4th Grade Math: Comparing Numbers to 100,000

Lesson Objective:

By the end of this lesson, students will be able to:

- Understand how to compare numbers up to 100,000 using place value.
- Use comparison symbols (>, <, =) correctly.
- Arrange numbers in ascending and descending order.

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1. Introduction to Comparing Numbers

Explanation: Comparing numbers means determining if one number is larger, smaller, or equal to another. When we compare numbers up to 100,000, we need to look at the value of each digit from the largest place value to the smallest.

Comparison Symbols:

- **Greater than (>)**: Shows that the number on the left is larger than the number on the right.
- **Less than (<)**: Shows that the number on the left is smaller than the number on the right.
- **Equal to (=)**: Shows that both numbers are the same.

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2. Understanding Place Value

When comparing large numbers, we use **place value** to break down the digits. For example, in the number **58,429**, the place values are as follows:

Ten Thousands	Thousands	Hundreds	Tens	Ones
5	8	4	2	9

Steps to Compare Numbers:

- Start from the leftmost digit (largest place value) and compare the digits.
- If the digits are the same, move to the next place value to the right.
- Continue until you find a difference between the digits.

Example: Compare **42,315** and **39,872**.

- Ten thousands: 4 > 3, so **42,315 > 39,872**.

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3. Comparing Numbers: Step-by-Step

Example 1: Compare **76,493** and **75,982**.

1. Look at the ten thousands place: 7 = 7.
2. Look at the thousands place: 6 > 5, so **76,493 > 75,982**.

Example 2: Compare **58,203** and **58,302**.

1. Ten thousands: 5 = 5.
2. Thousands: 8 = 8.
3. Hundreds: 2 = 2.
4. Tens: 0 < 3, so **58,203 < 58,302**.

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4. Ordering Numbers

When we arrange numbers in **ascending** (least to greatest) or **descending** (greatest to least) order, we follow the same steps as comparing.

Example: Order these numbers from least to greatest: 67,892; 65,431; 68,921.

1. Compare **67,892** and **65,431**: 67,892 > 65,431.
2. Compare **68,921** and **67,892**: 68,921 > 67,892.
3. The correct order is: **65,431 < 67,892 < 68,921**.

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5. Practice Problems (Guided Practice)

Compare the following pairs of numbers using >, <, or =:

1. 48,562 ___ 49,200
2. 23,984 ___ 23,798
3. 91,452 ___ 91,452
4. 36,409 ___ 36,410
5. 82,754 ___ 83,124

Order the following numbers from greatest to least:

1. 54,321; 56,879; 55,432
2. 89,650; 87,999; 88,001
3. 20,450; 20,999; 20,300

6. Real-World Application

Why is comparing numbers important?

- We use comparison every day when looking at prices, counting items, or checking statistics. For example, if one store sells a toy for $25 and another store sells it for $30, we compare these numbers to decide which store offers the better deal.

Example: You are comparing the population of two cities. One city has 89,521 people, and the other has 92,315 people. Which city has the larger population?
Answer: Compare the numbers. Since 92,315 is greater than 89,521, the second city has a larger population.

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7. Independent Practice

Compare these numbers using >, <, or =:

1. 62,412 ___ 62,501
2. 97,998 ___ 98,000
3. 43,876 ___ 43,789
4. 55,432 ___ 55,432
5. 21,309 ___ 21,310

Order the following numbers from least to greatest:

1. 67,431; 67,890; 67,123
2. 89,540; 88,999; 90,101
3. 75,203; 75,300; 74,982

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8. Review and Wrap-Up

- **Recap Key Concepts:** When comparing numbers, always start from the leftmost digit and work your way right. Use the correct symbols to show the comparison.
- **Discuss:** Ask students why it's important to compare numbers in real-life scenarios (shopping, comparing distances, etc.).
