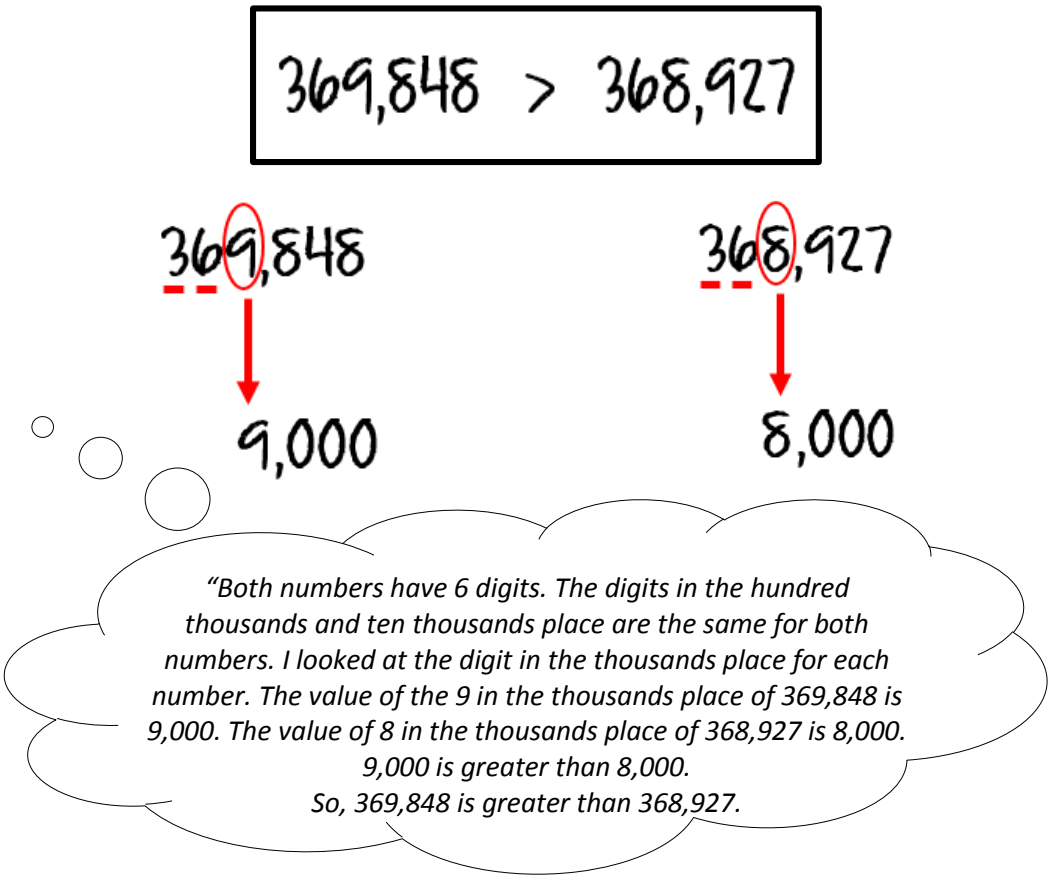
Grade 4 Important Math Information

"Place Value, Addition, and Subtraction"

Dear Family,

Our class is beginning a new unit of study in mathematics called *Place Value, Addition, and Subtraction.* During this unit of study students will work with numbers up to 1,000,000. Students will compare numbers using >, =, and < symbols, round numbers, and use expanded form to represent numbers. Students will solve addition and subtraction problems within 1,000,000 using efficient strategies, including U.S. algorithms. The goal is that students are computationally fluent. This means that students are accurate, efficient, and flexible. The specific learning goals your student will be working toward are listed below with examples of student work showing understanding of each learning goal.

Learning Goal: Understand place value up to 1,000,000 and read, write, compare, and round numbers.

Example Problem	**Example Student Solution**
Use >, =, or < to compare 369,848 and 368,927.	

Learning Goal: Fluently add and subtract numbers within 1,000,000 using efficient strategies, including U.S. standard algorithms, and be able to add and subtract to solve word problems.

Example Problems	Example Student Solutions

Sun City Stadium sold tickets for 2 baseball games. 32,128 tickets were sold on Friday. 28,594 tickets were sold on Saturday. How many total tickets were sold on Friday and Saturday?

<u>Breaking the Numbers Apart</u>

32,128 + 28,594

32,128 + 20,000 = 52,128
52,128 + 8,500 = 60,628
60,628 + 90 = 60,718
60,718 + 4 = 60,722

"I broke 28,594 into 20,000, 8,500, 90, and 4. First, I added 32,128 + 20,000 and got 52,128. I continued to add each of the parts and got a total of 60,722. So, 32,128 + 28,594 = 60,722

<u>Adding by Place Value</u>

32,128 + 28,594

8 + 4 = 12
20 + 90 = +110
100 + 500 = +600
2,000 + 8,000 = +10,000
30,000 + 20,000 = +50,000
32,128 + 28,594 = 60,722

60,722 total tickets were sold.

<u>U.S. Standard Algorithm</u>

32,128 + 28,594

```
  1  11
 32,128
+28,594
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 60,722
```

60,722 total tickets were sold.

The Hall family is driving from Naples, FL to Rochester, NY. The distance between the two cities is 1,443 miles. On Monday, the family drove 798 miles. How many more miles do they need to drive to get to Rochester, NY?

<u>Changing the Numbers to Create an Easier Problem</u>

1443 − 798

They need to drive 645 miles.

798 +2

1,443
− 800
643 +2 = 645

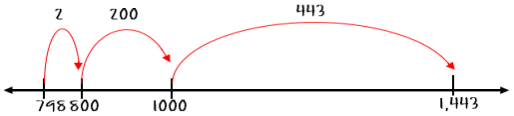
"I looked at the numbers in the problem and realized that by changing 798 to 800 I can create and easier problem. The difference between 1,443 and 800 is 643. Since the difference between 1,443 and 800 is 2 less than the actual difference between 1,443 and 798, I need to add 2 to 643 to find the answer."

<u>Use Inverse Operations</u>

798 + ☐ = 1,443

They need to drive 645 miles.

443 + 200 + 2 = 645



<u>U.S. Standard Algorithm</u>

1443 − 798

```
 0 13 13  1
 1,443
-  798
-------
   645
```

They need to drive 645 miles.

Mathematical Thinking and Practices Learning Goal: Recognize patterns and relationships and be able to use them to solve problems.

Mathematical Thinking and Practices Learning Goal: Find and use efficient strategies that always work.

Things you can do at home to support your student throughout this unit of study:

- **Talk About Strategies**
  Work with your student to practice different addition and subtraction strategies. Have your student explain the work they are doing. Ask them why they chose that particular strategy. The goal is for students to use accurate and efficient strategies that adjust to the numbers in the problem.

- **Collect 1,000**
  Together you and your student can collect 1,000 of the same small objects to see what a collection of exactly 1,000 things (such as pebbles, bread tabs, gallon milk lids, or ice-cream sticks) looks like. Before starting, have your student estimate how long he or she thinks it will take to collect 1,000 objects and how much room the objects will take up. As the collection grows, have your student adjust his/her estimates, considering how long it has taken so far or how much room several hundred take up. Periodically, you and your student can figure out how many more objects you need to collect. Ask him /her to suggest ways to arrange the objects so that it is easy to keep track of how many are there.

- **Math and Literature**
  Here are some children's books that contain ideas related to our work in this mathematics unit of study.
  Look for them in your local public library and read them together.
  A Million Fish . . . More or Less by Patricia McKissack
  How Much is a Million by David Schwartz
  On Beyond a Million: An Amazing Math Journey by David Schwartz
  Can You Count to a Googol? by Robert Wells