

MATH LEVEL 1
LESSON PLAN 1

NUMBERS

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Section 1: Digits & Numbers

1. The subject of Arithmetic focuses on developing a number sense. The word ARITHMETIC comes from Greek; it translates as “number skill”.
2. DIGITS are like letters, whereas NUMBERS are like words. There are 26 different letters in English that are used to write many thousands of words. Similarly, there are 10 different digits in arithmetic that are used to write all numbers.

Word
CAT
Letters

Number
395
Digits

A DIGIT IS LIKE A LETTER. A NUMBER IS LIKE A WORD.

☺ **EXERCISE**

- (a) Write a single-letter word. Write a single-digit number.
- (b) Write a double-letter word. Write a double-digit number.
- (c) Write a three-letter word. Write a three-digit number.
- (d) How many digits make up the number 3,532?

Answer: (a) A; 3 (b) BE; 25 (c) SEA; 472 (d) Four

Section 2: Digits of Numbers

3. The single-digit numbers are: 1, 2, 3, 4, 5, 6, 7, 8, 9. Zero (0) is used as a place holder when there is no count.

There are NINE single digit numbers, and zero as a place holder.

4. How many double-digit numbers are there? The largest double-digit numbers is **99**, but the count of 99 includes the count of single-digit numbers up to 9. So the total double-digit numbers are, $99 - 9 = 90$. We do not subtract the smallest double-digit number **10** because “10” is included as a double-digit number.

There are NINETY double-digit numbers.

5. To find how many three-digit numbers are there, we subtract from the largest three-digit number, the largest two-digit number: $999 - 99 = 900$.

There are **NINE HUNDRED** three-digit numbers.

😊 **EXERCISE**

How many four-digit numbers are there?

Answer: Nine thousand.

Section 3: The Groups

6. A small number made up of three or less digits is written without commas.

Small number: 375

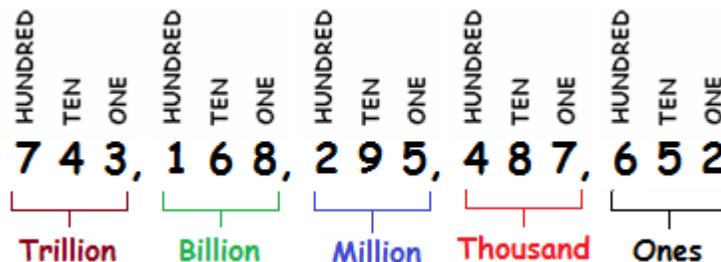
7. A large number made up of more than three digits is written in groups of three digits that are separated by commas.

Large number: 187,352,496

8. A written number is, therefore, divided into groups of three digits from the right. The last group on the left may have three or less digits.

Example: 8,043,579

9. The basic group on the right is called the group of ONES. The subsequent groups to the left are THOUSAND, MILLION, BILLION, TRILLION, etc.



😊 **EXERCISE**

Place commas in the following numbers to separate the groups of digits.

(a) 8268

(c) 6032650

(e) 76098305009023

(b) 82682

(d) 15973037

(f) 80100006000759

Answer: (a) 8,268 (b) 82,682 (c) 6,032,650 (d) 15,973,037 (e) 76,098,305,009,023 (f) 801,000,006,000,759

Section 4: Place Values

10. Each group of three digits is made up of place values. Each place value is ten times the place value on its right.



Dollar (100 cents)	Dime (10 cents)	Penny (1 cent)
HUNDREDS	TENS	ONES

PLACE VALUES

HUNDRED	TEN	ONE
3	9	5

11. The place values are read as such for each group. For example, the following number is read as: “four hundred eighty-seven thousand, six hundred and fifty-two”.

HUNDRED	TEN	ONE	HUNDRED	TEN	ONE
4	8	7	6	5	2
└──────────┘			└──────────┘		
Thousand			Ones		

12. Since each digit on the left is 10 times the digit to its right, we have.

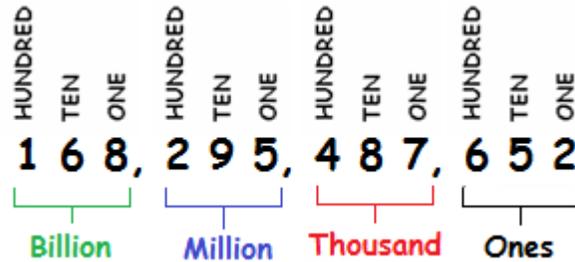
1 THOUSAND	=	10 HUNDREDS
1 MILLION	=	10 HUNDRED THOUSAND
1 BILLION	=	10 HUNDRED MILLION
1 TRILLION	=	10 HUNDRED BILLION

Section 5: Reading Numbers

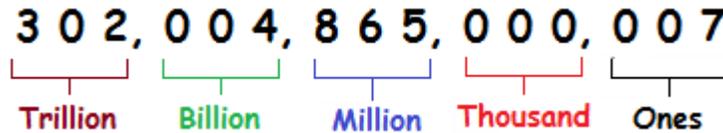
13. The following number is read as: “**eight hundred sixty-five million and seven**”. Note that there are no THOUSANDS group. Also, there are no TENS and HUNDREDS in the ONES group. We place zeros as place holders wherever a count is missing.

HUNDRED	TEN	ONE	HUNDRED	TEN	ONE	HUNDRED	TEN	ONE
8	6	5	0	0	0	0	0	7
└──────────┘			└──────────┘			└──────────┘		
Million			Thousand			Ones		

14. The following number is read as: “**one hundred sixty-eight billion, two hundred ninety-five million, four hundred eighty-seven thousand, six hundred fifty-two**”.



15. The following number is read as: “302 trillion, 4 billion, 865 million, and 7”.



☺ EXERCISE

Practice writing small and large numbers from the following link. Check your answers from the answers given at the bottom. If the answer is different then find the error.

Exercise: [Reading Numbers from Dubb](#)

Exercise: [Writing Numbers from Dubb](#)

☺ *Lesson Plan 1: Check your Understanding*

1. What are digits used for? How many digits are there?
2. How many real elephants are there in the room with you? What digit would you use to represent this number of elephants?
3. Give examples for (a) a single-digit number (b) a double-digit number (c) a three-digit number (d) a five-digit number.
4. How many double-digit numbers are there?
5. What are the three place values (from right to left) in a group?
6. What are the most used groups in a number from right to left?

Check your answers against the answers given below.

Answers

- 1) You use digits to write numbers. There are ten different digits.
- 2) Most likely there is no real elephant in the room with you. You will use the digit ‘0’ in that case to represent the number of elephants.
- 3) Your example may differ: (a) 7 (b) 32 (c) 483 (d) 63,153
- 4) From 10 to 99 there are 90 double-digit numbers.
- 5) One-Ten-Hundred
- 6) Ones, Thousands, Millions, Billions, and Trillions