

NAEP Released Items Aligned to the Iowa Core

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

What digit is in the thousands place in the number in this rectangle?

45,372

- A. 4
- B. 5
- C. 3
- D. 7
- E. 2

2004-9-23-15 Adapted

Source: National Assessment of Educational Progress, 2004, Age 9 Mathematics Assessment.

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4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using  $>$ ,  $=$ , and  $<$  symbols to record the results of comparisons.

Which set of numbers is listed from the smallest to largest?

- A. 

1,001	1,100	1,011
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- B. 

2,200	2,022	2,020
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- C. 

3,030	3,003	3,300
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- D. 

4,004	4,040	4,044
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2007-4-11-17

Source: National Assessment of Educational Progress, 2007, Grade 4 Mathematics Assessment.

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Which of these is equal to  $8,000 + 800 + 8$ ?

- A. 8,088
- B. 8,808
- C. 8,880
- D. 8,888

2005-4-12-1

Source: National Assessment of Educational Progress, 2005, Grade 4 Mathematics Assessment.

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Ron was listening to the radio and heard, "One hundred twenty-four thousand sixty-five books have been donated to the library." What is this number?

- A. 12,465
- B. 124,065
- C. 124,650
- D. 100,024,065

2003-4-10-3

Source: National Assessment of Educational Progress, 2003, Grade 4 Mathematics Assessment.

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By how much would the value of 5,647 be decreased if the 5 were replaced by a 2?

- A. 3
- B. 300
- C. 3,000
- D. 30,000

1990-4-7-11

Source: National Assessment of Educational Progress, 1990, Grade 4 Mathematics Assessment.

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Which of the following numbers is five million, eighty thousand?

- A. 5,800,000
- B. 5,008,000
- C. 5,000,008
- D. 5,080,000
- E. 580,000

2007-8-11-5

Source: National Assessment of Educational Progress, 2007, Grade 8 Mathematics Assessment.

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The census showed that three hundred fifty-six thousand, ninety-seven people lived in Middletown. Written as a number, that is

- A. 350,697
- B. 356,097
- C. 356,907
- D. 356,970

1992-4-15-3  
1992-8-15-3

Source: National Assessment of Educational Progress, 1992, Grade 4 and Grade 8 Mathematics Assessments.

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**4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.**

What is 18,565 rounded to the nearest thousand?

- A. 18,000
- B. 18,600
- C. 19,000
- D. 20,000

1992-4-12-2

Source: National Assessment of Educational Progress, 1992, Grade 4 Mathematics Assessment.

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Which of the following numbers, when rounded to the nearest thousand, becomes 27,000?

- A. 26,099
- B. 26,490
- C. 27,381
- D. 27,550
- E. 27,640

1996-8-3-1

Source: National Assessment of Educational Progress, 1996, Grade 8 Mathematics Assessment.

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**4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.**

Sam's school is trying to collect one million pennies.

Write this amount as a number.

\_\_\_\_\_ pennies

So far, the school has collected 513,462 pennies. How many more pennies does the school need to collect to reach one million?

\_\_\_\_\_ pennies

2011-4-8-11

Source: National Assessment of Educational Progress, 2011, Grade 4 Mathematics Assessment.

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What number is 10,000 more than 333,333?

- A. 333,433
- B. 334,333
- C. 343,333
- D. 433,333

2011-4-9-2

Source: National Assessment of Educational Progress, 2011, Grade 4 Mathematics Assessment.

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Add:

$$20,000 + 790,000 =$$

- A. 792,000
- B. 810,000
- C. 811,000
- D. 990,000

2011-4-9-5

Source: National Assessment of Educational Progress, 2011, Grade 4 Mathematics Assessment.

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Subtract:

$$\begin{array}{r} 6,090 \\ - 4,843 \\ \hline \end{array}$$

- A. 1,147
- B. 1,247
- C. 2,257
- D. 2,853

2011-4-9-8

Source: National Assessment of Educational Progress, 2011, Grade 4 Mathematics Assessment.

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What number is 10 more than 5,237?

- A. 5,238
- B. 5,247
- C. 5,337
- D. 6,237

2007-4-9-2

Source: National Assessment of Educational Progress, 2007, Grade 4 Mathematics Assessment.

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By how much will the value of the number 4,372 increase if the 3 is replaced with a 9?

- A. 6
- B. 60
- C. 600
- D. 6,000

2007-4-11-5

Source: National Assessment of Educational Progress, 2007, Grade 4 Mathematics Assessment.

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Which of these would be easiest to solve by using mental math?

- A.  $\$65.12 - \$28.19$
- B.  $358 \times 2$
- C.  $1,625 \div 3$
- D.  $\$100.00 + \$10.00$

2007-4-11-9

Source: National Assessment of Educational Progress, 2007, Grade 4 Mathematics Assessment.

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Kitty is taking a trip on which she plans to drive 300 miles each day. Her trip is 1,723 miles long. She has already driven 849 miles. How much farther must she drive?

- A. 574 miles
- B. 874 miles
- C. 1,423 miles
- D. 2,872 miles

1996-4-12-1

Source: National Assessment of Educational Progress, 1996, Grade 4 Mathematics Assessment.

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Think carefully about the following question. Write a complete answer. You may use drawings, words, and numbers to explain your answer. Be sure to show all of your work.

Laura wanted to enter the number 8375 into her calculator. By mistake, she entered the number 8275. Without clearing the calculator, how could she correct her mistake?

Without clearing the calculator, how could she correct her mistake another way?

1992-4-14-10

Source: National Assessment of Educational Progress, 1992, Grade 4 Mathematics Assessment.

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#### POINTS EARNED FROM SCHOOL EVENTS

Class	Mathathon	Readathon
Mr. Lopez	425	411
Ms. Chen	328	456
Mrs. Green	447	342

What was the total number of points earned from the mathathon?

1992-4-12-9

Source: National Assessment of Educational Progress, 1992, Grade 4 Mathematics Assessment.

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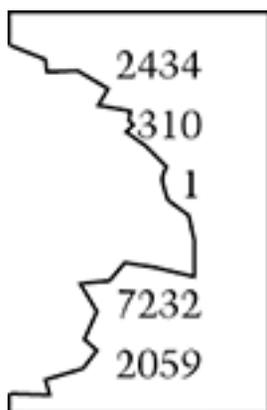
Ms. Chen's class earned how many more points from the readathon than from the mathathon?

1992-4-12-10

Source: National Assessment of Educational Progress, 1992, Grade 4 Mathematics Assessment.

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Dianne found the torn piece of paper shown below.



Six numbers originally appeared in a column on this paper. The fourth number from the top of the column had been completely torn away. Dianne wondered whether the sum of the six numbers was odd or even.

Give an example of a number that could be the fourth number in the column if the sum of the six numbers is an odd number.

Answer: \_\_\_\_\_

Explain why you chose that number.

2011-8-12-13

Source: National Assessment of Educational Progress, 2011, Grade 8 Mathematics Assessment.

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If the digit in the tens place of 37,241 is increased by one and the digit in the thousands place is decreased by one, how has the number been changed?

- A. The number has been decreased by 990.
- B. The number has been decreased by 1,000.
- C. The number has been decreased by 1,010.
- D. The number has been increased by 10.
- E. The number has been increased by 1,010.

2005-12-4-9

Source: National Assessment of Educational Progress, 2005, Grade 12 Mathematics Assessment.

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4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Patty expects that each tomato plant in her garden will bear 24 tomatoes. If there are 6 tomato plants in her garden, how many tomatoes does she expect?

- A. 4
- B. 18
- C. 30
- D. 144

2011-4-8-7

Source: National Assessment of Educational Progress, 2011, Grade 4 Mathematics Assessment.

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$$\begin{array}{r} 74 \\ \times 16 \\ \hline \end{array}$$

- A. 90
- B. 518
- C. 1,164
- D. 1,184

2011-4-12-6

Source: National Assessment of Educational Progress, 2011, Grade 4 Mathematics Assessment.

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In the multiplication problem below, write the missing number in the box.

$$\begin{array}{r} 23 \square \\ \times 8 \\ \hline 1,896 \end{array}$$

1992-4-12-5

Source: National Assessment of Educational Progress, 1992, Grade 4 Mathematics Assessment.

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Multiply:  $3 \times 405 =$

1992-4-14-1

Source: National Assessment of Educational Progress, 1992, Grade 4 Mathematics Assessment.

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Marlene made 6 batches of muffins. There were 24 muffins in each batch. Which of the following number sentences could be used to find the number of muffins she made?

- A.  $6 \times \square = 24$
- B.  $6 + 24 = \square$
- C.  $6 + \square = 24$
- D.  $6 \times 24 = \square$

1992-4-14-5

Source: National Assessment of Educational Progress, 1992, Grade 4 Mathematics Assessment.

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4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.  
of symmetry.

Park School has 316 students. For field day, the students are put into 4 teams with the same number of students on each team. How many students are on each team?

- A. 79
- B. 312
- C. 320
- D. 1,264

2011-4-8-4

Source: National Assessment of Educational Progress, 2011, Grade 4 Mathematics Assessment.

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Divide:  $5 \overline{)476}$

- A. 85 R1
- B. 95 R1
- C. 96
- D. 135 R1

2009-4-10-12

Source: National Assessment of Educational Progress, 2009, Grade 4 Mathematics Assessment.

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Divide 108 by 9.

1992-4-12-1

Source: National Assessment of Educational Progress, 1992, Grade 4 Mathematics Assessment.

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Multiply:  $\begin{array}{r} 43 \\ \times 67 \\ \hline \end{array}$

1990-4-9-1

Source: National Assessment of Educational Progress, 1990, Grade 4 Mathematics Assessment.

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