Lesson 1-4

Wednesday, August 14, 2019 10:24 AM

MB 23

Name

Lesson 1-4
Understand Decimal Place Value

Solve & Share
A runner won a 100-meter race with a time of 9.85 seconds. How can you use place value to explain this time? Complete a place-value chart to show this time.

I can ...
read and write decimals in different ways.

I can also generalize from examples.

Generalize
You can use what you know about whole-number place value to help you understand decimal place value.

9.85 is 9 full seconds and 85/100 of another second.

Standard Form	Ones	Tenths	Hundredths	Thousandths
	9	8	5	0

Number Name: Nine and eighty-five hundredths

Expanded form: $(9 \times 1) + (8 \times \frac{1}{10}) + (5 \times \frac{1}{100})$

Equivalent Decimals: $9.85 = 9.850 = 9.8500$

Look Back! **Use Structure** In the decimal 9.85, what is the value of the 8? the value of the 5?

The value of the 8 is 0.8 or $\frac{8}{10}$

The value of the 5 is 0.05 or $\frac{5}{100}$

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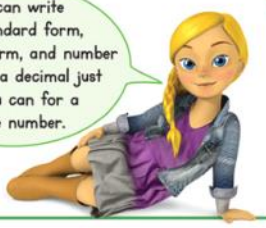
Essential Question: How Can You Represent Decimals?

A

Jo picked a seed from her flower. The seed has a mass of 0.245 gram. What are some different ways you can represent 0.245?



B

ones		tenths	hundredths	thousandths
0	.	2	4	5

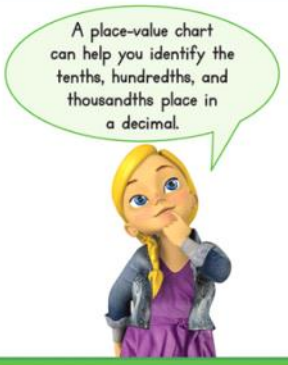
Standard Form: 0.245

The 5 is in the thousandths place. Its value is 0.005.

Expanded Form:

$\left(2 \times \frac{1}{10}\right) + \left(4 \times \frac{1}{100}\right) + \left(5 \times \frac{1}{1{,}000}\right)$

Number Name: two hundred forty-five thousandths



Convince Me! **Reasoning** How many hundredths are in one tenth? How many thousandths are in one hundredth? Tell how you know.

Ones . tenths hundredths thousandths

0	. 1	0	
0	. 0	1	0

1 tenth = 10 hundredths
0.1 = 0.10

1 hundredth = 10 thousandths
0.01 = 0.010

Name _____

Another Example

Equivalent decimals name the same amount.

What are two other decimals equivalent to 1.4?

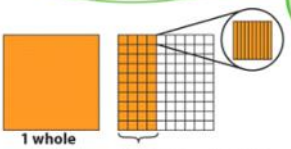
One and four tenths is the same as one and forty hundredths.

$1.4 = 1.40$

One and four tenths is the same as one and four hundred thousandths.

$1.4 = 1.400$

So, $1.4 = 1.40 = 1.400$.



4 columns = 4 tenths
40 small squares = 40 hundredths
40 hundredths = 400 thousandths

Guided Practice

Do You Understand?

1. **Reasoning** The number 3.453 has two 3s. Why does each 3 have a different value?

The 3's are in different place values. One is 3 ones and one is 0.003

Do You Know How?

In **2** and **3**, write each number in standard form.

2. $(4 \times 100) + (7 \times 10) + (6 \times 1) + \left(6 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right) + \left(7 \times \frac{1}{1,000}\right)$

4 7 6 . 6 3 7

3. four and sixty-eight thousandths

4 . 0 6 8

Complete 5, 6, 10, 16 & 17

5. $(3 \times 1) + \left(3 \times \frac{1}{10}\right) + \left(9 \times \frac{1}{1,000}\right)$

3 . 3 0 9 = 3.309

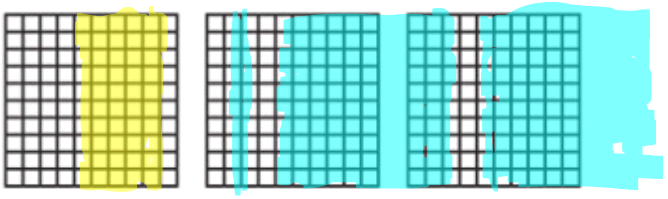
6. nine and twenty hundredths

9 . 2 0 = 9.20

10. 4.200

4.2 ; 4.20 ; 4.2000 ; 4.20000

16. **Higher Order Thinking** Three boys cut out hundredths decimal models. Derrick does not shade any of his models. Ari shades half of one model. Wesley shades two models and one tenth of another model. What decimal represents the amount each boy shades?



Derek = 0.0
Ari = 0.5 or 0.50
Wesley = 2.1 or 2.10

17. Find two decimals that are equivalent to $(4 \times 10) + \left(7 \times \frac{1}{100}\right)$. Write the decimals in the box.

		40.07		40.070	
40.7	40.07	4.7	40.070	4.70	40.70

4 0 . 0 7

40.07