Grade 5
Family Resource Bundle

Grade 5

ANSWER KEY Text #1 The Lion and the Mouse

by Aesop 620-560 BCE

1. RL.CS.4

PART A: What does the word "timid" mean as it is used in paragraph 1?

A. Courageous and bold
B. Cute and soft
C. Foolish and careless
D. Fearful and wary

2. RL.KID.1

PART B: Which phrase provides the best support for the answer to Part A?

A. "unexpectedly"
B. "in her fright"
C. "ran across"
D. "tiny creature"

3. RL.KID.3

What does the information in paragraph 3 reveal about the lion?

A. He knows he is too big and powerful to ever encounter any danger in the forest.
B. He is cruel toward those who are smaller than he is.
C. He does not believe that an animal as mighty as he is would ever need the help of a creature so small.
D. He enjoys the company of smaller animals and often seeks them out to assist them in any way he can.

4. RL.CS.5

How does paragraph 5 contribute to the overall structure of the story?

A. It describes the setting where the story takes place.
B. It compares the personalities and characteristics of two characters.
C. It establishes the problem of the story.
D. It reveals the solution to a main conflict in the story.

5. RL.KID.2

Explain the theme of the story on the lines below.

1. **Answers will vary; acceptable responses include "A kindness is never wasted," "Little friends may prove great friends," "Never underestimate someone's potential," or "No**

matter how weak and small a creature is, he may be of help if time comes." Students should also explain how the story's plot reveals this theme.

ANSWER KEY Text #2 Standing Out in the Herd

by Cecil Dzwowa 2016

1. RI.KID.2

PART A: Which statement best expresses the main idea of the text?

A. Giraffes are generally gentle creatures that get along with all animals.
B. Toro became an important member of the herd, despite being a different species.
C. Giraffes and cows have more in common than most animals.
D. Toro would never have been strong enough to survive in the wild.

2. RI.KID.1

PART B: Which detail from the text best supports the answer to Part A?

A. "He was also at risk of starving. But about two days later, some herders spotted and rescued him." (Paragraph 3)
B. "Since giraffes and cattle are both plant-eating animals that live in groups, their behaviors are much the same." (Paragraph 7)
C. "Toro has benefited from living with the cattle, but his presence is good for them, too. In hot weather, cattle rest in the shade under his belly." (Paragraph 13)
D. "'In the wild, he would find it difficult to be accepted into another herd or defend himself from predators,' Munetsi said." (Paragraph 16)

3. RI.KID.3

PART A: Which sentence best describes the relationship between Toro and the herd?

A. Toro and the herd benefit from each other's presence.
B. Toro is considered the leader of the herd because of his size.
C. The herd ignores Toro because he is different from them.
D. Toro is constantly challenged for dominance by the herd.

4. RI.KID.1

PART B: Which TWO details from the text best support the answer to Part A?

A. "Toro was accepted into the herd and wandered among the cattle as they grazed." (Paragraph 7)
B. "Toro didn't always behave like the other members of his new herd. Like many kinds of animals, cattle compete for dominance." (Paragraph 8)
C. "'But thanks to his height, Toro does not need to join the stampede,' said Vengai, Andrew's assistant." (Paragraph 12)

D. **"And because of his height, Toro can spot lions, hyenas, and other predators long before they come close to the herd." (Paragraph 13)**
E. "The herd is not always peaceful. Fights sometimes break out among the bulls. But the cattle usually leave Toro out of their disagreements." (Paragraph 14)
F. **"'In the wild, he would find it difficult to be accepted into another herd or defend himself from predators'" (Paragraph 16)**

5. RI.CS.5

How does the section "Peace-Loving Member" (Paragraphs 8-12) contribute to the development of ideas in the text? Use evidence from the text to support your response.

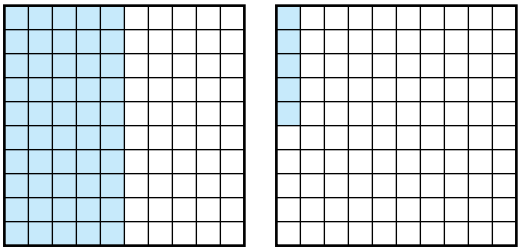
1. **Answers will vary; students should discuss how this section emphasizes how Toro has adapted several of the herd's habits and lifestyle while also highlighting ways he continues to be different from the herd. The author discusses how Toro's diet has changed to be more similar to a cow's. For instance, "Instead of feeding only on leaves, as giraffes do in the wild, he added dry cornstalks to his diet" (Paragraph 10). Additionally, "Like the cattle, he can now also respond to the herders' commands, such as 'move' and 'stop'" (Paragraph 10). In other words, Toro has learned to follow the same orders from humans that the cows do. However, some behaviors and traits unique to a giraffe continue to set Toro a part form the herd. For example, Toro never felt the need to compete for dominance with the other cows, even though "Toro was more than three times taller than the biggest bull" (Paragraph 8). Also, Toro doesn't have to get involved in the fight to enter the enclosure at night; rather, "'He just lifts his long front legs effortlessly over the wooden poles, and he will be in'" (Paragraph 12). In all, while Toro has adopted some of the herd's behaviors, he also possesses traits and behaviors unique to a giraffe.**

Related Media Links and Descriptions

Related Media #1: The Lion and the Mouse (1943)- Terrytoons
One of the earliest adaptations of this fable, this short animated video is a great rendition of the story. Have students pay attention to the way that music, sound effects, facial expressions, and other details contribute to the story's mood and theme. 6:32

Related Media #2: The Lion, Tiger, and Bear Family- Animal Odd Couples: Episode 1 Preview
Show this video to students to provide them with another example of a surprising friendship formed between different animals. 1:51

1 The decimal grid in each model represents 1 whole. Shade each model to show the decimal number below the model.



0.5 **0.05**

Complete the comparison statements.

0.05 is $\frac{1}{10}$ of 0.5.

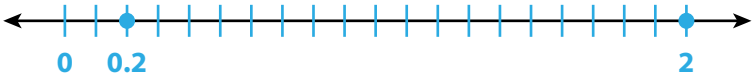
0.5 is 10 times the value of 0.05.

Complete the equations.

$0.5 \div 10 = 0.05$

$0.05 \times 10 = 0.5$

2 Draw a number line from 0 to 2. Then draw and label points at 2 and 0.2.



Use the number line to explain why 2 is 10 times the value of 0.2.

Answers will vary.
Possible answer: The number 2 is 10 times the value of 0.2 because 2 is 10 times as far from 0 as the distance from 0.2 to 0.

Complete the equations to show the relationship between 2 and 0.2.

$0.2 \times 10 = 2$

$2 \div 10 = 0.2$

3 Which type of model do you like best? Explain why.

Answers will vary.
Possible answer: I liked using decimal grids to see the relationship between each decimal number and 1 whole, but I thought it was easier to show the distance of numbers from 0 on a number line.

Multiply or divide.

1. $6 \div 10$ — **0.6**
2. $0.6 \div 10$ — **0.06**
3. $6 \div 10^2$ — **0.06**
4. $0.6 \div 10^2$ — **0.006**
5. $6 \div 10^3$ — **0.006**
6. $60 \div 10^3$ — **0.06**
7. 0.3×10 — **3**
8. 0.3×10^2 — **30**
9. 0.3×10^3 — **300**
10. 0.03×10^2 — **3**
11. 0.003×10^2 — **0.3**
12. 0.03×10^3 — **30**
13. $72 \div 10$ — **7.2**
14. 0.72×10^2 — **72**
15. $7{,}200 \div 10^3$ — **7.2**
16. $20 \div 10^2$ — **0.2**
17. 0.9×10^3 — **900**
18. 0.001×10^2 — **0.1**
19. $54 \div 10$ — **5.4**
20. $150 \div 10^3$ — **0.15**
21. 0.46×10^3 — **460**

22. What strategies did you use to solve the problems? Explain.

Answers will vary.
Possible answer: In problem 2, I divided a decimal by 10, so I moved the decimal point one place to the left. In problem 7, I multiplied a decimal by 10, so I moved the decimal point one place to the right.

Reading a Decimal in Word Form

Teacher Packet

What is the word form of each decimal?

1. 0.2
   two tenths

2. 0.02
   two hundredths

3. 0.002
   two thousandths

4. 0.12
   twelve hundredths

5. 0.012
   twelve thousandths

6. 0.102
   one hundred two thousandths

7. 1.002
   one and two thousandths

8. 9.4
   nine and four tenths

9. 90.04
   ninety and four hundredths

10. 0.94
    ninety-four hundredths

11. 500.2
    five hundred and two tenths

12. 8.008
    eight and eight thousandths

13. 700.06
    seven hundred and six hundredths

14. 6.335
    six and three hundred thirty-five thousandths

15. 3,000.001
    three thousand and one thousandth

16. What strategies did you use to help you read the decimals? Explain.

    Answers will vary.
    Possible answer: I read the digits to the right of the decimal point and used the name of the least place value.

Writing a Decimal in Standard Form

Teacher Packet

What decimal represents each number?

1 one and six tenths

1.6

2 eight and eleven hundredths

8.11

3 $6 \times 1 + 5 \times \frac{1}{10}$

6.5

4 thirteen and thirteen thousandths

13.013

5 $2 \times 10 + 7 \times \frac{1}{10} + 3 \times \frac{1}{100}$

20.73

6 $4 \times 1 + 1 \times \frac{1}{100} + 9 \times \frac{1}{1,000}$

4.019

7 five hundred twelve thousandths

0.512

8 $8 \times 100 + 2 \times \frac{1}{10} + 8 \times \frac{1}{1,000}$

800.208

9 $2 \times 1 + 4 \times \frac{1}{100}$

2.04

10 forty-two and forty-one hundredths

42.41

11 $7 \times 100 + 2 \times 10 + 3 \times 1 + 6 \times \frac{1}{10}$

723.6

12 twelve and sixty-eight thousandths

12.068

13 $3 \times 1{,}000 + 6 \times 100 + 3 \times 10 + 7 \times \frac{1}{10} + 2 \times \frac{1}{100} + 8 \times \frac{1}{1,000}$

3,630.728

14 nine hundred fifty-six and four hundred twenty-seven thousandths

956.427

15 How was writing decimals for numbers in word form different from numbers in expanded form?

Answers will vary.
Possible answer: For numbers in word form, I had to know what digits the words represent. In expanded form, the digits are given.

Write the symbol <, =, or > in each comparison statement.

1. 0.02 > 0.002
2. 0.05 < 0.5
3. 0.74 < 0.84
4. 0.74 > 0.084
5. 1.2 < 1.25
6. 5.130 = 5.13
7. 3.201 > 3.099
8. 0.159 < 1.590
9. 8.269 > 8.268
10. 4.60 > 4.060
11. 302.026 > 300.226
12. 0.237 > 0.223
13. 3.033 < 3.303
14. 9.074 < 9.47
15. 6.129 < 6.19
16. 567.45 > 564.75
17. 78.967 > 78.957
18. 5.346 < 5.4
19. 12.112 < 12.121
20. 26.2 = 26.200
21. 100.32 > 100.232

22. What strategies did you use to solve the problems? Explain.

Answers will vary.
Possible answer: I looked at the greatest place value for which the numbers had different digits. I compared these digits to tell whether the first number was greater or less than the second number.

Round each decimal to the nearest tenth.

1. 0.32
   0.3
2. 3.87
   3.9
3. 0.709
   0.7
4. 12.75
   12.8
5. 12.745
   12.7
6. 645.059
   645.1

Round each decimal to the nearest hundredth.

7. 1.079
   1.08
8. 0.854
   0.85
9. 0.709
   0.71
10. 12.745
    12.75
11. 645.059
    645.06
12. 50.501
    50.50

Round each decimal to the nearest whole number.

13. 1.47
    1
14. 12.5
    13
15. 200.051
    200

16. Write two different decimals that are the same value when rounded to the nearest tenth. Explain why the rounded values are the same.

    Answers will vary.
    Possible answer: The decimals 2.73 and 2.74 are both 2.7 when rounded to the nearest tenth. Both decimals are between 2.7 and 2.8, and both are closer to 2.7.

17. Round 1.299 to the nearest tenth and to the nearest hundredth. Explain why the rounded values are equivalent.

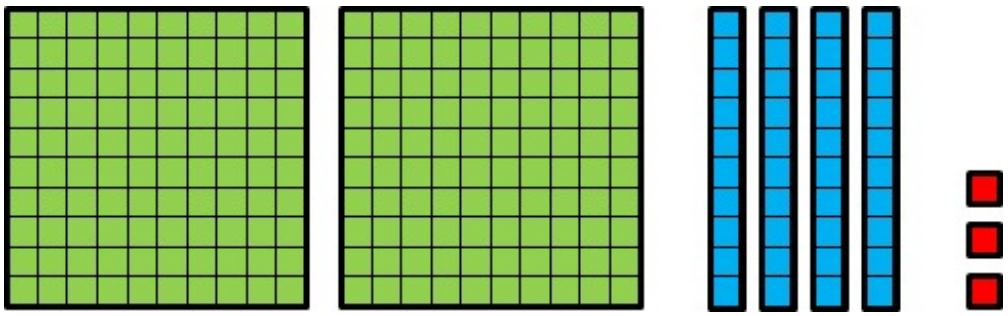
    Answers will vary.
    Possible answer: Use a place value chart. Consider the hundredths place (9) to round 1.299 to the nearest tenth, 1.3. Consider the thousandths place (9) to round to the nearest hundredth. In this case the hundredth would be rounded up, 1.30; which is equivalent to 1.3.

5.NBT Which number is it?

Alignments to Content Standards: 5.NBT.A.1

Task

Netta drew a picture on graph paper:



She said,

> *In my picture, a big square represents 1. Since ten rectangles make a big square, a rectangle represents 0.1. Since 100 little squares make a big square, a little square represents 0.01. So this picture represents 2.43.*

a. Is Netta Correct?

Manny said,

> *I drew the same picture, but in my picture, a little square represents 1, so this picture represents 243.*

b. Name some other numbers that this picture could represent. For each of these numbers, what does a little square represent? What does a rectangle represent? What does a big square represent? Explain.

c. Draw a picture to represent 0.047.

IM Commentary

The purpose of this task is to help students understand the fact that the value of a digit in one place is ten times the value of the same digit in the place to the right. Given that students will likely only have used base-ten blocks with the unit cube representing one, this task should not be introduced all at once if students are not familiar with unitizing (changing the definition of the whole and assigning value based on the relationship to the unit). The first part to this task alone could be expanded to a full lesson on how one arrangement of base ten blocks could represent more than one number depending on whether we see the large square as the whole or the small square as the whole. These two representations tend to work well for students making that jump because they can directly see that one small square is one hundredth of the large square. The other representations are more abstract for students and may be introduced once students are comfortable defining different blocks to be the unit.

A place value organizer can be an effective tool to summarize student work. Students should be encouraged to grapple with this task before seeing the place value organizer. After the students struggle and create different numbers, the place value organizer can be used to record different student ideas about "numbers that might work." Given three or more public student examples, ask students to create a generalization about numbers that will work.

Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths
2	4	3				
	2	4	•	3		
		2	•	4	3	
			•	2	4	3

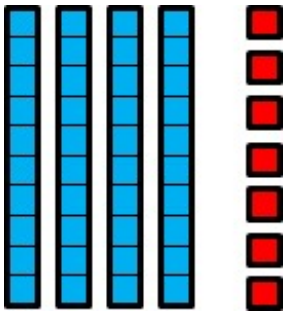
Solutions

Edit this solution

Solution: 1

a. If a little square represents 0.1, then a rectangle represents 1 because ten tenths make 1. A big square represents 10 since ten ones makes 10. So this picture could represent 24.3.

b. If a little square represents 0.001, then the picture below represents 0.047:



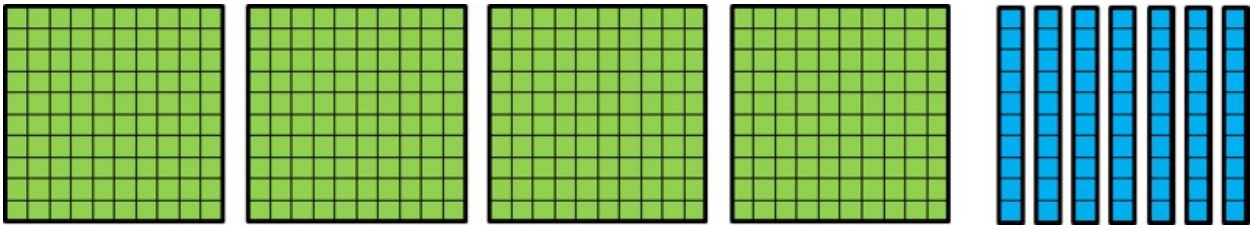
Edit this solution

Solution: 2

a. If a little square represents 0.001, then a rectangle represents 0.01 because ten thousandths make one hundredth. A big square represents 0.1 since ten hundredths

make a tenth. So this picture could represent 0.243.

b. If a rectangle represents 0.001, then the picture below represents 0.047:



5.NBT Kipton's Scale

Alignments to Content Standards: 5.NBT.A.1

Task

a. Kipton has a digital scale. He puts a marshmallow on the scale and it reads 7.2 grams. How much would you expect 10 marshmallows to weigh? Why?

b. Kipton takes the marshmallows off the scale. He then puts on 10 jellybeans and then scale reads 12.0 grams. How much would you expect 1 jellybean to weigh? Why?

c. Kipton then takes off the jellybeans and puts on 10 brand-new pink erasers. The scale reads 312.4 grams. How much would you expect 1,000 pink erasers to weigh? Why?

IM Commentary

The purpose of this task is to help students

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 represents in the place to its left (5.NBT.1)

By setting the task in the context of weighing objects and bundles of 10, 100, and 1,000 objects, it helps students visualize that bundling 10 units of a given place value will create 1 unit of the next highest place value. For example, taking 10 of an item that weighs 4.2 grams will result in 42 grams because it is 10 groups of 4 grams that weights 40 grams all together, and 10 groups of 0.2 grams that weigh 2 grams all

together. The task allows students to explore both the structure of our place value system and how we use that to efficiently multiply and divide powers of 10.

Though this task is written as questions to be discussed or answered by students, the parts of this task are most valuable as a set of scenarios to be infused throughout a unit on place value. The teacher can actually bring in a digital scale and go through a series of explorations with students. It might be natural to start with students weighing one object and making predictions about how much 10 or 100 of these objects would weigh. From there, the teacher may want to have students start weighing sets of 10 or 100 objects and work backwards to think about the weight of 1 object.

The digital scale has several advantages: the weight will always appear in decimal form, thereby making it perfect for students to start reasoning about shifts in decimal place value from a more intuitive place. Moreover, the digital scale will not always show the expected answer. For example, something that weighs 3.5 grams alone might weigh 35.4 grams (rather than 35 grams) when taken as a group of 10. This slight difference provides an excellent opportunity to talk about rounding error. It also requires students to think beyond the rules of sliding a decimal point to the right when multiplying by powers of 10.

If students were still developing the rules for multiplying and dividing by powers of 10, this task would also incorporate MP8, Look for and express regularity in repeated reasoning. It also incorporates parts of MP6, Attend to precision, in that a higher-level discussion will push students to reason why one marshmallow might weigh 7.2 grams, but 10 marshmallows might weigh 7.19 grams. See the solution for part (a) for further elaboration.

Solution

Solution:

a. 10 marshmallows should weigh 72 grams. Students might use repeated addition, multiplication or reason that each digit’s place value will be multiplied by a factor of 10:

$$\begin{aligned} 10 \times (7 + 0.2) &= \\ (10 \times 7) + (10 \times 0.2) &= \\ 70 + 2 &= \\ 72 & \end{aligned}$$

If students have had practice using digital scales in class, some students might respond with guesses that are close such as 73 grams or 72.4 grams because the original 7.2 grams may have been rounded to the nearest tenth. If, for example, the original actual weight were 7.24 grams, then the weight of ten marshmallows on a scale that rounds to the nearest tenth of a gram would be 72.4 grams.

b. 1 jellybean should weigh 1.2 grams. Students may come to the solution a number of ways.

- Students might notice that dividing 12 by 10 could be expressed in fraction form $\frac{12}{10}$. Students might further reason that

$$\frac{12}{10} = \frac{10}{10} + \frac{2}{10}$$

  or 1.2.
- Students might alternately reason that $12 \div 10$ is the same as

$$(10 \div 10) + (2 \div 10) = 1 + 0.2 = 1.2$$

- Students might also use the rule that they are beginning to develop about sliding the decimal point one place to the left to divide by 10.

c. 1,000 pink erasers should weigh about 31,240 grams. Students may come to the solution a number of ways:

- A student might reason that first, it would be necessary to find out what 100 erasers would weigh by multiplying by a factor of 10 and then further multiplying by another factor of 10 to find out what 1,000 erasers would weigh. This is represented by

$$312.4 \times 10 \times 10$$

  In this solution method, the student reasoned that multiplying by a factor of 10 and then another factor of 10 would be the same as multiplying by a factor of 100:

$$\begin{aligned} 312.4 \times 10 \times 10 &= \\ 312.4 \times 100 &= \\ 100 \times (300 + 10 + 2 + 0.4) &= \\ 30,000 + 1,000 + 200 + 40 &= \\ 31,240 & \end{aligned}$$

- Another student might want to find the weight of a single eraser. If 10 erasers weigh 312.4 grams, then one eraser must weigh 31.24 grams. From there the student could multiply the weight of one eraser by a factor of 1,000:

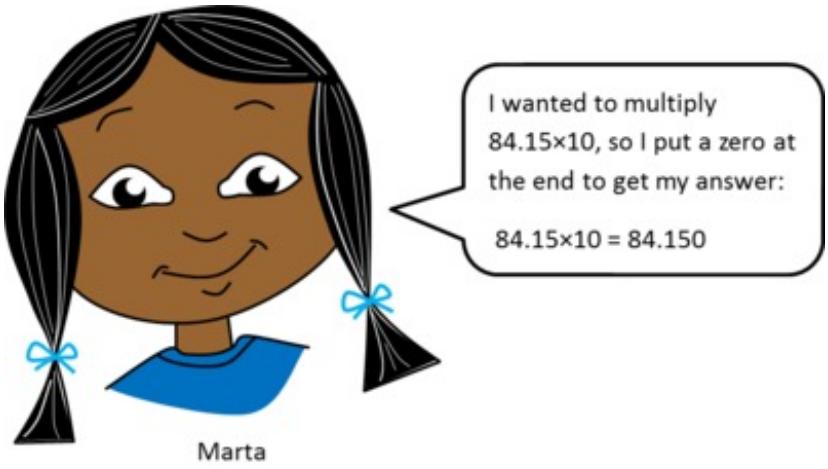
$$\begin{aligned} 1000 \times (30 + 1 + 0.22 + 0.04) &= \\ 30,000 + 1,000 + 200 + 40 &= \\ 31,240 & \end{aligned}$$

5.NBT Marta's Multiplication Error

Alignments to Content Standards: 5.NBT.A.2

Task

Marta made an error while finding the product 84.15×10.



In your own words, explain Marta's misunderstanding. Please explain what she should do to get the correct answer and include the correct answer in your response.

IM Commentary

This task highlights a common misconception among students deriving the rules for multiplying a number by a power of 10. Many students correctly recognize that multiplying a whole number by a power of 10 will result in a product with as many 0s at

the end as were in the power of 10. When students transition to multiplying decimals by powers of 10, they often generalize this "rule" without thinking about the value that results. It is important to create dialogue around this misconception, especially during the initial stages of deriving rules for multiplying and dividing numbers by powers of 10. This task could be used to ground a classroom discussion during the first day of multiplying decimals by powers of 10. It would also be appropriate for a formative assessment to check for student understanding of this pivotal transition from whole number reasoning to decimal reasoning.

The Standards for Mathematical Practice focus on the nature of the learning experiences by attending to the thinking processes and habits of mind that students need to develop in order to attain a deep and flexible understanding of mathematics. Certain tasks lend themselves to the demonstration of specific practices by students. The practices that are observable during exploration of a task depend on how instruction unfolds in the classroom. While it is possible that tasks may be connected to several practices, only one practice connection will be discussed in depth. Possible secondary practice connections may be discussed but not in the same degree of detail.

This particular task helps to illustrate Mathematical Practice Standard 3, Construct viable arguments and critique the reasoning of others. Students are asked to critique the reasoning of Marta's claim that when you multiply 84.15 X 10, you only have to add a zero at the end to get the answer. This type of task provides students with an opportunity to distinguish a reasonable explanation from that which is flawed. If there is a flaw in the argument they can further explain why it is flawed. To decide if Marta's claim is true or false, students will have to think critically about the "rules" they used when multiplying whole numbers by 10. By adding a zero to 84.15, the value stayed the same. If Marta had shifted the decimal one place to the right, each digit would represent ten times its original value. Students must recognize that Marta's misunderstanding comes from an understandable, but erroneous student line of thinking; if students use this rule for whole numbers, then they are likely to try to apply it to decimals as well. Students working on this task should see that while Marta's rule does work for whole numbers being multiplied by powers of 10, it will not work for decimals being multiplied by powers of 10 for the reasons stated in the solution. This process is very clearly explained using expanded notation and the distributive property in the solution set. Learning how to argue whether a claim is true or false concisely and precisely must become a routine part of a student's mathematical work as should the ability to construct an argument around a correct answer. These are both skills practiced in this task.

Edit this solution

Solution

Marta is mistakenly trying to continue a pattern dealing with multiplying whole numbers by powers of 10: the product will have the same digits as the whole number followed by the same number of 0s as the power of 10. Marta tried to place a 0 after 84.15 in her problem to continue this pattern, but placing a 0 in the thousandths place did not change the value of 84.15. Instead, Marta can shift the decimal one place to the right so that each digit occupies ten times its original place. Her correct answer is 841.5. Another way of finding the product of 84.15 and 10 is to rewrite 84.15 in expanded notation and use the distributive property:

$$\begin{aligned}(80 + 4 + 0.1 + 0.05) \times 10 &= (80 \times 10) + (4 \times 10) + (0.1 \times 10) + (0.05 \times 10) \\ &= 800 + 40 + 1 + 0.5 \\ &= 841.5\end{aligned}$$

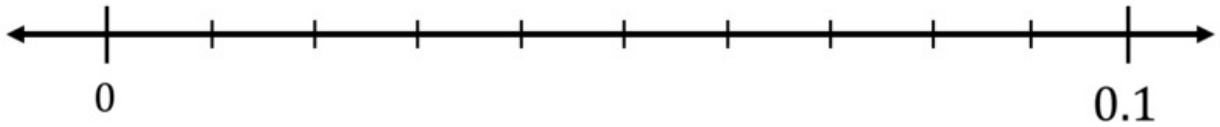
Using expanded notation also highlights that the place value of each digit needs to be multiplied by a factor of 10. It should be noted that the digit 8 in the original expression represented 8 tens, but will be 8 hundreds in our product. In Marta's solution, the 8 still only represents 8 tens and the magnitude of the number has not changed.

5.NBT Placing Thousandths on the Number Line.

Alignments to Content Standards: 5.NBT.A.3

Task

Label all of the tick marks on the number line.



Plot and label each of the following numbers on the number line.

$$0.100$$
$$0.010$$
$$0.072$$
$$0.038$$

Which of these numbers is greatest? Which is least? How can you tell by looking at the number line?

IM Commentary

Though this task primarily deals with comparing decimal numbers on a number line, it also requires students to draw upon what they know about the base ten system. They must recognize that the distance from 0 to 0.1 is partitioned into ten equal pieces and

that one tenth of one tenth is 0.01. Once they realize that each increment goes up by 0.01, they can fill in the framework to place other numbers. One of the key instructional points in this task is that our number line orders numbers least to greatest. Therefore, numbers farther to the right are greater than those to the left. This understanding will hold true for future explorations of rational numbers as well. A good precursor task for this one would be 5.NBT Comparing Decimals on the Number Line. Side note: It would be good to have versions of this for thousandths that are not between 0 and 1.

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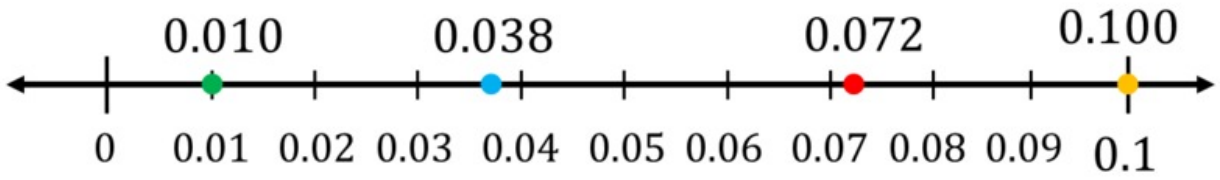
Solution



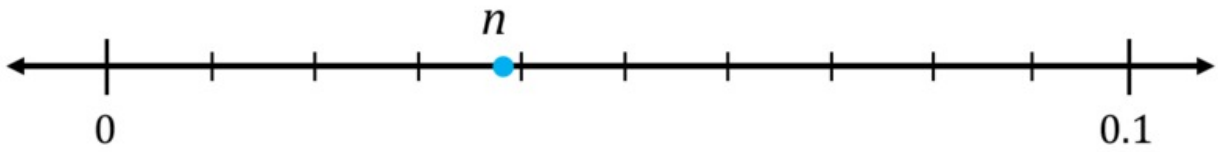
0.010 is least because it is the farthest to the left on the number line and 0.100 is greatest because it is the farthest to the right on the number line.

5.NBT Rounding to Tenths and Hundredths

Alignments to Content Standards: 5.NBT.A.4

Task

A number n is shown on the number line.



1. The tick marks are evenly spaced. Label them. 2. What is n rounded to the nearest hundredth? 3. What is n rounded to the nearest tenth?

IM Commentary

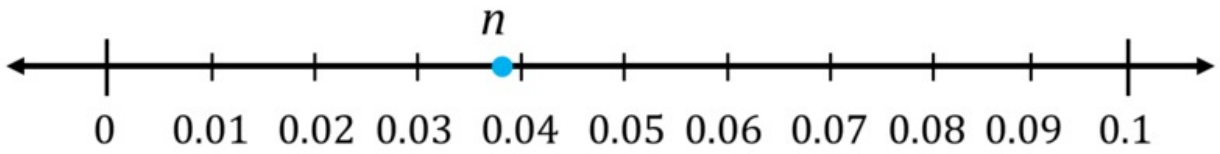
The purpose of this task is for students to use the position of a number on the number line to round the number without knowing its exact value. Though this task deals most directly with rounding, it also requires students to understand or figure out that one tenth of 0.1 is 0.01. Teachers should anticipate that students may initially struggle to label the tick marks and may want to offer such guiding questions as, "How many equal parts is the line segment between 0 and 0.1 split into?" Teachers may also want to encourage students to check their own guesses by writing out the appropriate multiples to see if they work out to 0.1. Once the class concludes that one tenth of 0.1 is 0.01, it may help to reinforce that concept by showing the decimal fractions for each

value. We can see that $\frac{10}{100}$ is indeed the same number as $\frac{1}{10}$. Teachers should also anticipate that students may be unfamiliar with the practice of having a letter stand for a number. Though 3rd grade students are introduced to this idea (see 3.OA.D.8), 5th grade students may not be as familiar with a situation where a letter represents an unknown number that we have some information about but cannot solve for exactly. A good precursor task for this one would be 5.NBT Comparing Decimals on the Number Line. A common misconception to look out for: a student may round up correctly to the nearest hundredth, but then instead of rounding down to 0, selects 0.1 as the nearest tenth (because the student does not view 0 as a tenth).

Edit this solution

Solution

First, label all of the tick marks:



We can see that n is closer to 0.04 than 0.03, so it rounds up to 0.04.

We can also see that n is closer to 0 than to 0.1, so n rounds down to 0.