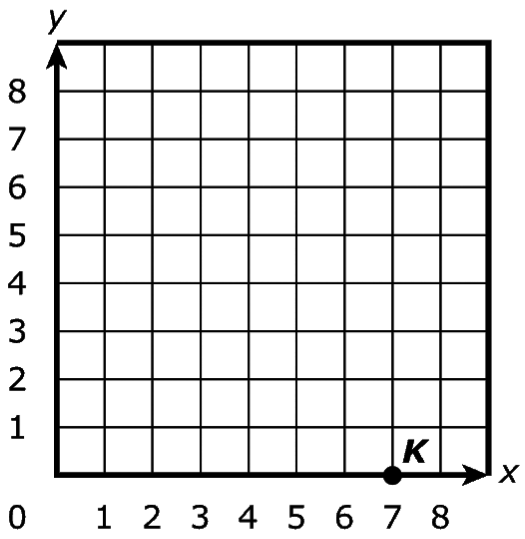
Kentucky Summative Assessments

Grade 5 Mathematics
Released Items
2023

MA0520173

1 The coordinate plane shows the location of point *K*.



Which ordered pair can be used to describe the location of point *K*?

Enter **only** your answer in the space provided.

(□, □)

Released Item Performance

Kentucky Summative Assessments

Spring 2023
Grade 5
Mathematics

Item: MA0520173*
Book Question Number: 1

Standard: KY.5.G.1

Item Type: TE
Key: see below

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Score Percentages	
				Score 0 (%)	Score 1 (%)
All Students	**20,499**	70.9%	0.71	29%	71%
Gender					
Female	**9,997**	70.4%	0.70	30%	70%
Male	**10,501**	71.4%	0.71	29%	71%
Ethnicity					
African American	**2,018**	53.2%	0.53	47%	53%
American Indian or Alaska Native	**25**	76.0%	0.76	24%	76%
Asian	**460**	81.3%	0.81	19%	81%
Hispanic or Latino	**1,608**	67.1%	0.67	33%	67%
Native Hawaiian or Pacific Islander	**36**	63.9%	0.64	36%	64%
White (non-Hispanic)	**15,244**	73.5%	0.74	26%	74%
Two or more races	**1,107**	68.3%	0.68	32%	68%
Migrant	**97**	69.1%	0.69	31%	69%
English Learner	**951**	57.4%	0.57	43%	57%
Economically Disadvantaged	**12,409**	65.5%	0.66	34%	66%
Students with Disabilities	**2,424**	56.4%	0.56	44%	56%

Key: Student response is to enter 7 in gap1 and 0 in gap2. Note: Equivalent numbers are acceptable in each gap.

* Calculator section

2

MA0520064_2

A game takes a total of 75 minutes to play. A student plays the game 4 times. What is the total number of hours that the student spends playing the game?

A 3

B 5

C 6

D 10

Released Item Performance

Kentucky Summative Assessments

Spring 2023
Grade 5
Mathematics

Item: MA0520064*
Book Question Number: 2

Standard: KY.5.MD.1

Item Type: MC
Key: B

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**22,936**	58%	0.58	18%	58%	11%	13%
Gender							
Female	**10,930**	52%	0.52	21%	52%	11%	15%
Male	**12,005**	62%	0.62	15%	62%	11%	11%
Ethnicity							
African American	**2,398**	39%	0.39	24%	39%	16%	21%
American Indian or Alaska Native	**26**	38%	0.38	38%	38%	12%	12%
Asian	**510**	75%	0.75	10%	75%	8%	7%
Hispanic or Latino	**2,064**	50%	0.50	21%	50%	14%	15%
Native Hawaiian or Pacific Islander	**42**	45%	0.45	24%	45%	19%	12%
White (non-Hispanic)	**16,666**	61%	0.61	17%	61%	11%	12%
Two or more races	**1,229**	55%	0.55	21%	55%	11%	13%
Migrant	**139**	50%	0.50	18%	50%	12%	21%
English Learner	**1,534**	42%	0.42	23%	42%	17%	18%
Economically Disadvantaged	**14,233**	51%	0.51	20%	51%	13%	16%
Students with Disabilities	**4,133**	39%	0.39	19%	39%	15%	27%

* Calculator section

3

MA0520045_3

A group of 5 students equally shares 3 cups of raisins. Each rectangle shown represents 1 whole cup that is divided into equal-sized sections. The shaded sections of the rectangles show how much of each of the 3 cups of raisins each student receives.

Which fraction represents the total amount of raisins, in cups, each student receives?

A $\frac{1}{5}$

B $\frac{1}{3}$

C $\frac{3}{5}$

D $\frac{15}{3}$

Released Item Performance

Kentucky Summative Assessments

Spring 2023
Grade 5
Mathematics

Item: MA0520045
Book Question Number: 3

Standard: KY.5.NF.3

Item Type: MC
Key: C

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**43,392**	37%	0.37	45%	11%	37%	7%
Gender							
Female	**20,901**	37%	0.37	46%	10%	37%	7%
Male	**22,489**	38%	0.38	43%	11%	38%	8%
Ethnicity							
African American	**4,405**	34%	0.34	40%	15%	34%	12%
American Indian or Alaska Native	**51**	27%	0.27	45%	18%	27%	10%
Asian	**967**	47%	0.47	40%	8%	47%	5%
Hispanic or Latino	**3,664**	34%	0.34	43%	13%	34%	9%
Native Hawaiian or Pacific Islander	**78**	41%	0.41	36%	12%	41%	12%
White (non-Hispanic)	**31,889**	38%	0.38	46%	10%	38%	7%
Two or more races	**2,336**	39%	0.39	42%	11%	39%	8%
Migrant	**236**	30%	0.30	42%	17%	30%	12%
English Learner	**2,479**	31%	0.31	42%	16%	31%	11%
Economically Disadvantaged	**26,609**	35%	0.35	44%	12%	35%	9%
Students with Disabilities	**6,556**	31%	0.31	41%	16%	31%	12%

4

MA0520059_2,4

Tanya has 4 granola bars to share with her classmates. Tanya divides each bar into pieces that are $\frac{1}{8}$ of the entire bar. Which equations show the relationship between the number of bars and the number of pieces Tanya has to share?

Select **two** correct answers.

A $4 \times \frac{1}{8} = \frac{4}{8}$

B $32 \times \frac{1}{8} = 4$

C $4 \div 8 = \frac{1}{2}$

D $4 \div \frac{1}{8} = 32$

E $32 \div \frac{1}{8} = 256$

Released Item Performance

Kentucky Summative Assessments

Spring 2023
Grade 5
Mathematics

Item: MA0520059
Book Question Number: 4

Standard: KY.5.NF.7.b

Item Type: MS
Key: B,D

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Score Percentages		
				Score 0 (%)	Score 1 (%)	Score 2 (%)
All Students	**22,740**	56.0%	1.12	21%	45%	33%
Gender						
Female	**10,840**	56.5%	1.13	20%	46%	33%
Male	**11,899**	55.5%	1.11	23%	44%	33%
Ethnicity						
African American	**2,357**	50.7%	1.01	24%	51%	25%
American Indian or Alaska Native	**26**	57.7%	1.15	23%	38%	38%
Asian	**509**	63.9%	1.28	17%	38%	45%
Hispanic or Latino	**2,044**	53.7%	1.07	22%	49%	29%
Native Hawaiian or Pacific Islander	**41**	58.5%	1.17	15%	54%	32%
White (non-Hispanic)	**16,538**	56.8%	1.14	21%	44%	35%
Two or more races	**1,224**	55.3%	1.11	22%	46%	32%
Migrant	**136**	52.6%	1.05	22%	51%	27%
English Learner	**1,515**	49.0%	0.98	25%	53%	23%
Economically Disadvantaged	**14,091**	53.0%	1.06	23%	48%	29%
Students with Disabilities	**4,061**	49.1%	0.98	26%	51%	24%

5

MA0520028_83268

What is the product of 3,084 × 27?

Enter your answer in the box.

Released Item Performance

Kentucky Summative Assessments

Spring 2023
Grade 5
Mathematics

Item: MA0520028
Book Question Number: 5

Standard: KY.5.NBT.5

Item Type: TE
Key: see below

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Score Percentages	
				Score 0 (%)	Score 1 (%)
All Students	**20,493**	49.3%	0.49	51%	49%
Gender					
Female	**9,995**	50.6%	0.51	49%	51%
Male	**10,497**	48.0%	0.48	52%	48%
Ethnicity					
African American	**2,017**	34.9%	0.35	65%	35%
American Indian or Alaska Native	**25**	40.0%	0.40	60%	40%
Asian	**460**	66.3%	0.66	34%	66%
Hispanic or Latino	**1,604**	45.0%	0.45	55%	45%
Native Hawaiian or Pacific Islander	**36**	52.8%	0.53	47%	53%
White (non-Hispanic)	**15,243**	51.4%	0.51	49%	51%
Two or more races	**1,107**	45.6%	0.46	54%	46%
Migrant	**97**	48.5%	0.48	52%	48%
English Learner	**950**	36.1%	0.36	64%	36%
Economically Disadvantaged	**12,403**	42.6%	0.43	57%	43%
Students with Disabilities	**2,427**	51.8%	0.52	48%	52%

Key: In Blank 1, the numeric response must be equal in value to 83268. Leading/trailing zeroes and unnecessary decimal points are ignored. Commas, if used, must be correctly placed. Answers using / to represent a fraction are not considered correct.

MA0520C4_00

A teacher recorded the standing long jump distances of 5 students. The data is shown in the table.

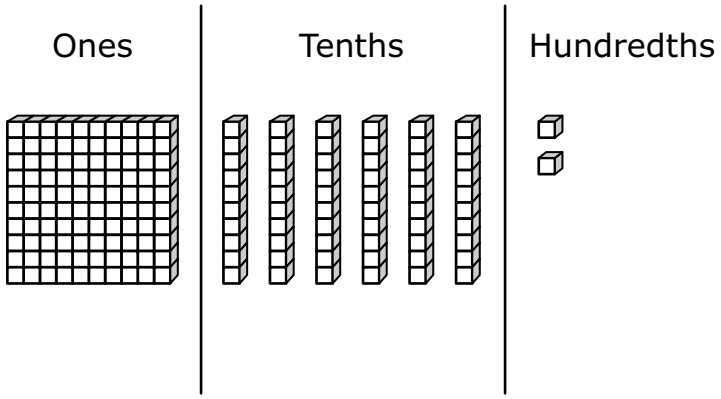
Standing Long Jump

Student	Distance (meters)
Nick	1.36
Sarah	1.62
Tyler	1.27
Blair	1.51
Maddie	1.54

6

MA0520C4_02

Sarah wants to find how much farther she jumped than Tyler jumped. She starts with the model shown.



- Explain how Sarah's model can be used to find how much farther Sarah jumped than Tyler jumped.
- How much farther, in meters, did Sarah jump than Tyler?

Enter your explanation and your answer in the space provided.

Released Item Performance

Kentucky Summative Assessments

Spring 2023
Grade 5
Mathematics

Item: MA0520C4_02
Book Question Number: 6

Standard: KY.5.NBT.7.b

Item Type: SA
Key: Rubric

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Score Percentages		
				Score 0 (%)	Score 1 (%)	Score 2 (%)
All Students	**42,850**	23.7%	0.47	55%	42%	3%
Gender						
Female	**20,703**	23.3%	0.47	57%	40%	3%
Male	**22,145**	24.1%	0.48	54%	44%	2%
Ethnicity						
African American	**4,283**	13.0%	0.26	75%	24%	1%
American Indian or Alaska Native	**50**	22.0%	0.44	60%	36%	4%
Asian	**965**	33.7%	0.67	40%	53%	7%
Hispanic or Latino	**3,621**	19.0%	0.38	64%	34%	2%
Native Hawaiian or Pacific Islander	**75**	24.7%	0.49	56%	39%	5%
White (non-Hispanic)	**31,558**	25.6%	0.51	52%	45%	3%
Two or more races	**2,296**	21.5%	0.43	59%	38%	2%
Migrant	**234**	15.6%	0.31	69%	30%	0%
English Learner	**2,434**	11.6%	0.23	77%	22%	1%
Economically Disadvantaged	**26,198**	19.3%	0.39	63%	35%	2%
Students with Disabilities	**6,419**	15.4%	0.31	71%	28%	1%

Rubric	
Score Point 2	Student demonstrates a complete understanding of relating a strategy for subtracting decimals to a written strategy and explaining the reasoning used.
Score Point 1	Student demonstrates a minimal understanding of relating a strategy for subtracting decimals to a written strategy and explaining the reasoning used.
Score Point 0	Student response is completely incorrect or irrelevant.

Score Points	• Score 2 points:
	  ○ Valid explanation of how to use the model to find how much farther Sarah jumped than Tyler jumped. **AND**
	  ○ Correct answer.
	
	• Score 1 point:
	  ○ Complete explanation of how to use the model to find how much farther Sarah jumped then Tyler jumped. **OR**
	  ○ Correct answer. **OR**
	  ○ Minor error in explanation resulting in an incorrect but reasonable answer to how much farther Sarah jumped.

Correct Answers	To subtract Tyler's distance from Sarah's using the model, remove 1 ones block, 2 tenths blocks, and 7 hundredths blocks. Since the model does not have 7 hundredths blocks, Sarah should take one of her tenths blocks and split it up so that the model has ten additional hundredths blocks. This would leave the model with nothing in the ones place. Since Sarah took away 2 tenths blocks and moved one of the tenth's blocks to the hundredths place, the model will have 3 tenths blocks left. Sarah added 10 hundredths blocks, but then took away 7, leaving 5 hundredths. Sarah jumped 0.35 meters farther than Tyler.

Anchor Set

A1

sarah jumped $\frac{35}{10}$ $farther$ than tyler jumped i know this because i subtracted 35 by 1.62.After that i got 1.27 and knew that 27 plus 35 was 62.Also i knew that the number to the right of the decimal is the tenths.That is how i got $\frac{35}{10}$

Anchor Annotation, Paper 1
Score Point 0

This response receives no credit. It includes none of the required elements.

There is no explanation of how to use the model (i subtracted 35 by 1.62. After that i got 1.27 and knew that 27 plus 35 was 62.Also i knew that the number to the right of the decimal is the tenths). A valid explanation needs to address how the model can be used to find how much farther Sarah jumped. There is no process that shows how Tyler's distance is being subtracted from the model showing Sarah's distance.

An incorrect answer is provided for how much farther Sarah jumped than Tyler ($\frac{35}{10}$). It should state 35 hundredths, not tenths.

A2

Sarah's model can be used by doing 2 hundreds plus 60 tenths plus 100 ones.

Anchor Annotation, Paper 2
Score Point 0

This response receives no credit. It includes none of the required elements.

There is no explanation of how to use the model (Sarah's model can be used by doing 2 hundreds plus 60 tenths plus 100 ones). Although there is a reference to the model, there is no process that shows how Tyler's distance is being subtracted from the model showing Sarah's distance.

There is no answer provided for how much farther Sarah jumped than Tyler.

A3

sarah 1.62 become she jumping to how log can she jumping.

Anchor Annotation, Paper 3
Score Point 0

This response receives no credit. It includes none of the required elements.

There is no explanation of how to use the model provided.

An incorrect answer is provided (1.62). It is unclear if this is just repeating the distance Sarah jumped, or providing an answer.

A4

Sarah’s model can be used to find how much farther Sarah jumped than Tyler, by using the blocks.She would use 1 one block, 2 tenth blocks, and 7 hundredth blocks, then do the same with her block number and take away Tyler’s number from hers to get her answer which would be 0.35 meters.

Anchor Annotation, Paper 4
Score Point 1

This response receives partial credit. It includes one of the two required elements.

- Determines how much farther Sarah jumped than Tyler (0.35).

The explanation of how to use the model is inadequate (by using the blocks.She would use 1 one block, 2 tenth blocks, and 7 hundredth blocks, then do the same with her block number and take away Tyler’s number from hers). The explanation lacks specificity for how the model is being used. Note that identifying the place values of Tyler’s distance, for instance, “take away ten from the tenths” is too vague and does not clearly show how it is being subtracted from Sarah’s values in the given model.

A5

Sarah's model can be used to find how much farther Sarah jumped than Tyler by marking out whatever Tyler had so he had the same amount of ones as Sarah so you would mark out all of the ones. Then mark out however many tenths Tyler had. Then you would mark out the two hundredths ,and then mark out five of one of the tenths and whatever you didn't shade that is how much farther Sarah jumped than tyler.

Anchor Annotation, Paper 5
Score Point 1

This response receives partial credit. It includes one of the two required elements.

- A valid explanation of how to use the model is provided (by marking out whatever Tyler had so he had the same amount of ones as Sarah so you would mark out all of the ones. Then mark out however many tenths Tyler had. Then you would mark out the two hundredths, and then mark out five of one of the tenths and whatever you didn't shade that is how much farther Sarah jumped). The response identifies subtracting the ones and then addresses a process of marking off the 27ths from the remaining 62nds. Crossing off or marking out the values to represent the subtraction is an acceptable process.

There is no answer provided for how much farther Sarah jumped than Tyler.

A6

All Sarah has to do is subtract. I subtracted 1.62 − 1.27 = 0.35. Sarah jumped 0.35 meters farther than Tyler.

Anchor Annotation, Paper 6
Score Point 1

This response receives partial credit. It includes one of the two required elements.

- Determines how much farther Sarah jumped than Tyler (0.35).

There is no explanation of how to use the model (I subtracted 1.62 - 1.27). Although the subtraction of the two distances will find the difference, it does not address the model. A valid explanation needs to address how the model can be used to find how much farther Sarah jumped.

A7

Sarahs model shows how much farther she jumped than tyler because you can subtract tylers score from sarahs cubes to see how much farther sarah jumped than tyler, every hundred cubed would stand for one whole number. For example you can subtract 100 cubes from Sarah and subtrct one whole number from tyler. Next you must subtraact 20 cubes from Sarah and 0.2 meters from Tyler. Net you must get rid of one of Sarahs tenths to give her 10 hundredths. Finally you can subtract seven cubes from Sarah and get rid of Tylers jump distance to get a final answer of 0.35 meters.

Anchor Annotation, Paper 7
Score Point 2

This response receives full credit. It includes each of the two required elements.

- A valid explanation of how to use the model is provided (you can subtract tylers score from sarahs cubes...For example you can subtract 100 cubes from Sarah and subtrct one whole number from tyler. Next you must subtraact 20 cubes from Sarah and 0.2 meters from Tyler. Net you must get rid of one of Sarahs tenths to give her 10 hundredths. Finally you can subtract seven cubes from Sarah and get rid of Tylers jump distance). The explanation describes the correct subtraction of Tyler's values from Sarah's values using the model.

Note: The subtraction of 100 cubes and one whole leaves just the decimal values of 0.62 and 0.27, subtract 20 cubes and .2 results in 0.42 and 0.07, subtract seven cubes then leaves Tyler with zero and Sarah with 0.35.

- Determines how much farther Sarah jumped than Tyler (0.35).

A8

First you see that their are only 2 hundredths and you can't take 7 away so you split up the tenths and you add 10 hundredths now you take away 7 and you subtract 5 − 2 = 3 than you take away 1 − 1 = 0 then you count up the rest, and sarah jumped 0.35 farther than tyler

Anchor Annotation, Paper 8
Score Point 2

This response receives full credit. It includes each of the two required elements.

- A valid explanation of how to use the model is provided (there are only 2 hundredths and you can't take 7 away so you split up the tenths and you add 10 hundredths now you take away 7 and you subtract 5 - 2 = 3 then you take away 1 - 1 = 0 then you count up the rest). The explanation describes the correct subtraction of Tyler's values from Sarah's values using the model. By moving one of the tenths over to the hundredth's column, the place values can be subtracted; one from the Ones, 2 of the tenths from the 5 remaining tenths and 7 from now twelve hundredths.

- Determines how much farther Sarah jumped than Tyler (0.35). The label of meters is not required for credit.

Sarah's model can be used to find how much more she jumped than Tyler by marking out what he jumped. For example 1 − 1 and 62 − 27. Except, using her model she can cross it out to represent the subtraction she is doing. Sarah jumped 0.35 more meters than Tyler 62 − 27 = 35.

Anchor Annotation, Paper 9
Score Point 2

This response receives full credit. It includes each of the two required elements.

- A valid explanation of how to use the model is provided (by marking out what he jumped. For example 1 - 1 and 62 - 27. Except, using her model she can cross it out to represent the subtraction she is doing). The response identifies subtracting the ones and then addresses a process of crossing off the 27ths from the remaining 62nds. Crossing off the values to represent the subtraction is an acceptable process.

- Determines how much farther Sarah jumped than Tyler (0.35).

7

MA0520002_1

What is the value of $[3 \times (7 + 5)] - 2$?

A 34

B 30

C 24

D 20

Released Item Performance

Kentucky Summative Assessments

Spring 2023
Grade 5
Mathematics

Item: MA0520002
Book Question Number: 7

Standard: KY.5.OA.1

Item Type: MC
Key: A

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**34,890**	81%	0.81	81%	7%	11%	2%
Gender							
Female	**16,856**	82%	0.82	82%	7%	10%	2%
Male	**18,033**	80%	0.80	80%	7%	11%	1%
Ethnicity							
African American	**3,560**	65%	0.65	65%	12%	20%	3%
American Indian or Alaska Native	**38**	82%	0.82	82%	11%	8%	0%
Asian	**774**	89%	0.89	89%	4%	6%	1%
Hispanic or Latino	**3,020**	76%	0.76	76%	9%	13%	2%
Native Hawaiian or Pacific Islander	**63**	76%	0.76	76%	6%	16%	2%
White (non-Hispanic)	**25,543**	83%	0.83	83%	6%	9%	1%
Two or more races	**1,891**	79%	0.79	79%	7%	12%	1%
Migrant	**200**	75%	0.75	75%	10%	13%	3%
English Learner	**2,107**	64%	0.64	64%	14%	19%	4%
Economically Disadvantaged	**21,491**	76%	0.76	76%	9%	13%	2%
Students with Disabilities	**5,524**	62%	0.62	62%	11%	23%	4%

8

MA0520007_3

Two patterns are described.

- Pattern P: Start with 0 and add 4.
- Pattern Q: Start with 0 and add 2.

Which statement is true?

A The 10th term in Pattern P is $\frac{1}{2}$ the value of the 10th term in Pattern Q.

B The 10th term in Pattern P is $\frac{1}{4}$ the value of the 10th term in Pattern Q.

C The 10th term in Pattern P is 2 times the value of the 10th term in Pattern Q.

D The 10th term in Pattern P is 4 times the value of the 10th term in Pattern Q.

STOP

Released Item Performance

Kentucky Summative Assessments

Spring 2023
Grade 5
Mathematics

Item: MA0520007
Book Question Number: 8

Standard: KY.5.OA.3.a

Item Type: MC
Key: C

Student Group	Number of Students	Percent Correct	Average Item Score	Item Breakout Statistics - Answer Choice Options			
				A (%)	B (%)	C (%)	D (%)
All Students	**34,887**	59%	0.59	17%	14%	59%	10%
Gender							
Female	**16,851**	56%	0.56	17%	15%	56%	11%
Male	**18,035**	61%	0.61	16%	13%	61%	9%
Ethnicity							
African American	**3,559**	46%	0.46	18%	21%	46%	14%
American Indian or Alaska Native	**38**	58%	0.58	18%	11%	58%	13%
Asian	**774**	68%	0.68	13%	11%	68%	8%
Hispanic or Latino	**3,017**	51%	0.51	18%	18%	51%	13%
Native Hawaiian or Pacific Islander	**63**	60%	0.60	11%	22%	60%	6%
White (non-Hispanic)	**25,545**	61%	0.61	16%	13%	61%	10%
Two or more races	**1,890**	57%	0.57	16%	17%	57%	10%
Migrant	**200**	45%	0.45	18%	25%	45%	13%
English Learner	**2,105**	40%	0.40	18%	25%	40%	17%
Economically Disadvantaged	**21,491**	53%	0.53	17%	17%	53%	12%
Students with Disabilities	**5,527**	44%	0.44	18%	22%	44%	16%

Investing in Kentucky's Future, One Student at a Time