Student Guide

Compare and Order Decimals (SG pp. 375–378) Questions 1–12

1.* 9765.420; Possible response: I put the 9 in the thousands place because it was the largest digit. Then I placed the 7 in the hundreds place because it was the next largest digit. I continued to place the digits in each place from left to right in order from the largest digit to the smallest digit.

2.* If the zero is allowed in the thousands place the number will be 0245.679. If the zero is not allowed in the thousands place the number will be 2045.679; Possible response: I started with the smallest digit in the largest place (the thousands) then I continued to place the numbers from smallest to largest as I moved each place to the right.

3.* Possible response: If you know about place value you can tell the value of each digit in a number. This helps you know if a digit represents a large number or a small number.

4. A.*The numbers close to zero have a zero in the tenths place and a very low number (less than 5) in the hundredths place.

B.*The numbers close to 0.1 have a zero or a 1 or 2 in the tenths place.

C.*The numbers close to 0.5 have a number close to or equal to 5 in the tenths place.

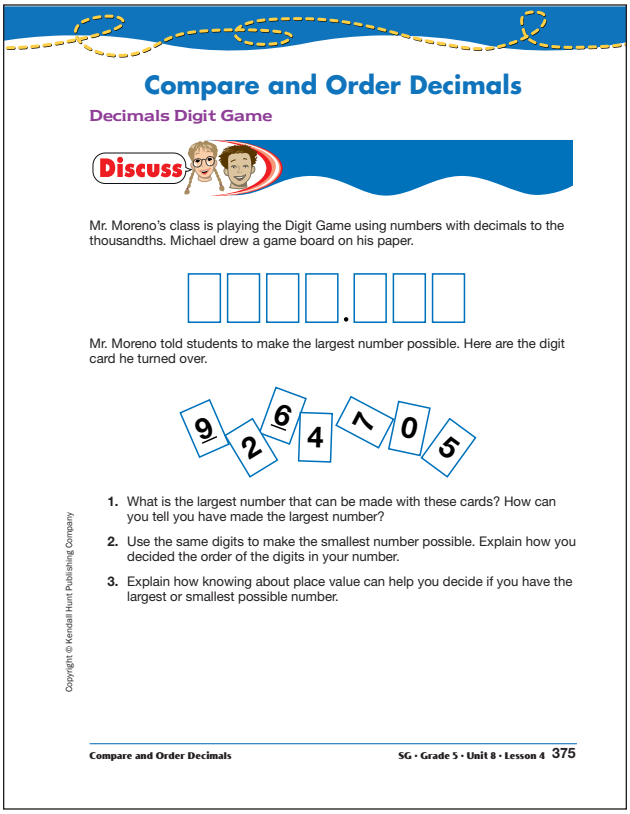
D.*The numbers close to 1.0 have a 1 in the ones place or they have a very high number like a 7, 8 or 9 in the tenths place.

E.*The numbers greater than 1 have digits larger than 1 in the ones place. Some of them are also double digit numbers.

5–6.*

Decimals Sorting Table

Decimals Near or Equal to 0	Decimals Near or Equal to 0.1	Decimals Near or Equal to 0.5	Decimals Near or Equal to 1	Decimals Much Greater Than 1
0.0	0.085	0.452	0.819	4
0.003	0.09	.491	.89	4.005
0.007	0.10	0.500, 0.50	0.9	6.03
0.009	0.101	0.6	0.981	7.9
.01	0.11	0.602	1.0	23.56
0.011	0.2	0.61	1.03	30.4
			1.075	



Compare and Order Decimals

Decimals Digit Game

Discuss

Mr. Moreno's class is playing the Digit Game using numbers with decimals to the thousandths. Michael drew a game board on his paper.

Mr. Moreno told students to make the largest number possible. Here are the digit card he turned over.

9 2 6 4 7 0 5

1. What is the largest number that can be made with these cards? How can you tell you have made the largest number?
2. Use the same digits to make the smallest number possible. Explain how you decided the order of the digits in your number.
3. Explain how knowing about place value can help you decide if you have the largest or smallest possible number.

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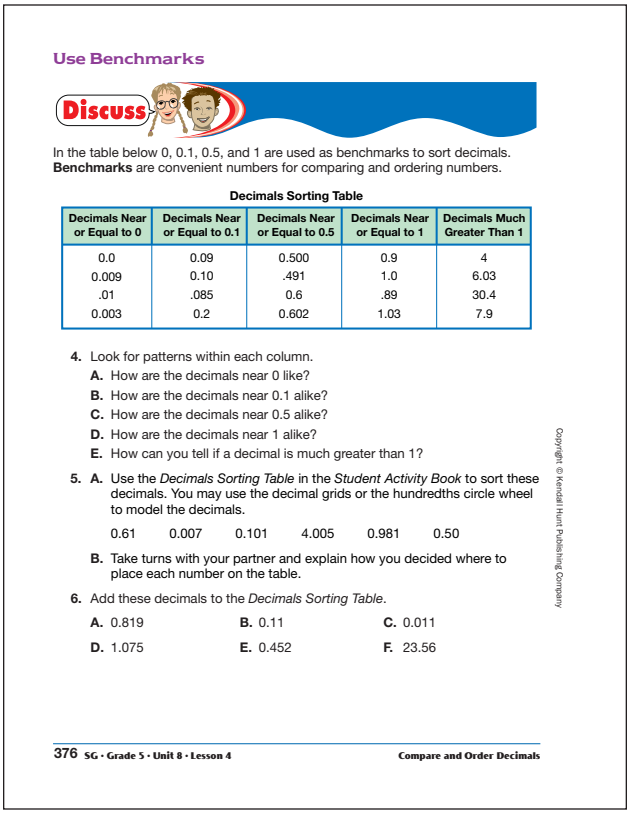

Use Benchmarks

Discuss

In the table below 0, 0.1, 0.5, and 1 are used as benchmarks to sort decimals. **Benchmarks** are convenient numbers for comparing and ordering numbers.

Decimals Sorting Table

Decimals Near or Equal to 0	Decimals Near or Equal to 0.1	Decimals Near or Equal to 0.5	Decimals Near or Equal to 1	Decimals Much Greater Than 1
0.0	0.09	0.500	0.9	4
0.009	0.10	.491	1.0	6.03
.01	.085	0.6	.89	30.4
0.003	0.2	0.602	1.03	7.9

4. Look for patterns within each column.
   - A. How are the decimals near 0 like?
   - B. How are the decimals near 0.1 alike?
   - C. How are the decimals near 0.5 alike?
   - D. How are the decimals near 1 alike?
   - E. How can you tell if a decimal is much greater than 1?
5. A. Use the *Decimals Sorting Table* in the *Student Activity Book* to sort these decimals. You may use the decimal grids or the hundredths circle wheel to model the decimals.

   0.61 0.007 0.101 4.005 0.981 0.50

   B. Take turns with your partner and explain how you decided where to place each number on the table.
6. Add these decimals to the *Decimals Sorting Table*.

   A. 0.819 B. 0.11 C. 0.011

   D. 1.075 E. 0.452 F. 23.56

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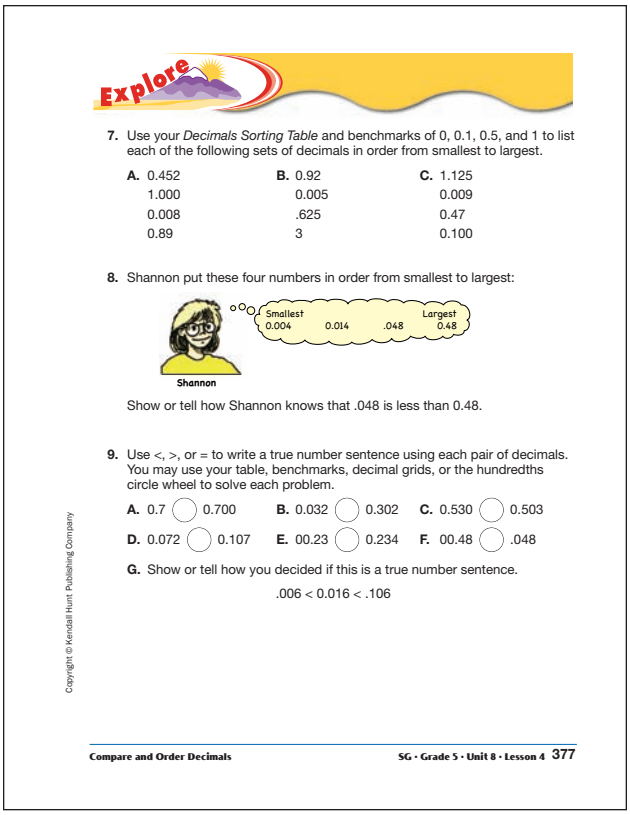
***Answers and/or discussion are included in the lesson.**



Explore

7. Use your *Decimals Sorting Table* and benchmarks of 0, 0.1, 0.5, and 1 to list each of the following sets of decimals in order from smallest to largest.

A.	B.	C.
0.452	0.92	1.125
1.000	0.005	0.009
0.008	.625	0.47
0.89	3	0.100

8. Shannon put these four numbers in order from smallest to largest:

Show or tell how Shannon knows that .048 is less than 0.48.

9. Use <, >, or = to write a true number sentence using each pair of decimals. You may use your table, benchmarks, decimal grids, or the hundredths circle wheel to solve each problem.

A. 0.7 ◯ 0.700 B. 0.032 ◯ 0.302 C. 0.530 ◯ 0.503

D. 0.072 ◯ 0.107 E. 00.23 ◯ 0.234 F. 00.48 ◯ .048

G. Show or tell how you decided if this is a true number sentence.

.006 < 0.016 < .106

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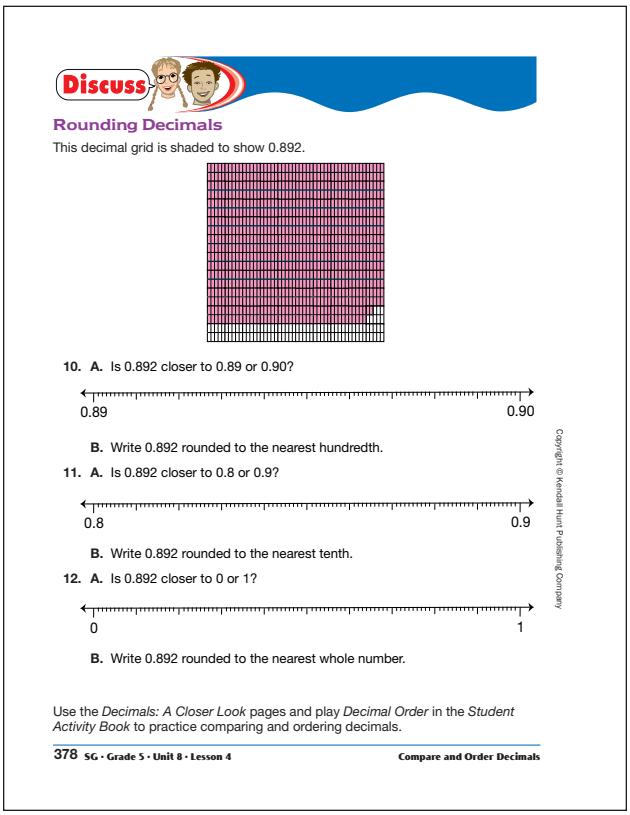

Discuss

Rounding Decimals

This decimal grid is shaded to show 0.892.

10. A. Is 0.892 closer to 0.89 or 0.90?

B. Write 0.892 rounded to the nearest hundredth.

11. A. Is 0.892 closer to 0.8 or 0.9?

B. Write 0.892 rounded to the nearest tenth.

12. A. Is 0.892 closer to 0 or 1?

B. Write 0.892 rounded to the nearest whole number.

Use the *Decimals: A Closer Look* pages and play *Decimal Order* in the *Student Activity Book* to practice comparing and ordering decimals.

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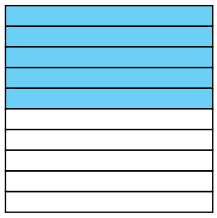
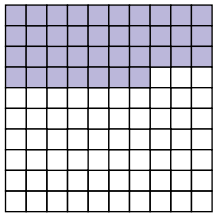
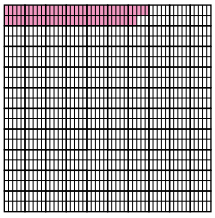
7. **A.** 0.008, 0.452, 0.89, 1.000
   B. 0.005, .625, 0.92, 3
   C. 0.009, 0.100, 0.47, 1.125
8. 0.048 is equal to $\frac{48}{1000}$ and that is between 0 and 0.1 but 0.48 is $\frac{48}{100}$ which is close to .5. Since 0.1 is less than 0.5, 0.048 is less than 0.5.
9. **A.** =
   B. <
   C. >
   D. <
   E. <
   F. >
   G. Yes, this is true. I thought about fractions. .006 is $\frac{6}{1000}$, 016 is $\frac{16}{1000}$, and .106 is $\frac{106}{1000}$.
10. **A.*** 0.89
    B.* 0.89
11. **A.*** 0.9
    B.* 0.9
12. **A.*** 1
    B.* 1

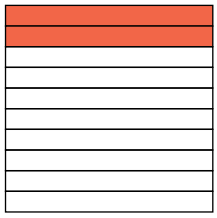
***Answers and/or discussion are included in the lesson.**

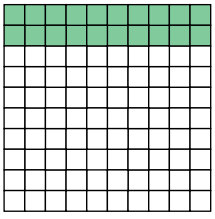
Homework (SG p. 379)
Questions 1–6

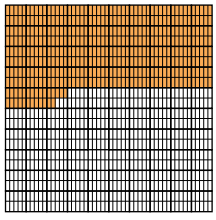
1. A. 

B. 

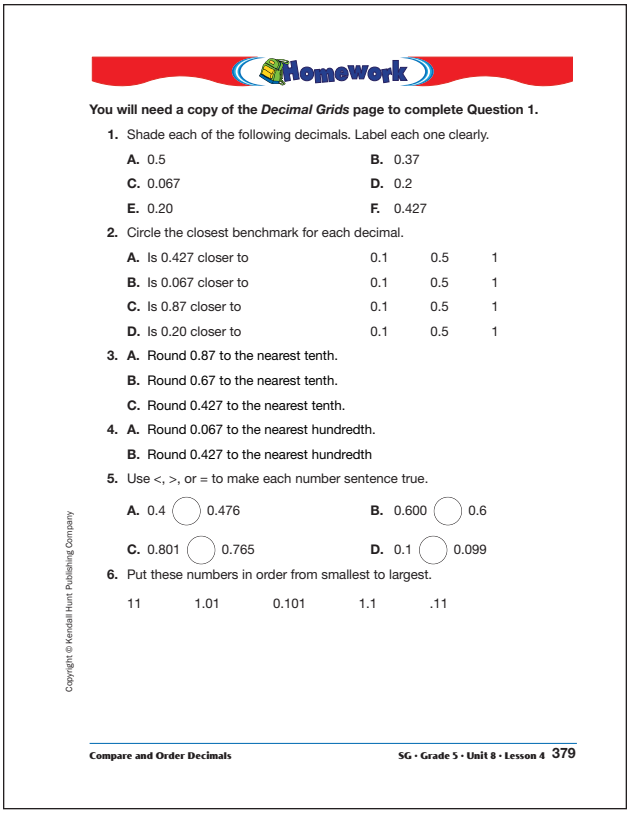
C. 

D. 

E. 

F. 

2. A. 0.5
   B. 0.1
   C. 1
   D. 0.1
3. A. 0.9
   B. 0.7
   C. 0.4
4. A. 0.07
   B. 0.43
5. A. <
   B. =
   C. >
   D. >
6. 0.101, .11, 1.01, 1.1, 11



Homework

You will need a copy of the *Decimal Grids* page to complete Question 1.

1. Shade each of the following decimals. Label each one clearly.
   - **A.** 0.5
   - **B.** 0.37
   - **C.** 0.067
   - **D.** 0.2
   - **E.** 0.20
   - **F.** 0.427
2. Circle the closest benchmark for each decimal.
   - **A.** Is 0.427 closer to 0.1 0.5 1
   - **B.** Is 0.067 closer to 0.1 0.5 1
   - **C.** Is 0.87 closer to 0.1 0.5 1
   - **D.** Is 0.20 closer to 0.1 0.5 1
3. **A.** Round 0.87 to the nearest tenth.
   B. Round 0.67 to the nearest tenth.
   C. Round 0.427 to the nearest tenth.
4. **A.** Round 0.067 to the nearest hundredth.
   B. Round 0.427 to the nearest hundredth
5. Use <, >, or = to make each number sentence true.
   - **A.** 0.4 ◯ 0.476
   - **B.** 0.600 ◯ 0.6
   - **C.** 0.801 ◯ 0.765
   - **D.** 0.1 ◯ 0.099
6. Put these numbers in order from smallest to largest.

   11 1.01 0.101 1.1 .11

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