

# LESSON 4

## Objective

Write numbers in different forms.

## Common Core State Standards

- **2.NBT.3** Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

## Number and Operations in Base Ten

# Numbers in Different Forms

For children to have confidence about numbers and their meanings, it is important that they understand different representations of numbers, including base ten numerals, number names, and expanded forms. The ability to represent and recognize numbers in different forms enables children to exercise a deeper understanding of number, and this serves as a strong foundation for children when they add and subtract two- and three-digit numbers.

**Try It!** Perform the Try It! activity on the next page.

## Talk About It

Discuss the Try It! activity.

- **Ask:** How does understanding place value help you show numbers in different ways? Discuss how knowing place value makes building numbers with Base Ten Blocks easier, how it makes breaking numbers apart for expanded form easier, and how it makes writing numbers in word form easier.
- **Ask:** How did you write 642 in expanded form? How did you know how to separate the different parts of 642 when you wrote it in expanded form and in word form?
- **Say:** There are many ways to represent numbers. Each way is useful in certain situations.

## Solve It

With children, reread the problem. Have children review their recording sheet for 642. **Say:** Let's say Amy's brother wanted to show the number 769 in four ways. Have children complete a new copy of the Number Forms Recording Sheet (BLM 7) for 769.

## More Ideas

For other ways to teach writing numbers in different forms—

- Have pairs of children play a number game. One child says a number and the other child shows that number using Base Ten Blocks, expanded form, or word form. Have children check each other's work, and then switch roles.
- Have children spin a 0–9 spinner three times and write the digits on their paper in any order. Have them write the expanded form and word form of the number.

## Formative Assessment

Have children try the following problem.

Which shows the expanded form of 769?

- A.  $70 + 60 + 9$     B.  $700 + 60 + 90$     C.  $700 + 60 + 9$

## Try It! 30 minutes | Groups of 4

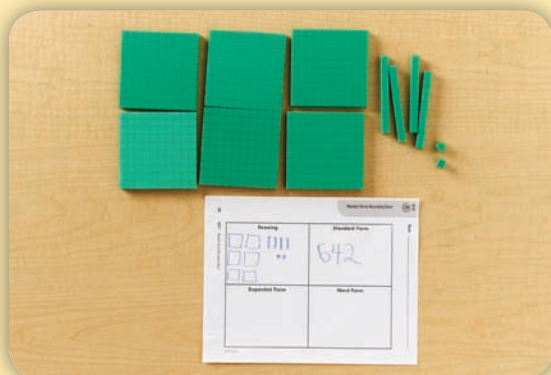
Here is a problem about writing numbers in different forms.

*Amy and her younger brother were talking about numbers. Her brother thought the only way to show 642 was to write it as a numeral. Amy told her brother there are other ways to show the number. What are 3 other ways to show 642?*

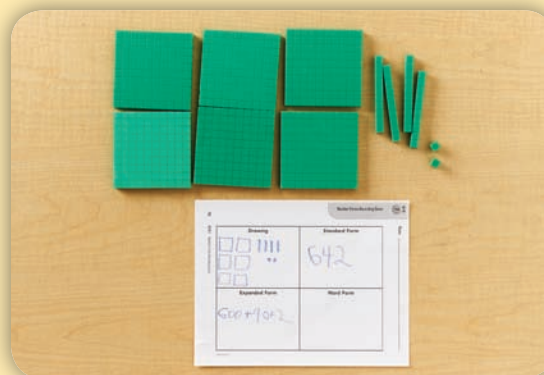
Introduce the problem. Then have children do the activity to solve the problem. Distribute Base Ten Blocks, recording sheets, and pencils to children.

### Materials

- Base Ten Blocks (10 flats, 10 rods, and 10 units per group)
- Number Forms Recording Sheet (BLM 7; 1 per child)
- pencils (1 per child)



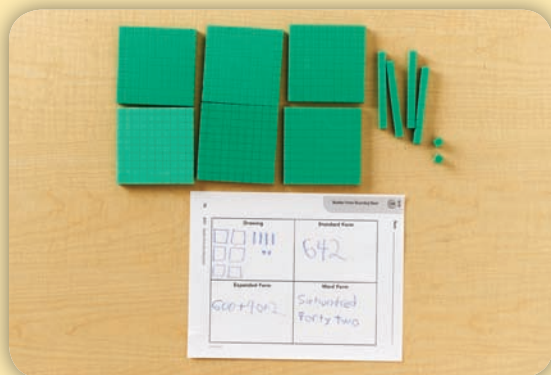
**1. Say:** You can use the blocks to build a model of the number. **Ask:** Which blocks would you use? Discuss how to show the number using Base Ten Blocks. Have children draw the blocks they used to model the number and write the number in standard form on their recording sheets.



**2. Say:** The blocks help us show 642 another way. Think about what each digit means. Elicit that the 6 flats represent 600, the 4 rods represent 40, and the 2 units represent 2. Write  $600 + 40 + 2$  on the board, have children write it on their recording sheets, and tell children that it is the expanded form of 642.

### Look Out!

Watch for children who aren't going from blocks to expanded form easily. Have them look at each type of block separately and write what those blocks total. Remind them to use plus signs between the numbers to indicate that the parts are put together.

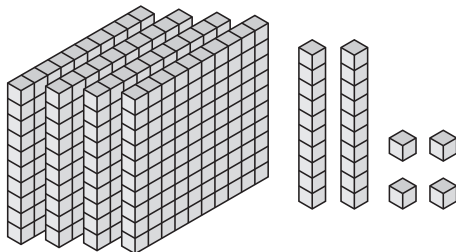


**3. Ask:** How would we write 642 using words? Discuss the place values of the digits and write *six hundred forty-two* on the board. **Say:** This is the word form of the number. Write it on your sheet.

**Use Base Ten Blocks. Build each number. Write the number in expanded form and standard form.**

(Check students' work.)

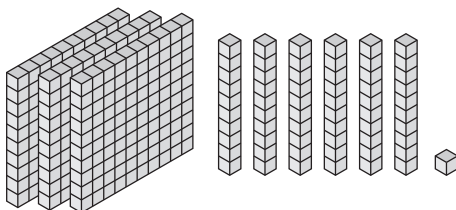
1.



$$\underline{400} + \underline{20} + \underline{4}$$

$$\underline{424}$$

2.



$$\underline{300} + \underline{60} + \underline{1}$$

$$\underline{361}$$

**Use Base Ten Blocks. Build the number. Draw the model. Write the number in standard form.**

3. two hundred fifty-seven

2 flats, 5 rods, 7 units; 257

**Write each number.**

4. 778 in expanded form  $\underline{700} + \underline{70} + \underline{8}$

5. 581 in word form  $\underline{\text{five hundred eighty-one}}$



## Answer Key

**Challenge!** Sarah saw *three hundred five* written on a paper. She wrote the number as 305. Her brother George said that since there is no zero in the number name, there should not be one in the number. Who is right, Sarah or George? Use words and drawings to explain.

Challenge: (Sample) Sarah is correct because the zero is needed to hold the tens place, even though there are no tens.

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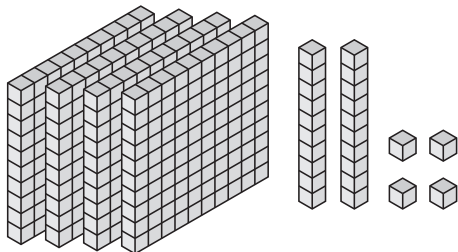
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**Use Base Ten Blocks. Build each number. Write the number in expanded form and standard form.**

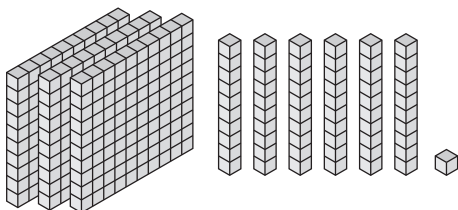
1.



\_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

\_\_\_\_\_

2.



\_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

\_\_\_\_\_

**Use Base Ten Blocks. Build the number. Draw the model. Write the number in standard form.**

3. two hundred fifty-seven

\_\_\_\_\_

**Write each number.**

4. 778 in expanded form \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

5. 581 in word form \_\_\_\_\_

Name \_\_\_\_\_

**Challenge!** Sarah saw *three hundred five* written on a paper. She wrote the number as 305. Her brother George said that since there is no zero in the number name, there should not be one in the number. Who is right, Sarah or George? Use words and drawings to explain.

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Name \_\_\_\_\_

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|----------------------|----------------------|
| <b>Standard Form</b> | <b>Word Form</b>     |
| <b>Drawing</b>       | <b>Expanded Form</b> |