

Lesson 3: The Thousands Places (2 Days)

Getting Started

✿ Questions to Explore

- How does place value work?
- How can we use place value to name, create, and compare numbers to a million?
- How do we write and speak in mathematical language?



Facts and Definitions

- **Base-10 number system:** a commonly used number system that is based on 10 digits (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) and the number 10
- **Ten thousands place:** position to the left of the thousands place
- **Hundred thousands place:** position to the left of the ten thousands place
- Numbers of four digits or more require commas. To place commas, start to the right of the ones place and count three places to the left. Repeat as needed starting at the comma and counting three more places to the left.

⦿ Skills

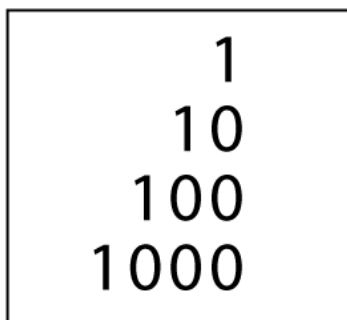
- Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form
- Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right

✂ Materials

- calculator
- fine point dry-erase markers (kit)
- Interactive Notebook
- laminated place value chart (kit)
- number cards (kit)
- whiteboard (kit)

Introduction

Write 1, 10, 100, and 1,000 in a column on the whiteboard as shown. Leave space below 1,000 to add additional numbers. (If your child already knows where to insert commas in numbers, include the commas; otherwise, leave them out.)



Tell your child to say the numbers aloud as he points to them, and ask, "What do you see happening to these numbers?" He may note that they're getting bigger and that a zero is being added to each number to create the next one. Ask, "What do you think the next number is?" (10,000) Tell him to write the next two

numbers on the whiteboard. He should write 10,000 and 100,000. Don't worry about the commas that belong in the numbers at this point if your child doesn't yet know where to add them.

Now, ask, "What number is each of the numbers being multiplied by to get to the next one? For example, what do we multiply by 1 to get to 10?" Help your child see that starting at 1, each number is being multiplied by 10 to get to the next number. Ask, "What happens when you multiply any number by 10?" Your child should note that you add a zero to the end of the number. To review this, write 5×10 and 10×9 on the whiteboard, and tell your child to find the products (50 and 90). Ask him to prove that this is true by entering a one-digit number on a calculator and then multiplying by 10 several times so that he can see the number growing with additional zeros.

Explain that our number system is based on the number 10 and that understanding this system makes working with big numbers much easier.

Next, provide time for your child to watch the video at the following web link. This video discusses the base-10 number system and rules and patterns in place value. It also introduces numbers beyond one million and reviews expanded form. Much of this video should be review for your child, but it will give him a solid foundation for working with large numbers.



Place Value

www.beyondthepage.com/link/8196/

Say, "This video talked about some really big numbers going all the way up to one billion. Before you can work with those kinds of numbers, it's important that you understand patterns in our number system. You've already talked about how we can multiply by 10 to make numbers greater, but now you're going to look at our number system in a slightly different way."

Activities

Activity 1: Working With Our Base-10 System

Show your child the interactive base-10 blocks at the following web link, and give him a chance to practice moving them on the screen. Ask him to use 10 ones to make 10 and 10 tens to make 100. He has used base-10 blocks before to show multi-digit numbers, so this should be a quick review for him.



Base Ten Blocks

www.beyondthepage.com/link/7457/

Give your child the "Thousands, Hundreds, Tens, Ones" sheet and look at the examples provided at the top together. Say, "You know that 10 ones make 1 ten and that 10 tens make 1 hundred. Can you use the interactive blocks to show that 10 hundreds make 1 thousand?" Provide time for your child to do this using the blocks at the web site.

Next, say, "I wonder how many tens are in 2 hundreds?" Allow your child to use the interactive blocks as needed to figure this out. He should find that 20 tens equal 2 hundreds. As needed, say, "If it takes 10 tens

to make 1 hundred, how many tens will it take to make 2 hundreds?" and "Remember that tens are much smaller than hundreds so it will take more of them to make the same amount of hundreds. Picture the base-10 blocks as you think about this." Your child should write "20" in the correct blank provided on the sheet. Now, provide time for him to fill in the rest of the blanks, and allow him to use the interactive blocks as he works. He can store this sheet in his Interactive Notebook for future reference as needed.

Answer Key:

- 2 hundreds = 20 tens
- 3 hundreds = 30 tens
- 4 hundreds = 40 tens
- 8 hundreds = 80 tens
- 2 thousands = 20 hundreds
- 4 thousands = 40 hundreds
- 5 thousands = 50 hundreds
- 1 thousand = 100 tens
- 3 thousand = 300 tens
- 7 thousand = 700 tens

Activity 2: Ten Thousands

Once again, write 1, 10, 100, and 1,000 in a column on the whiteboard. Ask your child to write the number that comes next in the pattern. He should write 10,000. If he does not include the comma, say, "Remember that in the video you watched about place value you learned that we use commas to divide groups of digits in big numbers." Provide time for your child to watch the music video at the following link to review where commas belong in numbers.



Place Value Song

www.beyondthepage.com/link/7458/

While your child watches the video, write the following numbers on the whiteboard. When the video is finished, tell your child to draw commas where they belong and then read the numbers aloud. Make sure that he understands that he should start to the right of the ones place and count three places to the left to determine where to put the commas in these numbers.

- 5690 (5,690 — five thousand six hundred ninety)
- 2764 (2,764 — two thousand seven hundred sixty-four)
- 12873 (12,873 — twelve thousand eight hundred seventy-three)
- 80551 (80,551 — eighty thousand five hundred fifty-one)

If needed, explain to your child that we say the digits in the thousands as a group rather than naming each place when we say a number. For example, for 12,873, we say "twelve thousand" rather than "one ten thousand two thousands." Point out that the commas help us know which digits to group together to name large numbers.

Now, your child will complete the "Ten Thousands" sheet by following the instructions provided on it.

"Ten Thousands" Answer Key

5,627 12,345 86,351 66,923

$40,000 + 3,000 + 600 + 10 + 9$ Seventy-eight thousand eight hundred
 78,800 4,833
 Four thousand eight hundred thirty-three 43,617
 17,507 $(1 \times 10,000) + (7 \times 1,000) + (5 \times 100) + (0 \times 10) + (7 \times 1)$

18,764 $10,000 + 8,000 + 700 + 60 + 4$
 50,743 $(5 \times 10,000) + (0 \times 1,000) + (7 \times 100) + (4 \times 10) + (3 \times 1)$

Day 2**Activity 3: Hundred Thousands**

Give your child the whiteboard and dry-erase markers, and tell him to write the following numbers as you dictate them. Remind him to draw the commas where they belong.

- twenty-four thousand six hundred eighty-three (24,683)
- sixty-two thousand three hundred four (62,304)
- fifty-five thousand four hundred twenty-seven (55,427)

Next, show your child the laminated place value mat. As you say each place (ones, tens, hundreds, thousands, ten thousands, hundred thousands), ask your child to point to it on the mat. Repeat this process, saying the places out of order.

Now, write 453,628 in the spaces on the laminated place value mat, and read it aloud for your child as you point to the digits: "four hundred fifty-three thousand six hundred twenty-eight." Repeat with 267,890, and ask your child to read the number aloud. (two hundred sixty-seven thousand eight hundred ninety) Erase the mat.

If your child would benefit from more practice with how to write (and say) five- and six-digit numbers in word form, provide time for him to work with the tool at the following web link.



Really Big Numbers

www.beyondthepage.com/link/7459/

Enter numbers that have five or six digits, such as 45,932 or 999,999, in the box provided. Click on "click here," and read aloud the word forms of each number. For fun, allow your child to enter numbers with more than six digits to see higher number naming words.

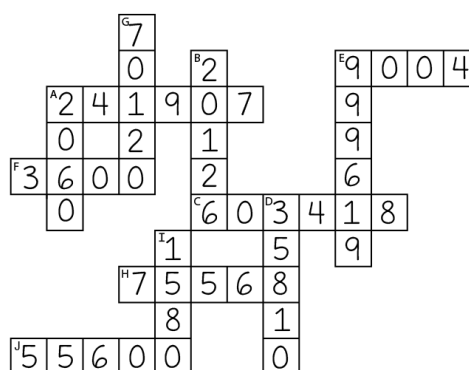
Now, give your child the laminated place value mat, dry-erase markers, number cards 1-9, and the "Hundred Thousands" sheet. Tell him to follow the instructions on the sheet.

As your child works on the final two questions, if needed, remind him that our number system is based on the number 10 and that each place is ten times bigger than the place to the right of it (for example, the tens place is 10 times bigger than the ones place and the hundreds place is 10 times bigger than the tens place).

Activity 4: Thousands Cross Number

Your child will complete the "Thousands Cross Number" sheet by using the clues to write the numbers in standard number form where they belong in the puzzle. When he finishes this sheet, he should store it in his Interactive Notebook for use later during this unit.

"Thousands Cross Number" Answer Key



Wrapping Up

Your child will play the game at the following web link for a few minutes. While your child plays the game, check his work for this lesson. Look for patterns in items that he missed, and go over them with him, providing time for him to correct his mistakes.



Place Value

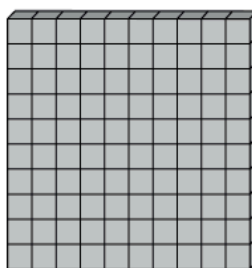
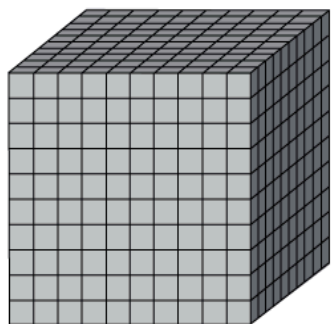
www.beyondthepage.com/link/8297/

Under "Choose Place Value," your child should choose the Easy level. After completion of the puzzle, he can choose to play the same level or select "Play a harder level of the game." Please note that the higher level provides numbers to 1 million, so you may want to show him where that place value is before he starts.

Learning Gates

Have your child take the [Learning Gates quiz](#) for this lesson.

Thousands, Hundreds, Tens, Ones



1 ten = 10 ones

1 hundred = 10 tens = 100 ones

1 thousand = 10 hundreds = 100 tens = 1,000 ones

2 hundreds = _____ tens

3 hundreds = _____ tens

4 hundreds = _____ tens

8 hundreds = _____ tens

2 thousands = _____ hundreds

4 thousands = _____ hundreds

5 thousands = _____ hundreds

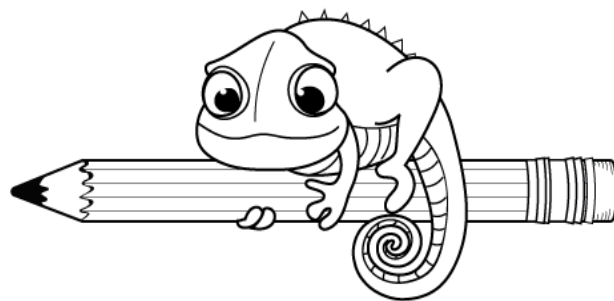
Think About It!

1 thousand = _____ tens

3 thousand = _____ tens

7 thousand = _____ tens

Ten Thousands



Instructions: Draw the commas where they belong.

5627

86351

12345

66923

Instructions: Draw lines to match the numbers written in different forms.

$40,000 + 3,000 + 600 + 10 + 9$

Seventy-eight thousand eight hundred

78,800

4,833

Four thousand eight hundred thirty-three

43,619

17,507

$(1 \times 10,000) + (7 \times 1,000) + (5 \times 100) + (0 \times 10) + (7 \times 1)$

Instructions: Write the first number in expanded form and the second in expanded notation (super expanded form)

18,764 _____

50,743 _____

Hundred Thousands

Instructions

1. Shuffle the number cards and place them face down in a stack.
2. Draw one card, and write the digit showing in the ones place on the laminated place value mat.
3. Draw another card, and write the digit in the tens place.
4. Continue drawing cards and writing digits until you've created a six-digit number. Write your number here: _____
5. Say this number aloud.
6. Answer the questions below:

What is the value of the digit in the hundreds place? _____

What is the value of the digit in the ten thousands place? _____

Write this number in expanded form. _____

Now, repeat the process above to make a new number, and answer the questions below. Start by shuffling all of the number cards before you begin drawing them.

My number is _____

What is the value of the digit in the hundred thousands place? _____

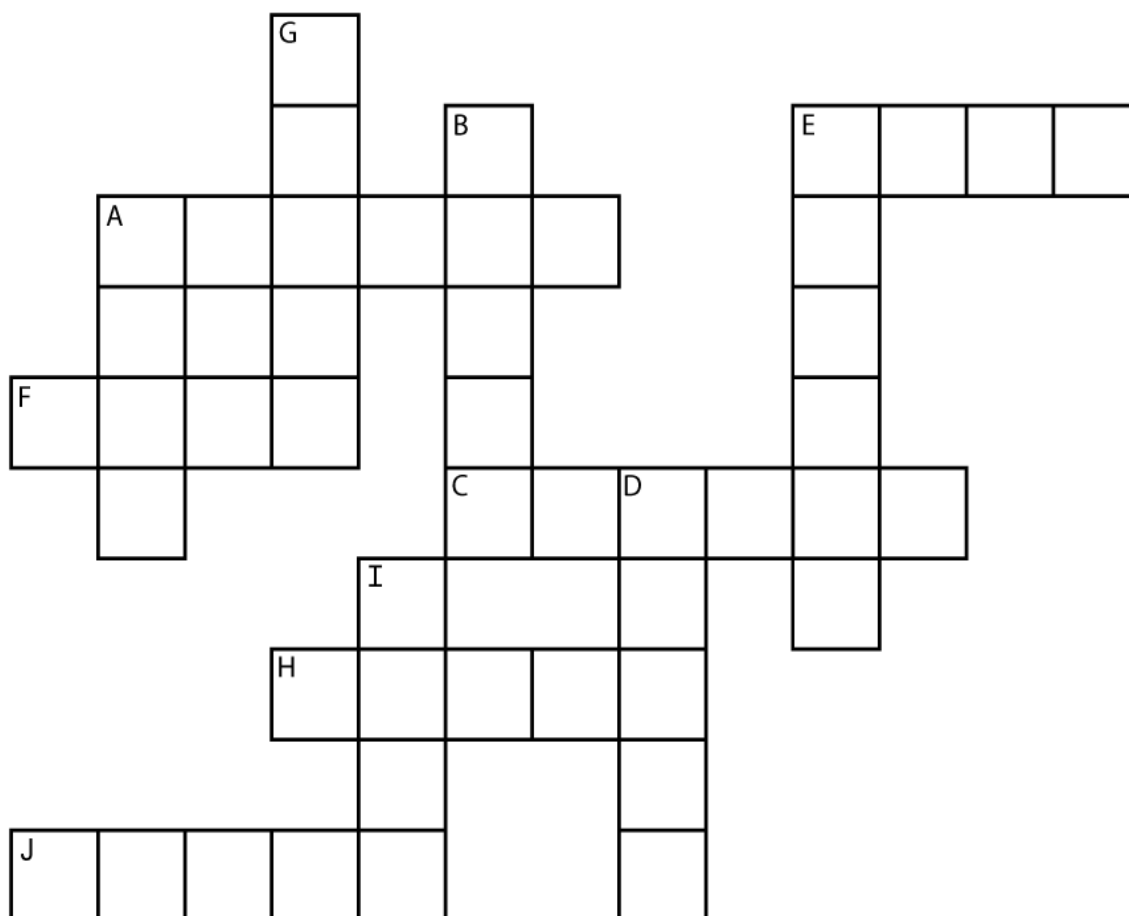
What is the value of the digit in the thousands place? _____

How many tens equal the number of hundreds in this number? _____

How many thousands equal the number of ten thousands in this number?

Thousands Cross Number

Instructions: Use the clues at the bottom of the sheet to complete the puzzle. Be sure to write the numbers in the correct places!



Across

- A. $200,000 + 40,000 + 1,000 + 900 + 7$
- C. six hundred three thousand four hundred eighteen
- E. $9,000 + 4$
- F. three thousand six hundred
- H. $70,000 + 5,000 + 500 + 60 + 8$
- J. $50,000 + 5,000 + 600$

Down

- A. two thousand sixty
- B. twenty thousand one hundred twenty-six
- D. $30,000 + 5,000 + 800 + 10$
- E. $900,000 + 90,000 + 9,000 + 600 + 10 + 9$
- G. seventy thousand one hundred twenty
- I. one thousand five hundred eighty