

100 More 100 Less

Summary

Students will review the concept of place value and how it relates to number sense.

Main Core Tie

Mathematics Grade 2

[Strand: NUMBER AND OPERATIONS IN BASE TEN \(2.NBT\) Standard 2.NBT.4](#)

Additional Core Ties

Mathematics Grade 2

[Strand: OPERATIONS AND ALGEBRAIC THINKING \(2.OA\) Standard 2.OA.3](#)

Mathematics Grade 2

[Strand: NUMBER AND OPERATIONS IN BASE TEN \(2.NBT\) Standard 2.NBT.1](#)

Mathematics Grade 2

[Strand: NUMBER AND OPERATIONS IN BASE TEN \(2.NBT\) Standard 2.NBT.8](#)

Materials

- Die-cut paper digits 0-9 (several)
- Paper greater than less than signs (optional)
- Construction paper
- Base Ten Block Stamps (teacher)
- *Math Journal*

Additional Resources

Books

- *Arithme-Tickle*
, J. Patrick Lewis ISBN 0-15-216418-9
- *Mathematickles!*
, Betsy Franco ISBN 0-689-84357-7

Background for Teachers

Students will review the concept of place value and how it relates to number sense. Children with strong number sense possess place value knowledge and they can explain the value of a three when they see it in the 100's place. This concept is foundational when beginning the process of what is 100 more or 100 less. Children with good number sense can compare the relative sizes of numbers and place number in order from greatest to least or least to greatest.

Intended Learning Outcomes

1. Communicate mathematically.
2. Make mathematical connections

Instructional Procedures

Teacher prep before class

Generate sets of numbers such that the numbers have a difference of 100 and are between 1 and 1000. For example, 1 & 101, 234 & 334 & 434, 888 & 988... You will need as many numbers as there are students in your class. Print out a copy of [race number bibs](#) for each student and write one of the numbers from your list on each bib.

Invitation to Learn

Students will be given [race number bibs](#). Students will look at their bib number and then locate a student in the room that has a similar number (either 100 more or 100 less). Then have students put themselves in order of smallest number to largest number at the back or front of the class. This will help students when learning to compare numbers.

Instructional Procedures

Pass out two different digits to all the students (To start, give students the number for their birth date).

They need to make a two-digit number.

The instructor will model questions with the students (see bulleted questions below).

Students can then ask each other the questions. While the students have two digits they can make two different numbers.

What is the number?

Is it odd or even? How do you know?

What is 100 more? What is 100 less? What is 10 more? etc.

What is the value of the two?

During the partner work this is a good time to assess and learn what the children know about reading numbers.

After a few minutes of discussion, come back as a whole group and ask all the odd numbers to stand up. Give students the opportunity to hold their number up and explain why it is odd or even. Ask them some of the same questions they just answered with their partner.

After everyone has practiced with two digits. Give each student another digit.

Repeat the questions and record the numbers created in their math journal.

Activity 2: Number Books

The students will make a 100 More, 100 Less, 10 More and 10 Less book by folding at least three, 8 12 x 11 pages horizontally.

Students will write the title and author on the outside of the cover of the book.

On the inside flap of the book, paste in a three-digit number, using the digits that you've used previously in this lesson. Below the number, students need to write the following items to describe the standard numeral:

Word name (i.e. three hundred sixty eight)

Expanded notation

Representation with base 10 blocks (use the stamps)

Odd or even

Write out--368 is 100 more than...

Students will then work on the next page with a new number that is now 100 more than the number on the first page.

Repeat the above list for each new number.

For the third number students will then write about a number that is 10 less.

Fourth number will be 100 less.

Fifth number will be 10 more.

Extensions

Curriculum Extensions/Adaptations/ Integration

Give advanced learners more digits, as they may be ready for larger numbers.

Students that need more help may only be able to work on numbers with three digits.

Students can go out to the school parking lot and look at license plates and record them in their journal, then they can write what is 100 more, 100 less, 10 more and 10 less.

Arrange students in groups of three to four and give each student cards with numbers (12" x 15").

Have students make the largest number possible using all the cards in their group. Compare group numbers. Make the smallest number, the largest odd or even number, or have students make numbers with the highest tens place.

White board extension activity--have two to five students come to the front of the room and hold a small white board. Write a number on the first white board such as 73. On the next white board write a number that is 100 more, and then ask the class to complete the pattern. Use other numbers to create patterns.

- *Just Try To Top It*

-- Play this game, which is similar to the number game War. Students divide a deck of number cards. Have students create the largest number, as they each turn over the next card in the deck, creating three or four digit numbers. The child with the largest number wins, the game ends when all the cards are gone. Encourage students to say the number to their partner giving practice reading and communicating the numbers.

Family Connections

Children and parents can recreate the number book at home using their parent's favorite number, the number in their street address, or the three or four digit number in their phone number.

Send a note home encouraging parents to send their child to school wearing a number shirt for "Number Shirt Day".

Assessment Plan

Students will create a poster or a book to display the numbers they have used. The poster should show two numbers side by side ($345 > 234$) and also should be labeled with even or odd, show expanded notation for both numbers, have the word name written out, and have the ones, tens and hundreds place labeled.

Bibliography

Research Basis

Hartshorn, Robert, & Boren, Sue. (1990). Experiential learning of mathematics: using manipulatives. *ERIC Source* (ERIC ED321967). Retrieved March 12, 2004, from Ebscohost database.

This article discusses the idea of how students achieve active involvement in their learning with manipulatives. It also discusses the positive effects and the new interest that manipulatives bring to student mathematical education.

Cain-Caston, M. (1996). Manipulative queen [electronic version]. *Journal of Instructional Psychology*, 23(4), 270-274.

This study focused on students practicing with manipulatives in mathematics usually out perform those who do not. Using manipulatives increased scores on retention and problem solving tests.

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