

Lesson 1: Numbers to 10,000 Review (3 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

- **Ones place:** position on the right in a number
- **Tens place:** position to the left of the ones place
- **Hundreds place:** position to the left of the tens place
- **Thousands place:** position to the left of the hundreds place
- **Expanded form:** a way to write a number that shows the value of each digit (for example, $4,529=4000+500+20+9$)
- **Expanded notation:** also called super expanded form, expresses a number by showing each digit multiplied by its place value. For example, 4,532 in expanded notation is $(4\times1,000)+(5\times100)+(3\times10)+(2\times1)$

⦿ Skills

- Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form
- Order and compare multi-digit numbers

✂ Materials

- deck of playing cards (kit)
- fine point dry-erase markers (kit)
- index cards (kit)
- Interactive Notebook
- whiteboard (kit)

Introduction

Write 6,482 on the whiteboard, and pose the following questions:

- How many digits does this number have? (4)
- How do we say this number? (six thousand four hundred eighty-two — remind your child as needed that we don't say "and" in between the numbers)
- What digit is in the ones place? (2)
- What digit is in the tens place? (8)
- What digit is in the hundreds place? (4)
- What digit is in the thousands place? (6)
- What is the value of 6 in this number? (6,000 — repeat for each digit)
- What number is 10 more than this number? (6,492)
- What number is 10 less than this number? (6,472)
- What number is 100 more than this number? (6,582)

- What number is 100 less than this number? (6,382)

Now, write 3,871 on the whiteboard, and ask your child to say the number aloud. He should say, "Three thousand eight hundred seventy-one." Ask, "Can you recall another way we can show large numbers?" As needed, remind your child that we also use expanded form to show numbers. Tell him to write 3,871 in expanded form on the whiteboard ($3,000+800+70+1$). Help him as needed by asking him the value of each digit in the number, such as, "What is the value of the 3 in the thousands place?" (3,000) Repeat this process for the numbers 8,902 ($8,000+900+2$) and 1,996 ($1,000+900+90+6$).

Tell your child that expanded notation (sometimes called super expanded form) is another way to represent a number. Tell him that it is similar to expanded form but goes one step further to show each digit multiplied by its place value. Show 3,871 in expanded form again on the whiteboard ($3,000+800+70+1$), and then show him the expanded notation underneath:

$$(3 \times 1,000) + (8 \times 100) + (7 \times 10) + (1 \times 1)$$

Tell your child that this method provides a clear way of showing the value of each place in the number. Explain that the parentheses help the numbers stay organized. Ask him to try this new form with 1,996; write out the expanded form as needed ($1,000+900+90+6$). His answer should be as follows:

$$(1 \times 1,000) + (9 \times 100) + (9 \times 10) + (6 \times 1)$$

Without erasing the previous example, show the expanded form for 8,902 ($8,000+900+2$). Tell your child that in expanded form, the zero isn't included but that it is in expanded notation since expanded notation shows the value of each place. Ask your child to try to write the expanded notation of 8,902. Remind him that he should take each digit and multiply it by its place value. If he gets stuck when he gets to the 0, ask him what place the digit is in (tens place), so he should multiply the digit (0) by 10. The answer is $(8 \times 1,000) + (9 \times 100) + (0 \times 10) + (2 \times 1)$.

NOTE: In Lesson 3, your child will learn about placing commas in numbers. If he already knows how to put commas in 4-digit numbers, he is free to do so in this lesson.

Activities

Activity 1: Practicing Place Value and Numbers in Different Forms

Your child will now use a random number generator to complete the "Working With Random Numbers" sheet. He should enter 5,000 as the lower limit and 9,999 as the upper limit and then click "enter" to generate a number. He can click "enter" again to generate a new number as he works. He will answer the questions provided using the generated numbers. Tell him to read each question carefully as there are different questions for each number. His answers will vary depending on the numbers generated by the random number generator.



Random Number Generator

www.beyondthepage.com/link/8296/

Here is a sample number; your child's answers will vary.

Number :	8,950
What digit is in the ones place?	0
What digit is in the thousands place?	8
What is the value of the digit in the hundreds place?	900
What number is 10 more than this number?	8,960
What number is 100 less than this number?	8,850
Write the number in expanded form.	
8,000+900+50	
Write the number in expanded notation (super expanded form):	
(8×1,000)+(9×100)+(5×10)+(0×1)	

Now, provide time for your child to play the game at the following web link.



Place Value Charts

www.beyondthepage.com/link/7449/

On the opening screen, have your child select "Practise" and "Th H T O" under "Numbers." After he has played that round, he will select "Th H T O" under "Words" to practice the skill in a different way.

Activity 2: Building Numbers to 10,000

Give your child a deck of playing cards and the "Building Numbers to 10,000" sheet, and tell him to read and follow the instructions provided on the sheet.

As he works with the first four digits, if your child begins to make a four-digit number with a zero (jack) in the thousands place, ask, "How many thousands are in this number?" (0) Explain that while a zero is an important "place holder" in between number places (for example, in the number 5,209), we don't place a zero in the place on the far left (the largest place) if there's not another digit in a larger number place to the left. If needed, write 046 on the whiteboard, and say, "We don't write 46 with a zero in the hundreds place because there are no hundreds in 46." Also, write 5,209 on the whiteboard, and say, "Without the zero holding the tens place, we would think this number is five hundred twenty-nine rather than five thousand two hundred nine."

Using the 2, 5, 9, and jack cards, your child should be able to make the following four-digit numbers:

- 9,520, 9,502, 9,250, 9,205, 9,052, 9,025
- 5,920, 5,902, 5,290, 5,209, 5,092, 5,029
- 2,950, 2,905, 2,590, 2,509, 2,095, 2,059

The numbers your child writes on the back of the sheet will depend on the digits he draws from the deck of cards. If he does not draw a jack (0), he should be able to create 24 different numbers. If he does draw a jack (0), he should make only 18 numbers.

Day 2

Activity 3: The Greatest and the Least

Using the same deck of cards that he used during the previous activity (with the queens and kings removed), tell your child to draw four cards from the deck. Remind him that aces represent ones and jacks represent zeros. For this activity, it's fine if he draws zeros (jacks) and more than one of the same number. Once he has four cards, tell him to use the digits on them to make the greatest and the smallest four-digit numbers that he can. For example, if he draws 5, 3, 0 (jack), and 1, the greatest number he can make is 5,310, and the smallest number he can make is 1,035. If needed, ask, "Why can't you use a zero in the thousands place?" He should note that we don't use zeros in the largest place in a number. You can explain, "Place values go on forever, so if we put zeros in all place values, we'd be writing zeros forever! For an activity like this, we want each card to hold a place value, so we won't use zeros when they're not needed."

Your child will complete the "Greatest and Least Four-Digit Numbers" sheet.

While your child works, write the following numbers on separate index cards: 3,456, 3,564, 3,674, 3,476, 3,574.

Activity 4: Ordering Four-Digit Numbers

Give your child the index cards you prepared during the previous activity. Ask, "What do these numbers have in common?" Your child should note that they all have four digits and all have 3 in the thousands place. Ask, "In each number, what does the digit in the thousands place represent?" (3,000) Now, ask, "If you need to put these numbers in order from least to greatest, what number place should you begin by looking at and why?" (the hundreds place because the numbers have the same thousands) and "What would be the next step?" (looking at the tens place and then the ones place)

Provide time for your child to put the numbers in the correct order: 3,456, 3,476, 3,564, 3,574, 3,674. As he works, make sure that he understands that he should look at the thousands place first, then the hundreds place, then the tens place, and then the ones place, selecting the number that has the larger digit in each place as he goes.

Once he has the numbers in the correct order from least to greatest, point to a pair of numbers that are next to each other (for example, 3,456 and 3,476), and ask, "What is a number that falls between these two numbers?" (answers will vary) Repeat this process with other pairs of the numbers.

Now, provide time for your child to play the game at the following web link.



Ordering Numbers — Online Game

www.beyondthepage.com/link/13454/

Day 3

Activity 5: Playing With Big Numbers

Your child will complete the "Playing With Big Numbers" sheets.

Answer Key:

- Draw 1: Who won? Jack; What winning number did this player make? 9,943
- Draw 2: Who won? Jack; What winning number did this player make? 1,239
(Your child may interpret that the players could use the strategy of putting 0 in the thousands place, in which case the winner would be Jill with the winning number of 238.)
- Draw 3: Who won? Jill
What winning number did this player make? 9,907
- Draw 4: Who won? Jack; What winning number did this player make? 1,776
(Your child may interpret that the players could use the strategy of putting 0 in the thousands place, in which case the winner would be Samantha with the winning number of 258.)
- Think About It! In the last game, which player made the number closest to 5,000? Paul

Activity 6: Basic Skills Review

Over the course of this year's units, your child will complete several "Basic Skills Reviews" sheets. The number of these reviews will vary per unit based on the length of each unit. The purpose of these reviews is to keep fundamental math skills that your child should have already mastered — such as basic computation, telling time, and counting money — fresh in his mind so that he doesn't lose them over time. As your child learns new skills this year, these skills will also be incorporated into the reviews. If needed, allow him to use manipulatives, but encourage him to try to find the answers without them first. If your child struggles with specific items on the reviews, you may want to look back to previous units and lessons and provide time for him to revisit activities or replay games. He can also refer to his Interactive Notebook for review of previous material, but encourage him to complete the reviews sheets from memory and by using what he knows as he's able.

Your child will complete the "Basic Skills Review #1" sheet. Give him scratch paper to use as needed. If your child would benefit from a review of fractions, time, perimeter, and area, he can refer to the "Fraction Review," "Time Review" and "Perimeter and Area Review" sheets. These sheets can be stored in his Interactive Notebook for future reference as needed.

Answer Key:

1. Circle the multiples of 3: 6, 8, 11, 15, 20, 24, 28
2. Fill in the blanks: 150, 250, 350, 450, 550, 650
3. Write the fraction that is shaded (5/8)
4. Shade 2/6 (your child should shade 2 parts)
5. What time will it be in an hour? (3:45)
6. Circle the perimeter: 8 in. or 12 in.
7. $7 \times 10 = \underline{70}$
8. $5 \times 9 = \underline{45}$

Wrapping Up

Your child will play the game at the following web link. Tell him to set the lowest possible number to 0 and the highest possible number to 10,000, and as needed, allow him to keep track of his guesses on the whiteboard. 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.



Guess My Number

www.beyondthepage.com/link/7452/

Learning Gates

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

Working With Random Numbers

Instructions: Use the random number generator that you've already worked with to create numbers between 5,000 and 9,999. Once you have a number, write the number in the blank provided, and then answer the questions about it. Work with three different numbers to complete the boxes below.

Number : _____
What digit is in the ones place? _____
What digit is in the thousands place? _____
What is the value of the digit in the hundreds place? _____
What number is 10 more than this number? _____
What number is 100 less than this number? _____
Write the number in expanded form. _____
Write the number in expanded notation (super expanded form): _____

Number : _____
What digit is in the tens place? _____
What digit is in the hundreds place? _____
What is the value of the digit in the tens place? _____
What number is 10 less than this number? _____
What number is 100 more than this number? _____
Write the number in expanded form. _____
Write the number in expanded notation (super expanded form): _____

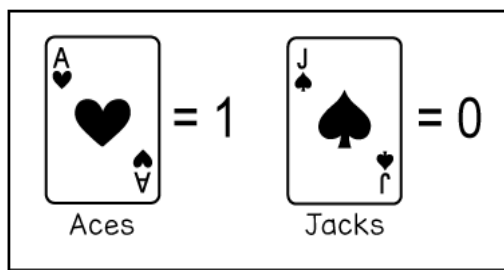
Number : _____
What digit is in the tens place? _____
What digit is in the hundreds place? _____
What is the value of the digit in the thousands place? _____
What number is 100 more than this number? _____
What number is 1,000 less than this number? _____
Write the number in expanded form. _____
Write the number in expanded notation (super expanded form): _____



Building Numbers to 10,000

Instructions:

1. Remove all of the queens and kings from a regular deck of cards.
2. For the remaining cards, the number cards represent the numbers shown on them, aces represent ones, and jacks represent zeros.
3. Remove one of each of the following cards from the deck: 2, 5, 9, jack.



How many different four-digit numbers can you create with the digits on these cards? Move the cards around to make different numbers, and use the space below to write the numbers as you make them. Make sure that you're making different four-digit numbers!

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Now, shuffle the deck of cards, and draw four new cards. Each of the cards must represent a different digit. If you draw two of the same digit, replace one of the cards, and draw again until you have four different digits. Use the back of this sheet to make all of the four-digit numbers that you can using your new digits.

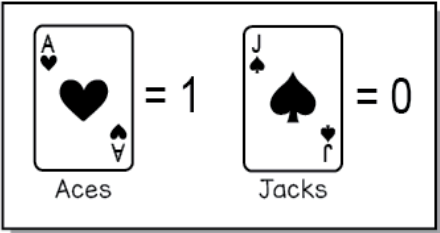




Greatest and Least Four Digit-Numbers



- Instructions:
- 1) Remove all of the queens and kings from a regular deck of cards.
 - 2) For the remaining cards, the number cards represent the numbers shown on them, aces represent ones, and jacks represent zeros.
 - 3) Draw four cards at a time. These cards will represent the digits you're working with.
 - 4) Use the digits to create the greatest and the smallest four-digit numbers that you can, and fill in one row of the table provided.
 - 5) Repeat this process until the table is complete.



Digits	Greatest Number	Smallest Number

Playing With Big Numbers

Instructions: Answer the questions provided. Use the space available on these sheets to write numbers and organize your thinking.

Paul and his friends were playing a math game with the digits 0 through 9. They put multiple sets of cards with these digits on them in a bag and then took turns drawing 4 cards at a time. At first, they played to see who could make the greatest number with their cards.



6309



9572



4939



0886

Who won?

What winning number did this player make?

Then, they played to see who could make the smallest number.



4619



0582



1239



8032

Who won?

What winning number did this player make?



5	8	2	0
---	---	---	---



2	5	3	6
---	---	---	---



7	7	1	6
---	---	---	---



9	0	9	7
---	---	---	---

What winning number did this player make?



5	8	2	0
---	---	---	---



2	5	3	6
---	---	---	---



7	7	1	6
---	---	---	---



9	0	9	7
---	---	---	---

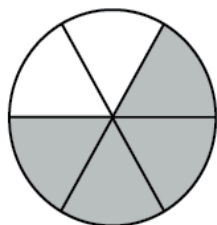
What winning number did this player make?

Think About It!

Fraction Review

Fraction:

part of a whole, a piece of something larger



$$\frac{4}{6}$$



$$\frac{3}{5}$$

Numerator:

the top number in a fraction, how many parts of the whole you have or need

Denominator:

the bottom number in a fraction, the total number of equal parts in a whole

denominator → $\frac{1}{2}$ ← numerator

Time Review



Time Facts

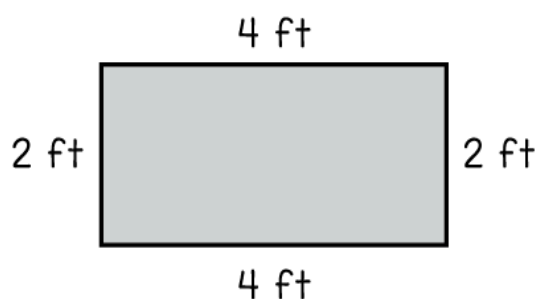
- ⌚ There are 60 seconds in a minute.
- ⌚ There are 60 minutes in an hour.
- ⌚ There are 24 hours in a day.
- ⌚ The short hand on an analog clock tells the hour, and the long hand tells the minute.
- ⌚ AM refers to times before midday, and PM refers to times after midday.
- ⌚ Midnight (12:00 AM) occurs in the middle of the night while noon (12:00 PM) occurs in the middle of the day.

Analog	Digital	Word
	1:00	1 o'clock
	3:30	three thirty, half past three
	4:15	four fifteen, a quarter past/after four, fifteen minutes past/after four
	5:45	fifteen minutes to six, a quarter to six, five forty-five, forty-five minutes past/after five
	8:25	eight twenty-five, twenty-five minutes past/after eight
	9:55	nine fifty-five, five minutes to ten, fifty-five minutes past/after nine

Perimeter and Area Review

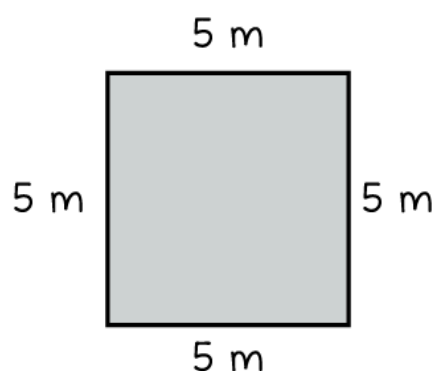
Perimeter: the distance around a plane or two-dimensional shape

To find the perimeter of a polygon, add together the length of each of its sides.



$$4 + 2 + 4 + 2 = 12 \text{ ft}$$

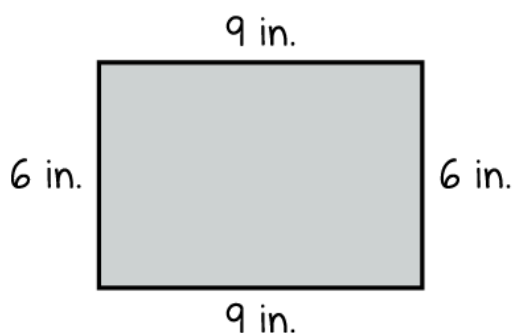
To find the perimeter of a regular polygon, multiply the number of sides of the polygon by the length of one of its sides.



$$5 \times 4 = 20 \text{ m}$$

Area: the measure of space within a plane or two-dimensional shape

To find the area of a rectangle, multiply the lengths of one of its long sides and one of its short sides (or its length times its width).



$$6 \times 9 = 54 \text{ sq in.}$$

Basic Skills Review #1

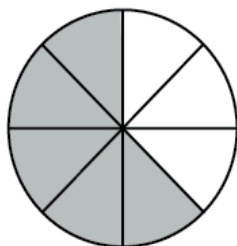
1. Circle the multiples of 3:

6, 8, 11, 15, 20, 24, 28

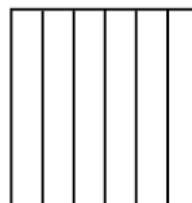
2. Fill in the blanks:

_____, 250, 350, _____,
_____, _____

3. Write the fraction that is shaded.



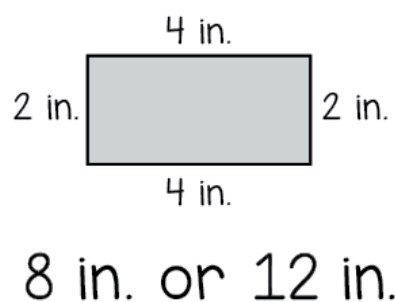
4. Shade $\frac{2}{6}$



5. What time will it be in an hour?



6. Circle the perimeter.



7.

$$7 \times 10 = \underline{\hspace{2cm}}$$

8.

$$5 \times 9 = \underline{\hspace{2cm}}$$