Place Your Order!

Relevant Chapters in the *Digi-Block Comprehensive Teacher's Guides:*
   Book II: Unit 2-6: Comparing Two- and Three-Digit Numbers, pages 45-48
   Book III: Unit 1-6: Rounding and Ordering Numbers, pages 35-36

Overview

Students play a game involving comparing and ordering a set of five numbers (0 – 999) from smallest to largest. They use blocks and number lines to compare numbers and to prove the validity of their solutions.

Objectives

Thinking Skills: Students use strategic thinking to decide where to place a number on the game board. They learn to justify their solutions using the materials.

Mastery Skills: Students learn how to compare and order numbers from 0 to 999.

Materials

Each pair of students needs:
- One set of number cards: copy on tag board, if possible (Note: If necessary, adjust the numbers to differentiate for student levels.

Select, or make additional number cards with only 2-digit numbers for students who are not ready for larger numbers. Make cards with 3- or even 4-digit numbers if students need more of a challenge.)
- A game board for each student
- A score sheet for each student
- Access to blocks and number lines as needed

Class Introduction   (15 - 20 minutes)

Show the number cards with the numbers 48 and 72.
- Have two students build each number with a collection of packed blocks: 48 = 4 blocks-of-10 and 8 ones and 72 = 7 blocks-of-10 and 2 ones.
- Ask, *Which is more? Less? How do you know?*

Play skeptic, and state that 48 has larger digits: the 4 is more than 2 and the 8 is more than 7. Also, there is a total of 12 blocks in the collection representing the number 48, while there is only a total of 9 blocks in the collection representing the number 72.

Have the students explain different strategies for comparing the numbers in order to convince you that 72 is greater. Some possible strategies include:
- Counting aloud.
- Matching and comparing blocks-of-10, and then single blocks.
- Finding both numbers on the number line.
- Unpacking to the single blocks and counting by ones.

Throughout the discussion, emphasize the value of the digits. Explain that even though there is an 8 in 48, it only represents 8 ones whereas the 7 represents 7 tens.

Next, show the number 59 and ask how it compares to 28 and 72. Have students convince you that it is more than 27 but less than 72, so it belongs between them!

Show 236 and 194 and, once again, have them decide how they compare with 28, 59, and 72. Discuss the hundreds digits.

Finally, after all students agree on their order, list the five numbers in a row, from smallest to largest:

28   59   72   194   236

Explain to students that they will practice ordering numbers with a partner as they play a game, "Place Your Order." Divide the class into two parts to represent the two players as you model a round of the game.

Display the game board. Explain that the winning player will be the first to order five numbers from smallest to largest. Tell students that the number cards include numbers from 0 to 1000.
- Have a representative player from each half of the class draw a number card at the same time. The student holding the smaller number goes first for this turn, and will continue to be the first to draw throughout the round. He or she places the card in one of the 5 spaces on his or her board. Have the other team player draw a card and place it one of the 5 spaces as well.
- Each player records the number on his or her recording sheet.
- On the second draw, the students must compare the new number to the one already placed on the board and put it in the space to the left (to show it is smaller) or the right (to show it is greater) of the first number. Players also have the option of NOT using the card at all, and placing it in a discard pile.
- If a player draws the * card, they may create their own number and record it appropriately in their sequence of numbers.
- With each newly placed card, players must convince one another that their placement is correct. Have blocks and number lines available to do so.
- Continue taking turns picking cards and placing them in remaining spaces and recording the numbers on their recording sheets. If a card cannot be placed, the player skips a turn.
- The first player to have 5 numbers in a row wins the round.

<u>Student Pair Activity</u>   (20 - 30 minutes)

Distribute a card set, game boards, and recording sheets to student pairs.
- Have students play 3 rounds of "Place Your Order."

- The student who wins more rounds is the game winner.

As students are playing, be sure to question their order and have them explain how they know their numbers are in order. Ask questions, such as:
- **How do you know this number goes here?**
- **What is a possible number that could go here (point to an empty space) or here (a different space)? How do you know?**
- **Are you sure your partner's numbers are in order? Has he or she proved that they are?**
- **Can you use materials to prove your numbers are in order? Show me!**

Closure   (8 – 10 minutes)

After students have played one game or more of "Place Your Order," have them think about the strategies they used to play the game. Ask:
- **How did you decide where to place the first card that you drew?**
- **What was challenging/easy for you?**
- **Were there times when you decided to leave a space blank until you had another turn? What made you do so?**

Assessment

As students are playing "Place Your Order," observe and note:
Do they -
- Place cards strategically on the game board?
- Use the materials to compare two numbers? If so, how do they use the materials? Do they count all single blocks? Do they line up two numbers side by side? Do they compare tens and then ones only when necessary?
- Justify their solutions using the materials and sufficiently explaining to their partners?

Extension

❑ Play the same game, except add the "switch rule" which gives a player the option of switching two cards instead of drawing a new card from the

deck. This helps a player adjust his/her board to allow for more possible numbers to be put in empty spaces.

❑ Do the "Digit Shuffle!" Make digit cards with the numbers 0 to 9. Place them face down between two students. Have each student draw three cards and make all six possible numbers with them. Record the numbers, then put them in order from smallest to largest.