×12 I broke 12 up into 10 and 2. $225 \times 10 = 2,250$ $225 \times 2 = 450$ $2,250 + 450 = 2,700$
	5.NBT.6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-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.	Both	Formative- <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 	MC, ER	Example: There are 1,716 students participating in Field Day. They are put into teams of 16 for the competition. How many teams get created? If you have left over students, what do you do with them?
	5.OA -. Write and interpret numerical expressions. 5.OA.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with	Both	Formative- <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a 	MC, ER	Example: $(26 + 18) \div 4$ Solution: 11 $\{[2 \times (3+5)] - 9\} + [5 \times (23-18)]$ Solution: 32 $12 - (0.4 \times 2)$ Solution: 11.2

16-18	these symbols.		Bucket <ul style="list-style-type: none"> • “Scoot” • “Pencil Pair” 		
	5.OA.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	Both	Formative- <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 	MC, ER	<i>For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times \{8 + 7\}$. Recognize that $3 \times \{18932 + 921\}$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.</i>
19- 21	Number and Operations— Fractions — 5.NF A. Use equivalent fractions as a strategy to add and subtract fractions. 1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. 2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators,	Both	Formative- <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 	MC, ER	<i>For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)</i> <i>For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$</i>

	e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.				
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<p>22-23</p>	<p>Number and Operations— Fractions 5.NF B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p> <p>3. Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p> <p>4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <p>a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.</p> <p>b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is</p>	<p>Both</p>	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 	<p>MC, ER</p>	<p><i>For example, interpret $3/4$ as the result of dividing 3 by 4, noting that $3/4$ multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size $3/4$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</i></p> <p><i>For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)</i></p> <div data-bbox="1302 1153 1911 1356" style="border: 1px solid black; padding: 5px;"> <p>Example 1: Tyrone had a chocolate bar, of which he gave one-half to his friend Nora. Nora gave one-half of her piece to her friend Eduardo. What fractional part of the original chocolate bar did Eduardo get?</p>  </div>
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	<p>the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas</p>				
24	<p>Number and Operations— Fractions — 5.NF.B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p> <p>5. Interpret multiplication as scaling (resizing), by:</p> <p>a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.</p> <p>b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of</p>	<p>Both</p>	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 	<p>MC, ER</p>	<p>Examples.</p> <p>a. $\frac{3}{4} \times 7$ is less than 7 because 7 is multiplied by a factor less than 1 so the product must be less than 7.</p>  <p>b. Mrs. Bennett is planting two flowerbeds. The first flowerbed is 5 meters long and $\frac{6}{5}$ meters wide. The second flowerbed is 5 meters long and $\frac{5}{6}$ meters wide. How do the areas of these two flowerbeds compare? Is the value of the area larger or smaller than 5 square meters? Draw pictures to prove your answer.</p>

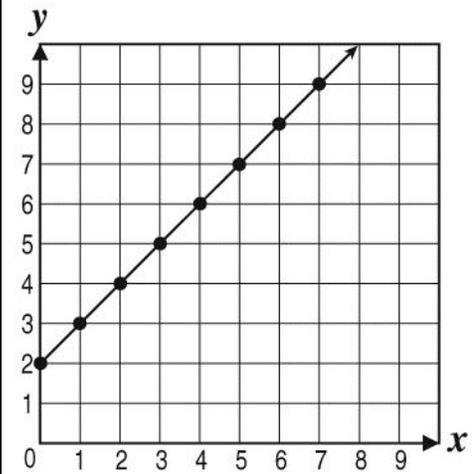
	<p>fraction equivalence $a/b = (nxa)/(nxb)$ to the effect of multiplying a/b by 1.</p> <p>6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.</p>			<p>Sarah shared $\frac{1}{2}$ of her sandwich with Jason. Jason ate only $\frac{2}{3}$ of what Sarah gave him. What fraction of the whole sandwich did Jason eat?</p> <p>There were 18 brownies in a pan. Danny sold $2\frac{2}{3}$ of them during his shift at the bake sale. Which expression shows how many brownies Danny sold?</p>	
25	<p>7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.</p> <p>a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.</p> <p>b. Interpret division of a whole number by a unit fraction, and compute such quotients.</p>	Both	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • "Scoot" • "Pencil Pair" 	MC, ER	<p>a. For example, create a story context for $(\frac{1}{3}) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(\frac{1}{3}) \div 4 = \frac{1}{12}$ because $(\frac{1}{12}) \times 4 = \frac{1}{3}$.</p> <p>b. For example, create a story context for $4 \div (\frac{1}{5})$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (\frac{1}{5}) = 20$ because $20 \times (\frac{1}{5}) = 4$</p>
	Number and Operations— Fractions — 5.NF	Both	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards 	MC, ER	

26	<p>B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.</p> <p>7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.¹</p> <p>c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.</p>		<ul style="list-style-type: none"> • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 		<p><i>For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3-cup servings are in 2 cups of raisins?</i></p>
27	<p>Measurement and Data — 5.MD</p> <p>B. Represent and interpret data.</p> <p>2. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in</p>	Both	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 	MC, ER	<p><i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i></p>

	line plots.				
28	<p>Operations and Algebraic Thinking — 5.OA</p> <p>B. Analyze patterns and relationships.</p> <p>3. Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.</p> <p>Geometry — 5.G</p> <p>A. Graph points on the coordinate plane to solve real-world and mathematical problems.</p> <p>1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number</p>	Both	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 	MC, ER	<p><i>For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</i></p> <p>Ex. 1. The graph of the equation $y=x+2$ is shown.</p>

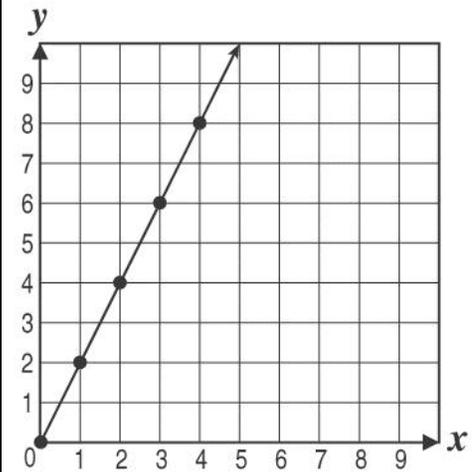
indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).

2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

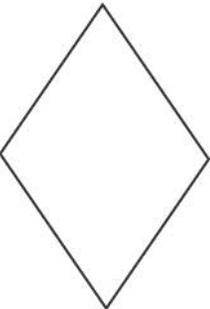


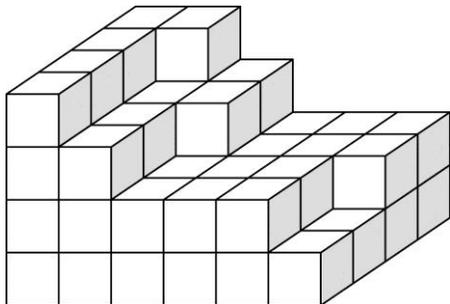
Which point is on this graph?

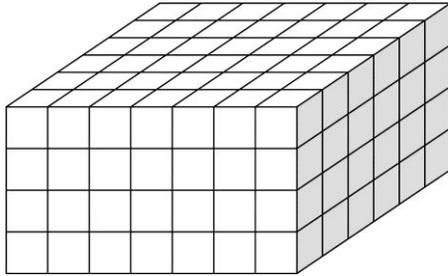
Ex. 2. The graph shows several points on a straight line.



Which ordered pair identifies a marked point on this line?

29	<p>Geometry — 5.G</p> <p>B. Classify two-dimensional figures into categories based on their properties.</p> <p>3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.</p> <p>4. Classify two-dimensional figures in a hierarchy based on properties.</p>	Both	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • “Scoot” • “Pencil Pair” 	MC, ER	<p><i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i></p> <p>The figure has sides all the same length.</p>  <p>Which most accurately describes this figure?</p>
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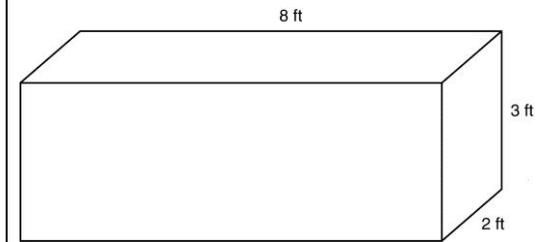
<p>30</p>	<p>Measurement and Data — 5.MD</p> <p>C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p> <p>3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</p> <p>a. A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.</p> <p>b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.</p> <p>4. Measure volumes by counting unit cubes, using cubic cm, cubic</p>	<p>Both</p>	<p>Formative-</p> <ul style="list-style-type: none"> • Dry erase boards • Exit Problems • Review previous assessments • Drops in a Bucket • "Scoot" • "Pencil Pair" 	<p>MC, ER</p>	<p>3.a Pauli wants to determine the volume of a rectangular prism. Which measure would be appropriate for his answer?</p> <p>A. units B. cubic units C. square units D. cubic square units</p> <p>3.b Henry created the model below using 1-centimeter cubes.</p>  <p>What is the volume of this model, in cubic centimeters?</p> <p>Sarah's backpack can hold several of her books.</p>
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	in, cubic ft, and improvised units.				<p>Which could be the volume of her backpack?</p> <p>A. 80 inches B. 80 circular inches C. 80 square inches D. 80 cubic inches</p>
31-32	<p>Measurement and Data — 5.MD</p> <p>C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.</p> <p>5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.</p> <p>a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.</p>				<p>The model below was created using 1-centimeter cubes.</p>  <p>Victor used the expression below to determine the volume, in cubic centimeters, of the model.</p> <p>$(7 \times 4) \times 6$</p> <p>Which expression could also be used to determine the volume, in cubic centimeters, of the model?</p>

b. Apply the formulas $V=l \times w \times h$ and $V=b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole- number edge lengths in the context of solving real world and mathematical problems.

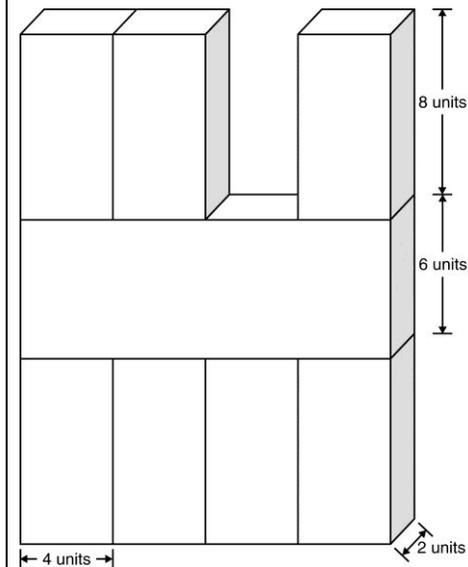
c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

The dimensions of a rectangular prism are modeled below.



Which equation shows one way to find the volume, in cubic feet, of this rectangular prism?

The solid figure below is made up of 7 smaller blocks that are the same size and 1 larger block.



What is the volume, in cubic units, of the figure?