

PLACE VALUE AND ORDERING NUMBERS

MINI-LESSON

For the Place Value and Ordering Numbers key concept



Summary

Students will use base-ten blocks as a way of visually understanding place value, and to compare two numbers.



Suitable for 2-6 students



Length 30 min (approximately)



Lesson Preparation

- **Base-ten blocks** – approximately 10 of each type (ones, tens, hundreds) per student
- **Ten-sided dice (with faces labelled 0 to 9)** – one per pair of students
[Note: Playing cards can be used instead: Use one suit of Ace to 9 and a King, where King refers to zero.]
- **Largest Number Game sheets** ([download](#)) – one per pair of students and one teacher copy.

LEARNING INTENTIONS

This activity helps students to:

- Use blocks to visualise a number as made up of its place value parts (e.g. tens and ones)
- Learn to use place value to compare the sizes of two-digit and three-digit numbers.

CURRICULUM LINKS

- Ordering numbers up to 100 (ACMNA013)
- Grouping numbers by tens and ones (ACMNA014)
- Ordering numbers up to 1000 (ACMNA027)
- Grouping numbers by hundreds, tens, and ones (ACMNA028)

AFTER THE LESSON

In later lessons, students can compare numbers using other representations, such as number lines.

INTRODUCTION

1 MINUTE

This activity helps students to develop their understanding of whole number place value:

Ask students: 'Which number is larger: 62 or 48? How do we know?' They will likely know 62 is larger; tell them this lesson will help them see why.

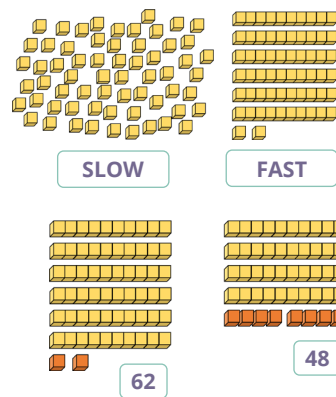
Whole group:
Sharing ideas with the group.

DEMONSTRATION

5 MINUTES

Show students how to make the numbers 62 and 48 using base-ten blocks. Describe what you are doing as you do it:

- We can start counting out 62 using only ones. **This is very slow.**
- To count out 62 faster, we can use longs. Ask how many of the ones make up 1 long. We can call each long a "ten". Now count out 62 using tens and ones. **Using tens makes it easier to see how big the number is.**
- We can also count out 48 using tens and ones.



Whole group:
Sharing ideas with the group.

Return to the earlier question and ask students: 'How can the blocks help us know that 62 is larger?'

[An answer might be: Starting with the largest blocks, we match up the tens of each pile; 4 tens match up. There are 2 tens and 2 ones left over in 62. That's more than the 8 ones left over in 48. So 62 is larger.]

Whole group:
Sharing ideas with the group

DIRECT STUDENTS

10 MINUTES

Repeat the previous activity, but form a pair of three-digit numbers, using a die to select digits. For each number, choose a student to show the group how to make the number out of blocks. As a group, compare the two numbers, and discuss which digit matters most.

[The hundreds are biggest, so the hundreds digit matters most.]

Whole group:
Showing how to make numbers out of blocks. Sharing ideas.

DIRECT PAIRS OF STUDENTS

15 MINUTES

After learning the game, students play it in pairs. The rules of the game are:

- Player 1 rolls the die, and chooses to record the digit in either the tens column or the ones column of a *Largest Number Game sheet*. Player 1 rolls the die again to fill in the other column, forming a two-digit number.
- Player 2 also rolls the die twice to create their own two-digit number.
- The larger number wins a point. Players continue to take turns to create numbers until game boards are full. Player with most points wins game.

Prompt student thinking: As students play the game, support and extend them as appropriate:

- Students can use the blocks to help compare numbers.
- Ask: **'What is the best strategy to use to help win the game?'** *[Answer: Put small numbers in the ones place, and large numbers in the tens place.]*
- Students can continue to the three/four/seven-digit versions of the game.

In pairs:
Learning the Largest Number Game then playing it in pairs, using the Largest Number Game sheet and a die.

DISCUSSION

2 MINUTES

Ask students questions about what they have learned, such as:

- How do the blocks help you to compare numbers?
- How would you explain to another student how to compare a pair of two/three/four-digit numbers?

Whole group:
Sharing ideas with the group