Notes 1-7

Wednesday, August 14, 2019 11:47 AM

Look for and Use Structure

Name _____

Solve

Problem Solving

Lesson 1-7

Look for and Use Structure

I can ...
look for and use the structure of our decimal place value system to solve problems.

I can also use decimal place value to solve problems.

Solve & Share

Angie volunteers in the school library after school. The librarian gave her a stack of books and told her to use the number on each book to shelve it where it belongs.

How can Angie arrange the books in order from least to greatest to make shelving them easier?

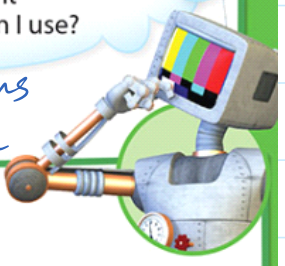
323.02
323.13
323.17
323.202
323.21
323.233

Angie should know the whole numbers are equal and start comparing in the tenths place. She should use the hundredths when the tenths have the same digits.

Thinking Habits

Be a good thinker!
These questions can help you.

- What patterns can I see and describe?
- How can I use the patterns to solve the problem?
- Can I see expressions and objects in different ways?
- What equivalent expressions can I use?



Look Back! Use Structure Explain why 323.202 is less than 323.21 even though 202 is greater than 21.

All digits to the hundredths are the same. A 0 in the hundredths is less than a 1 in the hundredths.

a 1 in the numerator.

Learn Glossary

Essential Question

How Can You Use Structure to Solve Problems?

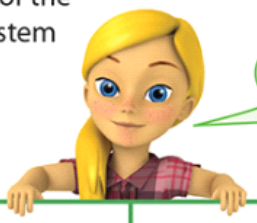
A

Analyze the chart. What do you notice that can help you complete the chart?

0.01	0.02	0.03					0.08		0.1
0.11				0.15	0.16			0.19	
0.21								0.29	
	0.32		0.34			0.37			

What do I need to do to solve this problem?

I can use the structure of the decimal place value system to complete the chart.



You can look for patterns to find the missing numbers.

B

How can I make use of structure to solve this problem?

I can

- find and describe patterns.
- use the patterns to see how the numbers are organized.
- analyze patterns to see the structure in the table.
- break the problem into simpler parts.

C

Solve

Here's my thinking...

As you move down the columns, tenths increase by 1 while the hundredths stay the same.

Moving from left to right in the rows, tenths stay the same, except for the last number, while the hundredths increase by 1.

Column 1

0.01
0.11
0.21
0.31

Row 1

0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1

Convince Me! Use Structure Write the missing numbers. Explain how you can use structure to find the last number in the bottom row.

0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
0.11		0.12	0.13	0.14	0.16		0.18	0.19	0.2
0.21		0.22	0.23	0.24	0.25	0.26	0.28	0.29	0.3
0.31	0.32		0.34	0.35	0.36	0.37	0.38	0.39	0.4

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Name _____

Practice Buddy Tools Assessment

Guided Practice*

Use Structure

Each of these grids is a part of a decimal number chart similar to the one on page 42.

1. Describe the pattern for moving from a pink square to a green square. Then write the missing numbers.

0.55		0.32	
	0.66		0.43
0.75		0.52	
	0.86		0.63
0.95		0.72	

To go from a pink to a green square add 1 to the tenths and 1 to the hundredths.

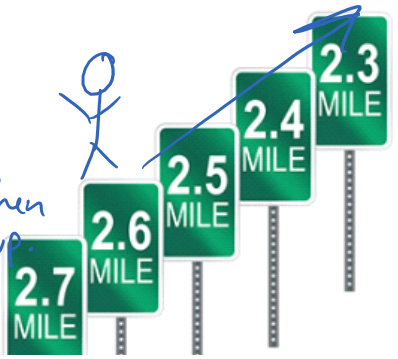
2. How can you use patterns to find the number that would be in the box below 0.52?

Add 1 to the tenths. The hundredths stays the same.

Complete ~~# 3-8~~ 3, 4 & 8

Use Structure

Pamela is hiking. When she returns to camp, she passes the mile markers shown at the right.



3. Explain how you can use structure to find the decimal numbers that will be shown on the next four mile markers.

The tenths decrease by 1 tenth. When she gets to 2.0 she must regroup. The 4 signs are: 2.2, 2.1, 2.0, 1.9

she gets to 2.0 ✓
The 4 signs are: 2.2, 2.1, 2.0, 1.9

4. Pamela stops at the 1.8 mile marker. Where will she be if she walks one tenth of a mile towards camp? one mile towards camp? Explain.

1.8 → 1.7 The tenths decrease by 1/10.
1.8 → 0.8 The one's place decrease and
The tenths stay the same.

Thousandths Chart

The students in Ms. Lowell's class wrote a thousandths decimal chart on the board. Some of the numbers got erased.

0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009	
0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.02
0.021	0.022	0.023	0.024	0.025	0.026	0.027	0.028	0.029	0.03
0.031	0.032	0.033	0.034	0.035	0.036	0.037	0.038	0.039	0.04

5. **Use Structure** Describe the pattern for moving across a row from left to right.

6. **Be Precise** How does the pattern change in the last square of each row?

7. **Use Structure** Describe the pattern for moving down a column.

8. **Use Repeated Reasoning** Write the missing numbers in the decimal chart above.