# BUILDING CAPACITY FOR COLLEGE AND CAREER READINESS: LESSONS LEARNED FROM NAEP ITEM ANALYSES 

Council of the Great City Schools


## Overview

This analysis explores national, state and district performance on a sample of NAEP and college and career ready consortia (PARCC and SBAC) items that are similar to one another in type and complexity. The analysis explores student response patterns and sample responses on multiple-choice items, short constructed-response items, and extended constructed-response items on 2013 reading and mathematics assessments. Implications for instructional practices essential for student success on college and career ready standards are also explored.

## How are NAEP Questions Used?

The questions on the NAEP Questions Tool are meant to be used by teachers, parents, students, and others as examples of what NAEP asks students at grades 4, 8, and 12 in main state NAEP, and at ages 9,13 , and 17 for longterm trend NAEP. The questions also provide exemplars of what the assessment asks of students to assess their specific content knowledge and to compare individual student performance on a specific question with that of students across the state and the nation.

## NAEP MATHEMATICS ITEMS

2013

## Math Example 1

- In the PARCC and SBAC examples released to date, students are asked to respond to an item with multiple parts (Part A, Part B, Step 1, Step 2, Step 3, etc.).
- Multistep problems are expected to be common on both the PARCC and SBAC Assessments.
- On a sample multistep item on NAEP, only twenty-three percent of students in Trial Urban Districts (TUDA) and thirty-two percent of students nationwide answered the item completely correctly.


## Sample Grade 3-5 PARCC Math

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HOME / TEST 1 / PART 2: GRADE 3-5 MATH SAMPLE ITEMS / 5 OF 6
```

Ms. Morales has a bag of beads.

- She gives Elena 5 beads.
- She gives Damian 8 more beads than Elena.
- She gives Trish 4 times as many beads as Damian.

Ms. Morales then has 10 beads left in the bag.

## Part A

How many beads did Damian and Trish each receive? Show or explain how you arrived at each answer.


## Part B

How many beads were in Ms. Morales' bag before any beads were given to students?
Enter your answer in the box.

## Sample Grade 6-8 SBAC Math

## 43328

Jared is testing how much weight a bag can hold. He plans to put juice bottles into three bags. He wants each bag to have a total weight within the given range.

- Drag juice bottles into each bag so that the weight is within the given range.
- Leave the bag empty if the given range is not possible using juice bottles.



## Sample Mathematics Question and Detail

Use centimeters in this question


Which path from the tree to the tent is longer, path A or path B ?

Answer: $\qquad$
How much longer?
Answer:
centimeters

Description: Measure and compare distances on a path
Grade: 4
Year: 2013
Type of Question: Short Constructed Response
Difficulty: Medium (40.49\% Correct)
Content Area:
Measurement
Complexity:
Moderate

## How are students scored?

## Correct

Answers path B and 3 centimeters (accept 2.9 to 3.1 cm )

## Partial 1

Answers path A with 3 centimeters, with or without showing lengths of segments (If work is shown and reflects an obvious mistake, then the response is scored as Incorrect 2.)

## Partial 2

Answers path $B$ with 16 on the answer line
Partial 3
Correctly measures each segment on path or labels total length of path $A$ and path $B$ (it must be clear which numbers go with the paths by showing lengths next to the path or by showing lengths of segments)
The difference in length may or may not be correct based on the measurements shown

## Partial 4

Measures 4 of the 5 segments correctly and has correct difference in length based on these measurements Incorrect 1
Answers path B with 2 on the answer line, with or without work
(This assumes the result is from computing 7-5. If work is shown and reflects an obvious mistake, then the response is scored as Incorrect 2.)

## Incorrect 2

All other incorrect responses

## Sample Student Response



Which path from the tree to the tent is longer, path A or path B ?
Answer: path A

How much longer?
Answer: $\qquad$ centimeters

## Partial 1

## Sample Student Response



## Sample Student Response

Use centimeters in this question.

student response
Which path from the tree to the tent is longer, path $A$ or path $B$ ?

Answer: Path $A$
student response
How much longer?
Answer:
4
centimeters
student response
Incorrect 2

## How Did Students in Urban Districts Answer This Question?

| Urban Districts | $\begin{gathered} \text { Incorrect } \\ 2 \end{gathered}$ | Incorrect $1$ | Partial 4 | Partial 3 | Partial 2 | Partial 1 | Correct | Omitted |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| National Public | 48 | 4 | 2 | 3 | 6 | 4 | 32 | 1 |
| Albuquerque | 51 | 3 | 2 | 3 | 5 | 6 | 29 | 1 |
| Atlanta | 65 | 3 | 2 | 1 | 4 | 3 | 21 | 2 |
| Austin | 38 | 2 | 5 | 7 | 8 | 4 | 35 | 1 |
| Baltimore City | 67 | 7 | 1 | 1 | 8 | 2 | 14 | \# |
| Boston | 50 | 3 | 2 | 4 | 10 | 3 | 25 | 2 |
| Charlotte | 50 | 5 | 4 | 2 | 2 | 3 | 33 | \# |
| Chicago | 56 | 4 | 1 | 3 | 7 | 3 | 25 | 1 |
| Cleveland | 70 | 5 | 1 | 2 | 4 | 1 | 15 | 2 |
| Dallas | 48 | 4 | 4 | 8 | 10 | 2 | 22 | 1 |
| Detroit | 79 | 2 | \# | 3 | 6 | \# | 8 | 1 |
| District of Columbia (DCPS) | 58 | 2 | 1 | 2 | 6 | 6 | 23 | 1 |
| Fresno | 72 | 4 | 1 | 2 | 8 | 2 | 10 | 1 |
| Hillsborough County | 42 | 4 | 3 | 2 | 14 | 2 | 32 | 1 |
| Houston | 45 | 4 | 5 | 9 | 10 | 3 | 24 | 1 |
| Jefferson County (KY) | 59 | 3 | \# | 1 | 6 | 4 | 27 | 1 |
| Los Angeles | 66 | 4 | 1 | 1 | 7 | 2 | 18 | 1 |
| Miami-Dade | 49 | 5 | 3 | 3 | 12 | 2 | 25 | \# |
| Milwaukee | 58 | 4 | \# | 3 | 8 | 3 | 23 | 1 |
| New York City | 49 | 2 | 1 | 5 | 10 | 3 | 29 | \# |
| Philadelphia | 61 | 7 | \# | 3 | 9 | 2 | 16 | 2 |
| San Diego | 53 | 4 | 2 | 5 | 8 | 3 | 25 | \# |

## Math Example 2

- The following example from SBAC provides an illustration of the rigor and depth of understanding needed by students on its items. Students were likely to select the distractors (Kansas and Indiana) when responding to the item if they did not account for the effects of rounding.
- Similarly, on the NAEP sample item below, students selecting the distractor (answer A), measured the object in centimeters. Students understood how to use a ruler, but did not have the depth of understanding to use millimeters. Only one out of three students nationally answered the item correctly.


## Sample Grade 6-8 SBAC Math

## 42933

Different states have different sales tax rates. Three states have online calculators to compute sales tax on a purchase. Use the following steps to match each calculator with the correct state.

- Select Calculator $A, B$, or $C$.
- Enter a purchase price.
- Then select "Find Sales Tax" to compute the sales tax for that purchase price.

You may use the calculators as many times as you need to solve the problem to the right.

| Selecta a Calculator |  |  |  |
| :--- | :--- | :--- | :--- |
| O Calculator A | Calculator Purchase Price Sales Tax |  |  |
| O Calculator B | A | 10.00 | 0.63 |
| O Calculator C | B | 1.00 | 0.05 |
| Purchase Price | C | 1.00 | 0.07 |
|  | A | 1.00 | 0.06 |
| 100 | A | 100.00 | 6.25 |
| B | 100.00 | 5.00 |  |
| C | 100.00 | 6.88 |  |

## 42961

Different states and their sales tax rates are shown.
Drag each calculator into the correct row to show which state can use it to calculate sales tax.

| State | Sales Tax Rate | Calculator |
| :--- | :---: | :---: |
| Illinois | $6.250 \%$ | Calculator <br> A |
| Indiana | $7.000 \%$ |  |
| Kansas | $6.300 \%$ | Calculator <br> B |
| Maine | $5.000 \%$ |  |
| Maryland | $6.000 \%$ | Calculator  <br> Minnesota $6.875 \%$ |

## Sample Mathematics Question and Detail

Use millimeters for this question.


What is the length of the key in millimeters ( mm )?
A. 5 mm
B. 8 mm
C. 50 mm
D. 53 mm

Description: Measure the length of an object
Grade: 4
Year: 2013
Type of Question: Multiple Choice
Difficulty: Hard (29.26\%
Correct)
Content Area:
Measurement
Complexity:
Low

## How did students across states answer this question?

|  | A | B | C | D * | Omitted |
| :---: | :---: | :---: | :---: | :---: | :---: |
| National Public | 37 | 19 | 13 | 29 | 2 |
| Alabama | 50 | 20 | 12 | 16 | 2 |
| Alaska | 33 | 15 | 12 | 40 | 1 |
| Arizona | 40 | 20 | 12 | 26 | 1 |
| Arkansas | 39 | 26 | 13 | 21 | 1 |
| California | 44 | 22 | 11 | 21 | 1 |
| Colorado | 27 | 18 | 15 | 40 | 1 |
| Connecticut | 34 | 21 | 13 | 30 | 1 |
| Delaware | 37 | 26 | 14 | 19 | 3 |
| District of Columbia | 44 | 22 | 14 | 19 | 2 |
| Florida | 43 | 16 | 13 | 26 | 2 |
| Georgia | 38 | 16 | 13 | 30 | 2 |
| Hawaii | 37 | 16 | 12 | 33 | 2 |
| Idaho | 33 | 18 | 15 | 31 | 2 |
| Illinois | 35 | 20 | 13 | 31 | 2 |
| Indiana | 29 | 13 | 16 | 41 | 1 |
| lowa | 31 | 19 | 12 | 37 | 2 |
| Kansas | 30 | 16 | 13 | 37 | 3 |
| Kentucky | 43 | 22 | 13 | 20 | 1 |
| Louisiana | 49 | 22 | 11 | 18 | 1 |
| Maine | 29 | 15 | 13 | 42 | 2 |
| Maryland | 35 | 15 | 12 | 37 | 2 |
| Massachusetts | 29 | 20 | 13 | 35 | 3 |
| Michigan | 38 | 19 | 12 | 28 | 3 |
| Minnesota | 24 | 15 | 15 | 45 | 1 |
| Mississippi | 51 | 19 | 11 | 17 | 2 |
| Missouri | 34 | 19 | 16 | 29 | 1 |
| Montana | 32 | 16 | 14 | 37 | 1 |


|  | A | B | C | D * | Omitted |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Nebraska | 32 | 18 | 14 | 36 | 1 |
| Nevada | 42 | 21 | 12 | 23 | 1 |
| New Hampshire | 22 | 17 | 15 | 45 | 2 |
| New Jersey | 33 | 17 | 15 | 32 | 2 |
| New Mexico | 36 | 20 | 15 | 27 | 2 |
| New York | 41 | 20 | 13 | 23 | 3 |
| North Carolina | 39 | 20 | 15 | 24 | 1 |
| North Dakota | 25 | 16 | 15 | 43 | 1 |
| Ohio | 28 | 17 | 17 | 38 | 1 |
| Oklahoma | 37 | 16 | 14 | 32 | 1 |
| Oregon | 33 | 22 | 14 | 28 | 3 |
| Pennsylvania | 35 | 18 | 14 | 31 | 3 |
| Rhode Island | 37 | 22 | 14 | 25 | 2 |
| South Carolina | 40 | 20 | 14 | 26 | 1 |
| South Dakota | 40 | 21 | 13 | 25 | 1 |
| Tennessee | 43 | 22 | 13 | 22 | 1 |
| Texas | 37 | 20 | 12 | 29 | 2 |
| Utah | 32 | 18 | 14 | 35 | 2 |
| Vermont | 31 | 19 | 14 | 34 | 3 |
| Virginia | 35 | 22 | 11 | 31 | 2 |
| Washington | 29 | 17 | 15 | 37 | 2 |
| West Virginia | 29 | 18 | 13 | 40 | 1 |
| Wisconsin | 29 | 16 | 13 | 41 | 1 |
| Wyoming | 30 | 15 | 13 | 41 | 2 |
| DoDEA | 43 | 20 | 11 | 24 | 1 |

## How did student groups in the nation answer this question?

|  |  | A | B | c | D * | Omitted |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | White | 30 | 18 | 14 | 37 | 2 |
|  | Black | 49 | 22 | 13 | 14 | 2 |
|  | Hispanic | 48 | 20 | 12 | 19 | 1 |
|  | Asian/Pacific Islander | 26 | 17 | 13 | 43 | 1 |
|  | American Indian/Alaska Native | 43 | 24 | 10 | 22 | 1 |
| $\frac{\underline{a}}{\frac{1}{41}}$ | Two or more races | 34 | 19 | 16 | 29 | 2 |
|  | Eligible | 46 | 21 | 12 | 19 | 2 |
|  | Not eligible | 28 | 17 | 15 | 39 | 2 |
| $\begin{aligned} & \text { 을 } \\ & 0 \\ & 0 \end{aligned}$ | City | 41 | 20 | 13 | 25 | 2 |
|  | Suburb | 35 | 18 | 13 | 32 | 2 |
|  | Town | 38 | 18 | 13 | 29 | 2 |
|  | Rural | 35 | 19 | 14 | 30 | 1 |

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## Math Examples 3-5

- The SBAC and PARCC exams will require students to explain the results of their answers to short and extendedresponse items in math.
- The following examples from NAEP illustrate the types of answers and the difficulty students had on short answer and extended-response NAEP items. In addition to the large percentage of students across the country who do not answer these items correctly ( 82 percent nationally in the first example), one should note the percentage of students who make no attempt to answer these types of items.


## Sample Mathematics Question and Detail

Liz is conducting an experiment to see whether students learn vocabulary words by a new method faster than they learn them by the old method. Fifty students will participate in the experiment. She pairs off the 50 students so that the two students in each pair have similar levels of vocabulary. One student in each pair then learns words by the old method. The other student in the pair learns words by the new method. Why did Liz pair off her 50 students instead of just having all 50 of them use the new method?

Description: Evaluate an experimental design
Grade: 8
Year: 2013
Type of Question: Short Constructed Response Difficulty: Hard (12.29\% Correct)
Content Area:
Data analysis and probability
Complexity:
Moderate

Sample Student Response

She parred off her 50 students so half would perform the new method and half would perform the old Method, so that when the experiment was clone, she could compare the two methods, and see which method worked better.

Liz had to make sure the students using the old method and the students usings the new method had to have the same level of edveation or else the experiment
would not nave worked.

## How did students in Urban School Districts answer this question?

|  | Incorrect | Correct | Omitted | Off task |
| :---: | :---: | :---: | :---: | :---: |
| National Public | 82 | 12 | 6 | 1 |
| Albuquerque | 76 | 17 | 7 | 1 |
| Atlanta | 83 | 9 | 7 | \# |
| Austin | 84 | 7 | 8 | 1 |
| Baltimore City | 79 | 7 | 13 | 1 |
| Boston | 73 | 14 | 12 | 1 |
| Charlotte | 85 | 10 | 4 | \# |
| Chicago | 80 | 12 | 7 | 1 |
| Cleveland | 79 | 8 | 12 | 2 |
| Dallas | 86 | 6 | 7 | \# |
| Detroit | 72 | 7 | 19 | 3 |
| District of Columbia (DCPS) | 77 | 10 | 12 | 2 |
| Fresno | 80 | 3 | 15 | 2 |
| Hillsborough County | 90 | 5 | 4 | 1 |
| Houston | 81 | 9 | 10 | 1 |
| Jefferson County (KY) | 81 | 13 | 6 | \# |
| Los Angeles | 78 | 7 | 14 | 1 |
| Miami-Dade | 79 | 11 | 10 | \# |
| Milwaukee | 82 | 9 | 8 | 1 |
| New York City | 66 | 19 | 15 | 1 |
| Philadelphia | 73 | 16 | 12 | \# |
| San Diego | 78 | 10 | 11 | 1 |

## How did students across states answer this question?

| State | Incorrect | Correct | Omitted | Off task |
| :--- | :---: | :---: | :---: | :---: |
| National Public | 82 | 12 | 6 | 1 |
| Alabama | 79 | 12 | 8 | 1 |
| Alaska | 80 | 13 | 6 | 1 |
| Arizona | 82 | 12 | 5 | 1 |
| Arkansas | 85 | 10 | 4 | $\#$ |
| California | 82 | 10 | 7 | $\#$ |
| Colorado | 78 | 17 | 5 | $\#$ |
| Connecticut | 74 | 18 | 8 | $\#$ |
| Delaware | 80 | 12 | 7 | 1 |
| District of |  |  |  |  |
| Columbia | 79 | 9 | 11 | 1 |
| Florida | 82 | 12 | 6 | $\#$ |
| Georgia | 84 | 8 | 8 | 1 |
| Hawaii | 79 | 14 | 7 | 1 |
| Idaho | 82 | 13 | 5 | 1 |
| Illinois | 84 | 12 | 4 | $\#$ |
| Indiana | 82 | 13 | 4 | 1 |
| lowa | 86 | 11 | 3 | $\#$ |
| Kansas | 85 | 10 | 4 | $\#$ |
| Kentucky | 82 | 14 | 4 | $\#$ |
| Louisiana | 82 | 11 | 6 | 1 |
| Maine | 81 | 14 | 4 | 1 |
| Maryland | 79 | 12 | 8 | $\#$ |
|  |  |  |  |  |


| State | Incorrect | Correct | Omitted | Off task |
| :---: | :---: | :---: | :---: | :---: |
| Massachusetts | 78 | 17 | 4 | \# |
| Michigan | 83 | 11 | 5 | \# |
| Minnesota | 85 | 11 | 4 | 1 |
| Mississippi | 87 | 5 | 8 | \# |
| Missouri | 83 | 13 | 4 | \# |
| Montana | 83 | 14 | 3 | \# |
| Nebraska | 84 | 11 | 4 | 1 |
| Nevada | 78 | 15 | 6 | \# |
| New Hampshire | 78 | 18 | 3 | 1 |
| New Jersey | 79 | 16 | 4 | 1 |
| New Mexico | 79 | 15 | 6 | 1 |
| New York | 72 | 18 | 9 | 1 |
| North Carolina | 85 | 9 | 6 | \# |
| North Dakota | 88 | 9 | 2 | 1 |
| Ohio | 80 | 15 | 4 | \# |
| Oklahoma | 86 | 8 | 6 | 1 |
| Oregon | 82 | 10 | 8 | 1 |
| Pennsylvania | 80 | 16 | 4 | \# |
| Rhode Island | 78 | 15 | 7 | \# |
| South Carolina | 81 | 11 | 7 | 1 |
| South Dakota | 86 | 9 | 4 | 1 |
| Tennessee | 85 | 9 | 6 | \# |
| Texas | 85 | 8 | 6 | 1 |
| Utah | 86 | 8 | 5 | 1 |
| Vermont | 83 | 14 | 3 | \# |
| Virginia | 84 | 10 | 6 | 1 |
| Washington | 81 | 11 | 7 | 1 |
| West Virginia | 83 | 10 | 6 | 1 |
| Wisconsin | 83 | 13 | 3 | 1 |
| Wyoming | 82 | 15 | 3 | \# |
| DoDEA | 80 | 15 | 4 | 1 |

## Sample Grade 3-5 PARCC Math Item

An art teaoher will tile a seotion of the wall with painted tiles made by students in three art olassea.

- Clasa A made 18 tiles
- Clasa B made 14 tilea
- Clasa C made 16 tiles


## Part A

What is the total number of tiles that are to be used?
Enter your answer in the box.


## Part B

The grid ahowa how muoh wall space the art teaoher oan use. Use the grid to oreate a reotangular array showing how the art teaoher might arrange the tiles on the wall.

Seleot the boxes to shade them. Each tile ahould be shown by one shaded box


Part C
Andy oreated a reotangular array showing how he would place 56 small tiles on the wall. He placed 7 tiles in each row. He wrote a multiplication equation using the ? zymbol to atand for the number of rowa he used.

Using the ? symbol to stand for the unknown number, write an equation that Andy oculd have written.


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## Sample Mathematics Question and Detail

(a) If $c$ and $d$ are different prime numbers less than 10 and the sum $c+d$ is
a composite number greater than 10 , what is one possible pair of values for $c$ and $d$ ?
$c=5 d=7$
(b) If $j$ and $k$ are different prime numbers less than 10 and the sum $j+k$ is a prime number less than 10 , what is one possible pair of values for $j$ and $k$ ?
$j=2 k=3$ or $j=2 k=5$
(c) If $s$ and $t$ are different prime numbers greater than 10, explain why the sum $s+$ $t$ cannot be a prime number.
If $s$ and $t$ are prime numbers greater than 10 , then $s$ and $t$ are odd numbers. The sum $s+t$ is an even number greater than 2 , and therefore is not prime.

Description: Solve problem involving prime numbers
Grade: 8
Year: 2013
Type of Question: Extended Constructed Response
Difficulty: Hard (16.77\% Correct)
Content Area:
Number properties and operations
Complexity:
High

## How did students in Urban School Districts answer this question?

|  | Incorrect | Minimial | Partial | Satisfactory | Extended | Omitted | Off task |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| National Public | 52 | 20 | 12 | 4 | 2 | 9 | 1 |
| Albuquerque | 47 | 19 | 13 | 4 | 2 | 14 | \# |
| Atlanta | 56 | 19 | 10 | 2 | 1 | 11 | \# |
| Austin | 52 | 16 | 10 | 5 | 2 | 14 | 2 |
| Baltimore City | 63 | 16 | 5 | 1 | \# | 15 | \# |
| Boston | 37 | 20 | 13 | 6 | 3 | 18 | 2 |
| Charlotte | 47 | 20 | 11 | 6 | 4 | 11 | 1 |
| Chicago | 60 | 14 | 7 | 3 | 1 | 15 | 1 |
| Cleveland | 64 | 14 | 4 | 1 | \# | 17 | \# |
| Dallas | 53 | 18 | 4 | 1 | \# | 23 | \# |
| Detroit | 65 | 12 | 5 | \# | \# | 16 | 1 |
| District of Columbia (DCPS) | 66 | 12 | 6 | 2 | \# | 15 | \# |
| Fresno | 57 | 20 | 6 | 1 | 2 | 11 | 2 |
| Hillsborough County | 60 | 16 | 9 | 2 | 3 | 6 | 3 |
| Houston | 60 | 13 | 8 | 1 | 2 | 16 | \# |
| Jefferson County (KY) | 61 | 16 | 9 | 4 | 2 | 7 | 1 |
| Los Angeles | 47 | 16 | 14 | 2 | 2 | 19 | 1 |
| Miami-Dade | 62 | 15 | 8 | 1 | 1 | 12 | 1 |
| Milwaukee | 65 | 16 | 2 | 1 | \# | 15 | \# |
| New York City | 47 | 18 | 11 | 3 | 3 | 18 | \# |
| Philadelphia | 63 | 14 | 8 | 1 | 1 | 13 | \# |
| San Diego | 46 | 21 | 12 | 4 | 3 | 13 | 1 |

## How did student groups across the nation answer this question?

|  |  | Incorrect | Minimial | Partial | Satisfactory | Extended | Omitted | Off task |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 70000000000 | White | 46 | 23 | 16 | 5 | 3 | 6 | 1 |
|  | Black | 61 | 17 | 7 | 1 | 1 | 13 | 1 |
|  | Hispanic | 58 | 18 | 8 | 1 | 1 | 13 | 1 |
|  | Asian/Pacific Islander | 33 | 22 | 22 | 12 | 7 | 5 | \# |
|  | American Indian/Alaska Native | 60 | 18 | 8 | 2 | 1 | 10 | 1 |
|  | Two or more races | 49 | 23 | 13 | 4 | 3 | 6 | 1 |
| $\frac{\text { d }}{\frac{1}{r}}$ | Eligible | 60 | 18 | 8 | 2 | \# | 12 | 1 |
|  | Not eligible | 43 | 23 | 17 | 6 | 3 | 6 | 1 |
|  | Information not available | 35 | 29 | 19 | 7 | 5 | 5 | 1 |
| $\begin{aligned} & \text { C } \\ & \text { O} \\ & \hline 0 . \\ & 0 \\ & \hline \end{aligned}$ | City | 51 | 20 | 12 | 4 | 2 | 11 | 1 |
|  | Suburb | 47 | 22 | 15 | 5 | 3 | 8 | 1 |
|  | Town | 55 | 21 | 12 | 3 | 1 | 8 | 1 |
|  | Rural | 53 | 21 | 12 | 4 | 2 | 7 | 1 |

## Sample Grade 3-5 SBAC Math Item

## 43025

Five swimmers compete in the 50 -meter race. The finish time for each swimmer is shown in the video.


Explain how the results of the race would change if the race used a clock that rounded to the nearest tenth.


## Sample Grade 3-5 SBAC Math Item

## 43023

A rectangle is 6 feet long and has a perimeter of $20 \frac{1}{3}$ feet.
What is width of this rectangle? Explain how you solved this problem.


## Sample Mathematics Question and Detail

The graph below shows the percentages of all households in the United States in the years 1940 to 1997 that owned at least one television set.

(a) In which year do you think that television sets were most likely first available for purchase in stores?
(b) In which year did 50 percent of the households own at least one television set?
(c) Write a sentence or two that compares the growth in the percentage of households with television sets across the three decades of the 1950's, 1960's, and 1970's.
(d) The points $(1950,10)$ and $(1970,90)$ both lie on the graph above. Both points are also solutions of the equation $y=4 x-7790$
However, if the graph of $y=4 x-7790$. were drawn for the years 1940 to 1997, it would not look like the graph shown.
Explain why not.

Description: Answer questions based on a graph
Grade: 8
Year: 2013
Type of Question: Extended
Constructed Response
Difficulty: Hard (30.19\% Correct)

## Content Area:

Algebra
Complexity:
High

Sample Student Response
(a) In which year do you think that television sets were most likely first available for purchase in stores?

$$
1945
$$

(b) In which year did 50 percent of the households own at least one television set?

$$
1955
$$

(c) Write a sentence or two that compares the growth in the percentage of households with television sets across the three decades of the 1950's, 1960's, and 1970's.

The growth in the percentage of television sets grew rapidly during the 1950's. The growth lessened during the 1900's and became even slower in the 1970's
d) The points $(1950,10)$ and $(1970,90)$ both lie on the graph above. Both points are also solutions of the equation $y=4 x-7790$. However, if the graph of $y=4 x-7790$ However, if the graph of
1940 to 1997, it would not look like the graph shown. Explain why not.
The graph is not a linear function. It sometimes
Extended
grows faster, sometimes slower, $Y$ Oo cant
represent this graph with a straight line.

## Sample Student Response

(a) In which year do you think that television sets were most likely first available for purchase in stores?

## In 1945

(b) In which year did 50 percent of the households own at least one television set?

## In 1950

c) Write a sentence or two that compares the growth in the percentage of households with television sets across the three decades of the 1950's, 1960's, and 1970's.

(d) The points $(1950,10)$ and $(1970,90)$ both lie on the graph above. Both points are also solutions of the equation $y=4 x-7790$. However, if the graph of $y=4 x-7790$ were drawn for the years 1940 to 1997, it would not look like the graph shown. Explain why not.

## Sample Student Response

(a) In which year do you think that television sets were most likely first available for purchase in stores?

## 1940

(b) In which year did 50 percent of the households own at least one television set?

1950
(c) Write a sentence or two that compares the growth in the percentage of households with television sets across the three decades of the 1950's, 1960's, and 1970's.

In a block \& ten years from 1940 to 2000
television sets became more popular:
(d) The points $(1950,10)$ and $(1970,90)$ both lie on the graph above. Both points are also solutions of the equation $y=4 x-7790$. However, if the graph of $y=4 x-7790$ were drawn for the years 1940 to 1997, it would not look like the graph shown. Explain why not.
because the increase would not seem as high.

## How did student groups across the nation answer this question?

|  |  | Incorrect | Minimal | Partial | Satisfactory | Extended | Omitted | Off task |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | White | 15 | 35 | 34 | 11 | 1 | 3 | \# |
|  | Black | 35 | 32 | 18 | 3 | \# | 11 | \# |
|  | Hispanic | 30 | 35 | 20 | 4 | \# | 10 | \# |
|  | Asian/Pacific Islander | 16 | 29 | 34 | 13 | 2 | 5 | \# |
|  | American Indian/Alaska Native | 32 | 33 | 29 | 2 | \# | 4 | \# |
|  | Two or more races | 17 | 41 | 29 | 7 | 1 | 4 | 1 |
| $\frac{\overrightarrow{2}}{\frac{2}{4}}$ | Eligible | 30 | 34 | 23 | 4 | \# | 9 | \# |
|  | Not eligible | 14 | 35 | 33 | 12 | 2 | 4 | \# |
|  | City | 24 | 34 | 25 | 8 | 1 | 8 | \# |
|  | Suburb | 19 | 34 | 30 | 9 | 1 | 6 | \# |
|  | Town | 22 | 35 | 29 | 7 | 1 | 5 | \# |
|  | Rural | 20 | 36 | 31 | 8 | 1 | 4 | \# |

## NAEP READING ITEMS

2013

## Reading Example 1

- Consistent with the SBAC and PARCC exams in math, reading exams will require students to explain their answers to short and extended-response items.


## Sample Grade 3-5 SBAC Reading

## 43015

How does the author emphasize the point that the TAM program was a positive influence on the sisters' lives? Use details from the text to support your answer.

## Sample Reading Question and Detail

The author ends the essay with a childhood story. Does the childhood story do a better job persuading readers of the author's point than the other parts of the essay? Explain why or why not.

Description: Evaluate persuasiveness of ending in relation to the rest of the essay
Grade: 8
Year: 2013
Type of Question: Extended
Constructed Response
Difficulty: Hard (33.13\%
Correct)
Content Area: Informational
Cognitive Target:
Critique/Evaluate

Yes, It does a better job persuading readers of the author's point because it was so simple, but fun. It shows that you cant go hurting for fun, but it will Also, this part is good at persuading people because they con relate to it. Almost everyone has a similar childhood memory.

No t does not. Everyone has had a fun childhood day. It is pointless and ikreilvant to the main $\leftarrow$ Unsatisfactory Response theme of the text.

## How did students across the nation answer this question?



## Reading Examples 2 and 3

- PARCC and SBAC items will require students to provide evidence from the text when answering questions. These items are referred to as text-dependent questions in the Common Core Standards.
- The following examples from NAEP show that over sixty percent of students nationally provided unacceptable responses to items requiring them to use information from the text to justify their answers (example 2). One should note that students were required to write their responses to NAEP items but were required to select texts from various choices on some PARCC and SBAC items.


## Sample Grade 3-5 PARCC Reading

HOME / TEST $1 /$ PART 1: GRADE 3-5 ELA SAMPLE ITEMS / 1 OF 11

Read the passage from "The Cricket and the Cougar" and answer the questions.

from "The Cricket and the Cougar" by Katherine Chandler

1) One day the cougar was out walking in the woods. As he was stepping near an old rotten log, he heard a tiny voice say, "Oh, please don't step there. That's my house, and with one step more you will destroy it."The cougar looked down and saw a little cricket sitting on the log. He roared, "And is it you, weak little creature, that dares to tell me where to step? Don't you know that I am king of the beasts?"

(3)
"You may be king of the beasts, but I am king of my house, and I don't want you to break it down, king or no king."
4 The cougar was amazed at such daring. "Don't you know, you weakling, that I could kill you and your house and all your relatives with one blow of my paw?"
"I mov ho woal hut I havo a anuoin no hiagor thon I am when

## Part A

What is the meaning of the word master as it is used in paragraphs 5 and 6 ?A. understand
cB. conquerC. befriendD. frighten

## Part B

Which detail from the story best supports the answer to Part A?A. "Don't you know that I am king of the beasts?"B. "'Well, little boaster, you have that cousin here to-morrow..."
$\bigcirc$
C. "Then he felt a stinging. 'Oh, oh!' he roared, 'get out of my ear!"'

## Sample Grade 3-5 PARCC Reading

Read the passage from "The Cricket and the Cougar" and answer the questions.

## from "The Cricket and the Cougar"

by Katherine Chandler
One day the cougar was out walking in the woods. As he was stepping near an old rotten log, he heard a tiny voice say, "Oh, please don't step there. That's my house, and with one step more you will destroy it. ${ }^{\text {. }}$
2 The cougar looked down and saw a little cricket sitting on the $\log$. He roared, "And is it you, weak little creature, that dares to tell me where to step? Don't you know that I am king of the beasts?"You may be king of the beasts, but I am king of my house, and I don't want you to break it down, king or no king."The cougar was amazed at such daring. "Don't you know, you weakling, that I could kill you and your house and all your relatives with one blow of my paw?"


Drag and drop three details from the story that help create the setting of this story.

## Details from the Story

"One day the cougar was out walking in the woods."
"The cougar looked down and saw a little cricket sitting on a log."
"He roared, 'And is it you, weak little creature, that dares to tell me where to step?'"
"The next day the cougar came back to the same spot and roared..."
"OOh, oh!' he roared, 'get out of my ear!"
"With every sting the cougar roared louder and scratched his ear and jumped around..."
$\square$

## Sample Reading Question and Detail

Provide an example from the story that shows that Miguel does not feel part of Dominican culture.

Description: La Napa: Provide relevant example from story in support of character description
Grade: 4
Year: 2013
Type of Question: Short
Constructed Response
Difficulty: Hard (33.16\% Correct)
Content Area:
Literary
Cognitive Target: Integrate/Interpret

Student Responses
One part says that he still likes hot dogs better than "arroz con habichuelas."Aso, because Americans don't kiss as a greeting.

I think her culture is unick In plenty of way she sound love her culture and. be happy about where she came, from and how she learned fromit.

## How did students in Urban School Districts answer this question?

|  | Unacceptable | Acceptable | Omitted | Off task |
| :---: | :---: | :---: | :---: | :---: |
| National Public | 61 | 32 | 6 | 1 |
| Albuquerque | 65 | 26 | 7 | 2 |
| Atlanta | 61 | 33 | 4 | 2 |
| Austin | 55 | 31 | 12 | 1 |
| Baltimore City | 72 | 18 | 8 | 1 |
| Boston | 56 | 34 | 8 | 2 |
| Charlotte | 57 | 36 | 7 | 1 |
| Chicago | 62 | 30 | 7 | 2 |
| Cleveland | 67 | 18 | 14 | \# |
| Dallas | 62 | 24 | 13 | 2 |
| Detroit | 73 | 16 | 10 | \# |
| District of Columbia (DCPS) | 62 | 27 | 9 | 2 |
| Fresno | 71 | 18 | 9 | 2 |
| Hillsborough County | 59 | 36 | 3 | 2 |
| Houston | 63 | 27 | 9 | 1 |
| Jefferson County (KY) | 58 | 34 | 8 | 1 |
| Los Angeles | 65 | 26 | 7 | 2 |
| Miami-Dade | 52 | 42 | 6 | \# |
| Milwaukee | 68 | 24 | 6 | 2 |
| New York City | 59 | 30 | 10 | 1 |
| Philadelphia | 69 | 25 | 5 | 2 |
| San Diego | 59 | 34 | 7 | \# |

## Sample PARCC Reading Grade 3-5 Item

## HOME $/$ TEST $1 /$ PART 1: GRADE 3-5 ELA SAMPLE ITEMS $/$ S OF 11

Read the story "Kira-Kira." Then answer the questions.

## Kira-Kira

by Cynthia Kadohata

1My sister, Lynn, taught me my first word: kira-kira. I pronounced it ka-a-ahhh, but she knew what I meant. Kira-Kira means "glittering" in Japanese. Lynn told me that when I was a baby, she used to take me onto our empty road at night, where we would lie on our backs and look at the stars while she said over and over, "Katie, say "kirakira, kira-kira." I loved that word! When I grew older, I used kira-kira to describe everything I liked: the beautiful blue sky, puppies, kittens, butterflies, colored Kleenex.My mother said we were misusing the word; you could not call a Kleenex kira-kira. She was dismayed over how un-Japanese we were and vowed to send us to Japan one day. I didn't care where she sent me, so long as Lynn came along.

3 I was born in lowa in 1951. I know a lot about when I was a little girl, because my sister used to keep a diary. Today I keep her diary

## Part A

How are the events in paragraphs 1 and 2 important to the theme of the story?
A. They list the many lessons that Lynn taught her younger sister, Katie.
B. They explain that Katie's family had very high expectations of her when she was young.
C. They show how long the relationship is between Katie and Lynn.
D. They introduce the idea that Katie and Lynn want to learn more about the Japanese language.

## Part B

Which sentence from the story provides the best support for the answer in Part A?A. "My sister, Lynn, taught me my first word: kira-kira."
B. "When I grew older, I used kira-kira to describe everything I liked: the beautiful blue sky, puppies, kittens, butterflies, colored Kleenex."
C. "She was dismayed over how un-Japanese we were and vowed to send us to Japan one day."
D. "I didn't care where she sent me, so long as Lynn came along."

## Sample PARCC Reading Grade 3-5 Item

## Cricket and Cougar <br> Kira-Kira

Read the passage from "The Cricket and the Cougar" and answer the questions.

from "The Cricket and the Cougar"<br>by Katherine ChandlerOne day the cougar was out walking in the woods. As he was stepping near an old rotten log, he heard a tiny voice say, "Oh, please don't step there. That's my house, and with one step more you will destroy it."The cougar looked down and saw a little cricket sitting on the $\log$. He roared, "And is it you, weak little creature, that dares to tell me where to step? Don't you know that I am king of the beasts?"

(3)
"You may be king of the beasts, but I am king of my house, and I don't want you to break it down, king or no king."
4 The cougar was amazed at such daring. "Don't you know, you weakling. that I could kill vou and vour house and all vour relatives

You have read two stories in which one family member saves another. Write an essay describing the mosquito from "The Cricket and the Cougar" and one of the main characters from "Kira-Kira." For each character described:

- Explain how the thoughts, words, and/or actions of the character help you understand what the character is like
- Explain why the character chooses to save his or her family member

Be sure to include specific details from each story to support your ideas.


## Sample Reading Question and Detail

Does the box on page 3 called "White Shark Facts" help you understand the rest of the article? Explain your answer using information from both the box and the rest of the article.


Description: Explain relation between information in text box and the rest of the article Grade: 8
Year: 2013
Type of Question: Short
Constructed Response
Difficulty: Medium (56.15\%
Correct)
Content Area Informational
Cognitive Target
Critique/Evaluate

Student Responses
No because the facts wore explaining all sharks but not about in the baby shark that we were reading in the atical.
yes, because it mot only show
us facts it shows us us. facts it shows us a picture so we call see wat were reaching about

White sharks eat fish, rays and smaller sharks. When they are adults then eat sea lions, seals, and sometimes the seavange. When fine are $\leftarrow$ Little or No born the yare on their own and theyare alive when then about to be born. Comprehension

## How did student groups across the nation answer this question?

|  | Little or No Comprehension | Partial Comprehension | Full Comprehension | Omitted | Off task |
| :---: | :---: | :---: | :---: | :---: | :---: |
| White | 22 | 37 | 40 | 1 | \# |
| Black | 27 | 43 | 28 | 1 | \# |
| Hispanic | 24 | 43 | 32 | 1 | \# |
| Asian/Pacific Islander | 19 | 38 | 43 | 1 | \# |
| American Indian/Alaska Native | 24 | 47 | 25 | 3 | \# |
| Two or more races | 25 | 38 | 36 | \# | 1 |

## How do NAEP items compare to PARCC and Smarter Balanced Release Items?

bridges to other trees and rope swings. Those were fun to build!"
14 When designing a tree house, the sky's the limit according to Jonathan.

15 "Let your imagination run wild," he says. "Walk in the woods and learn the different trees. Spend time climbing and learn how to do it safely."

Jonathan also encourages his clients to give their tree houses names. One of his favorite names is "Ups and Downs."

Here's some more about living in the limbs! Read this interview with tree house expert Pete Nelson.

WELCOME TO TREE-HOUSE SCHOOLHey, kids! Jack here. Feeling inspired to design you own tree house? Here's some advice from Pete Nelson, who runs TreeHouse Workshop, a treehouse-building school. He's built tree houses across the United States-and in far-away countries such as Japan and Morocco, too!
18 .lack What would wou include in wour dream tree house?

Part A
Which idea is found in both the article about Fairoaks and the sidebar about Nelson?

○
A. Each tree house should be special for its owner.

- B. People should climb trees for practice before building a tree house.
$\bigcirc$
C. Having a tree house is good for people.
(1)
D. Going to a tree house school can be helpful in getting started.


## Part B

Choose one detail from the article and one detail from the sidebar that support the answer to Part A. Drag each of the details into the box labeled Supporting Details.

Supporting Detail from the Article

## What can we learn from NAEP items/question tools?

