

**MAFS.5.NBT.1.3:** Read, write, and compare decimals to thousandths.

- a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 =  $3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$ .
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- Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.
- Understand place value to the thousandths.
- Write numbers in expanded form incorporating unit fractions and decimals.
- Write decimals as fractions in expanded form (as noted in the standard).
- Understand decimal equivalents.

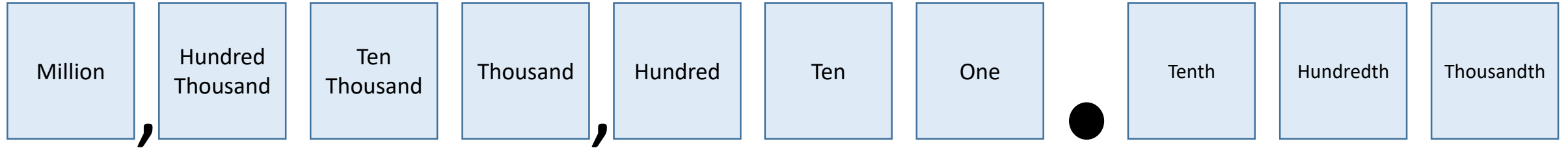
# Place Value

In our decimal number system, the **value** of a digit depends on its **place**, or position, in the number.

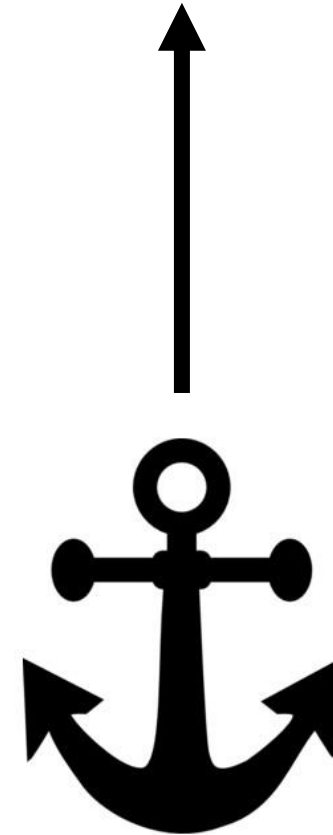
Each **place** has a **value** of 10 times the **place** to its right and  $\frac{1}{10}$  of the **place** to its left.

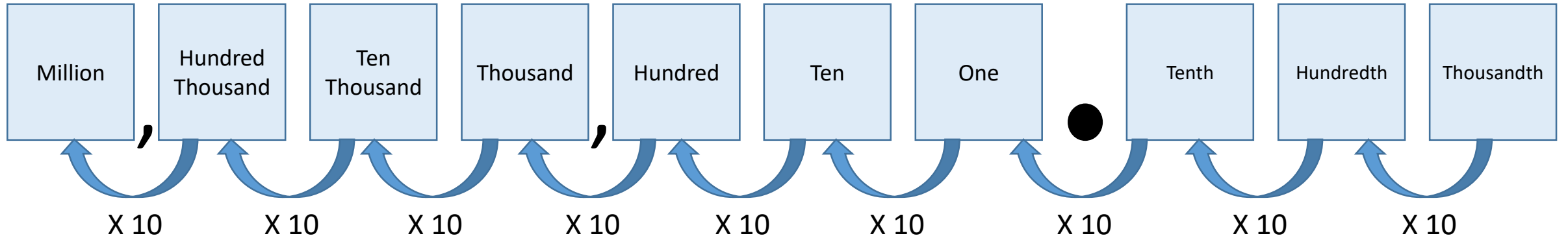
A number in standard form is separated into groups of three digits using commas. Each group is a **period**.

A number in expanded form is separated by showing the digit multiplied by the place.

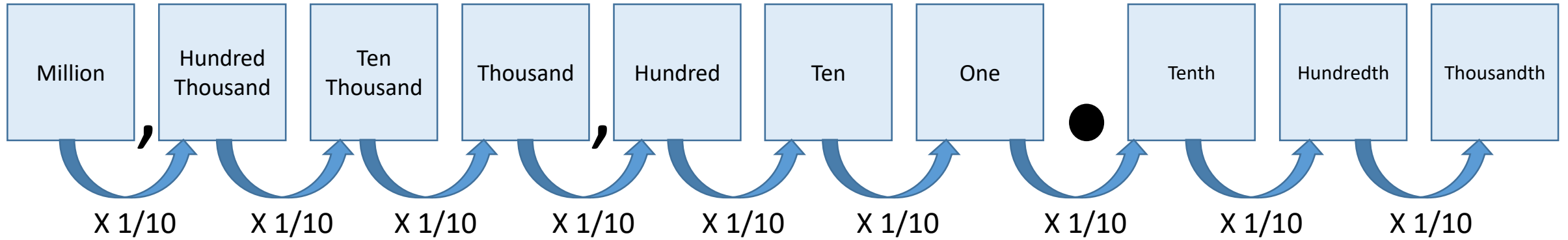


The decimal point is the anchor that separates the whole numbers from the decimal numbers.

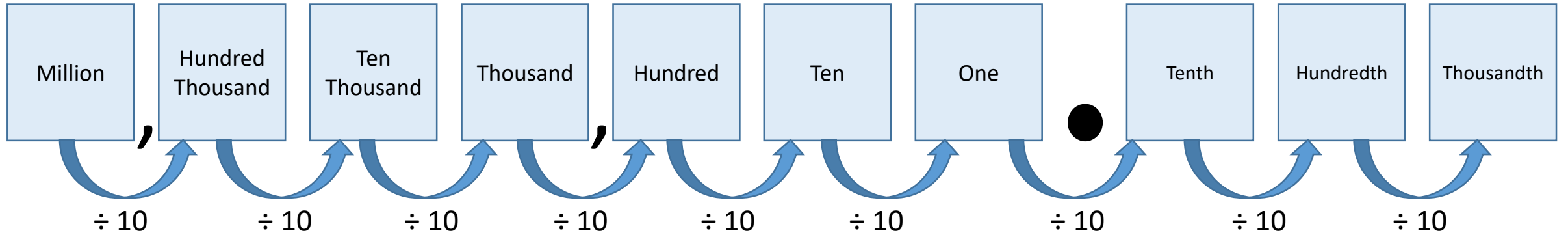




Each place is 10 times greater than the place to its right.

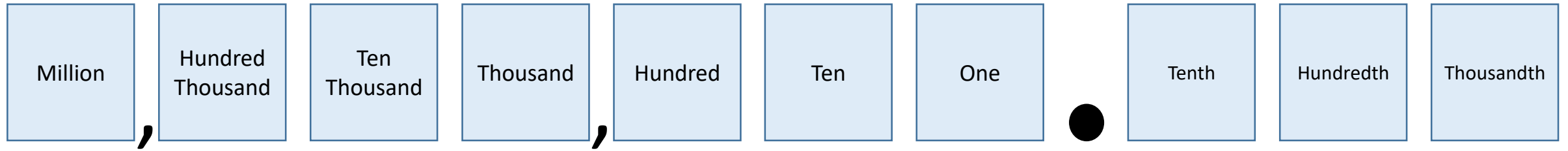


That means that each place is also  $1/10$  the value of the place to its left. We can show this as multiplying times  $1/10$ ...



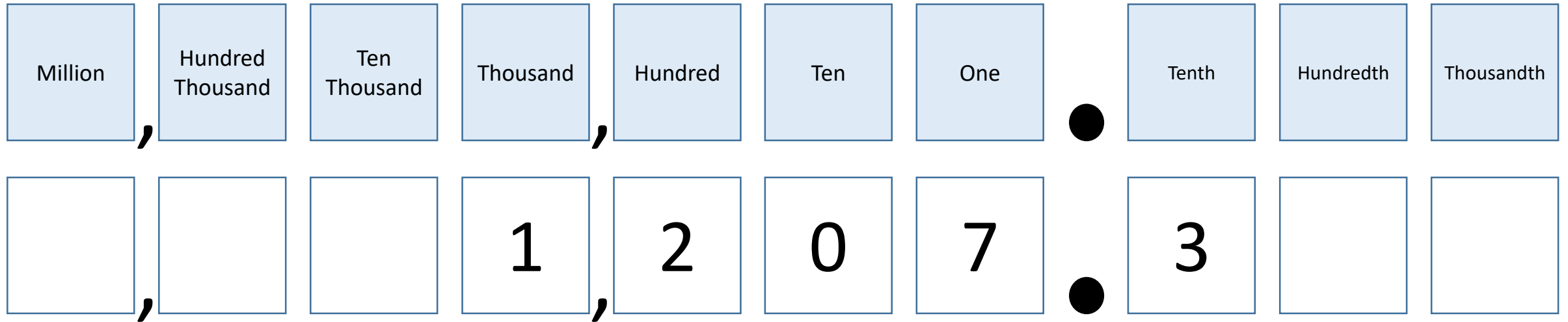
That means that each place is also  $1/10$  the value of the place to its left. We can show this as multiplying times  $1/10$ ...

Or by dividing by 10.



When you say a number with a decimal, you say the word **AND** to represent the decimal point, then you say the decimal place value at the end.

Let's practice reading some decimals.

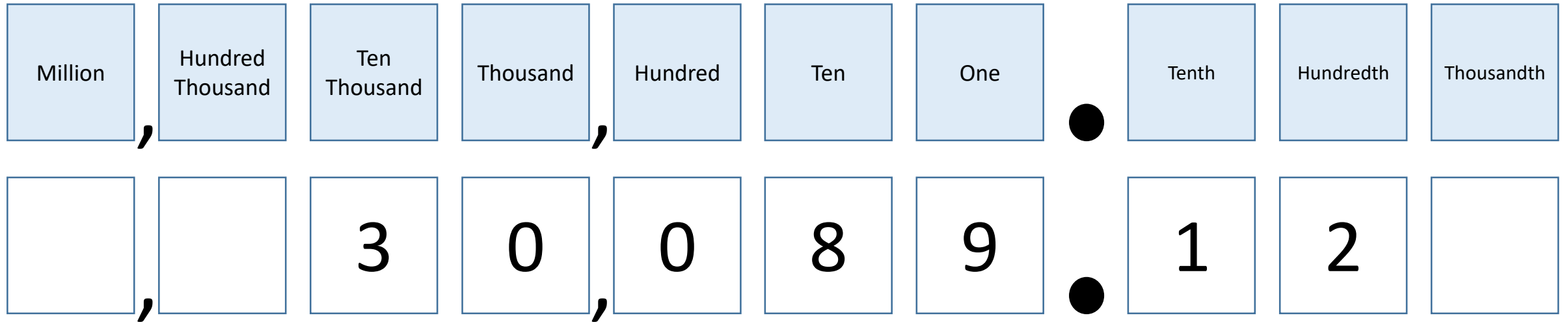


Whisper this number to yourself.

One thousand, two hundred seven AND three tenths.

Did you say it correctly? Let's say it together...

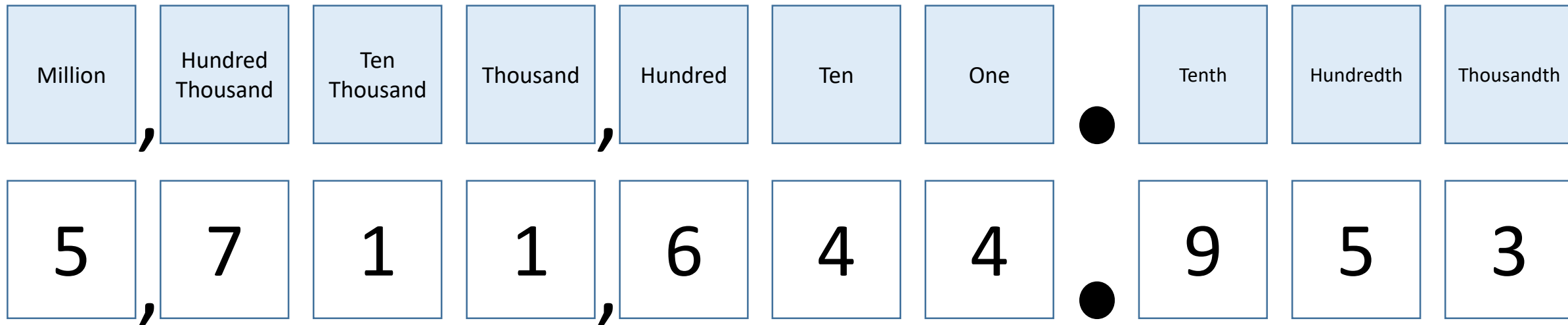




Whisper this number to yourself.

Thirty thousand, eighty nine AND twelve hundredths.

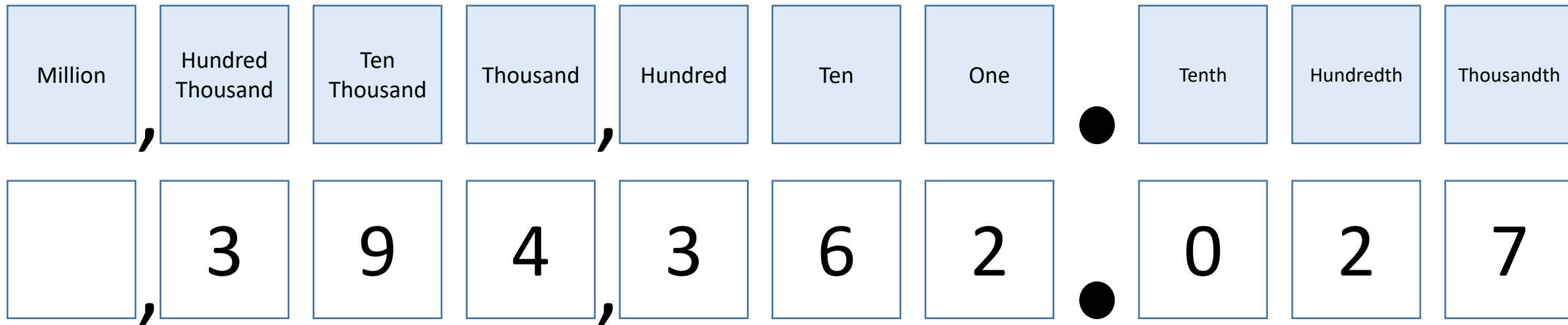
Did you say it correctly? Let's say it together...



Whisper this number to yourself.

Five million, seven hundred eleven thousand, six hundred forty-four, AND nine hundred fifty-three thousandths.

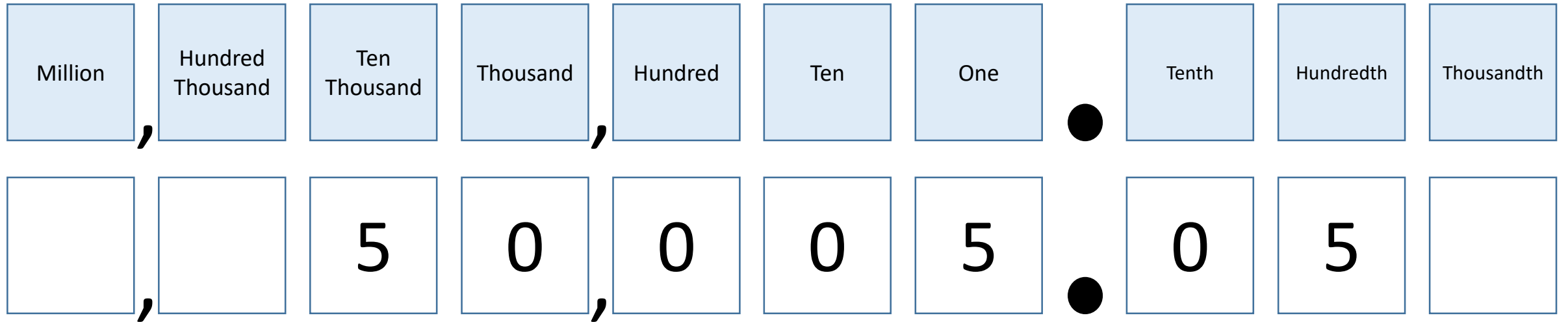
Did you say it correctly? Let's say it together...



Whisper this number to yourself.

Three hundred ninety-four thousand, three hundred sixty-two AND twenty-seven thousandths.

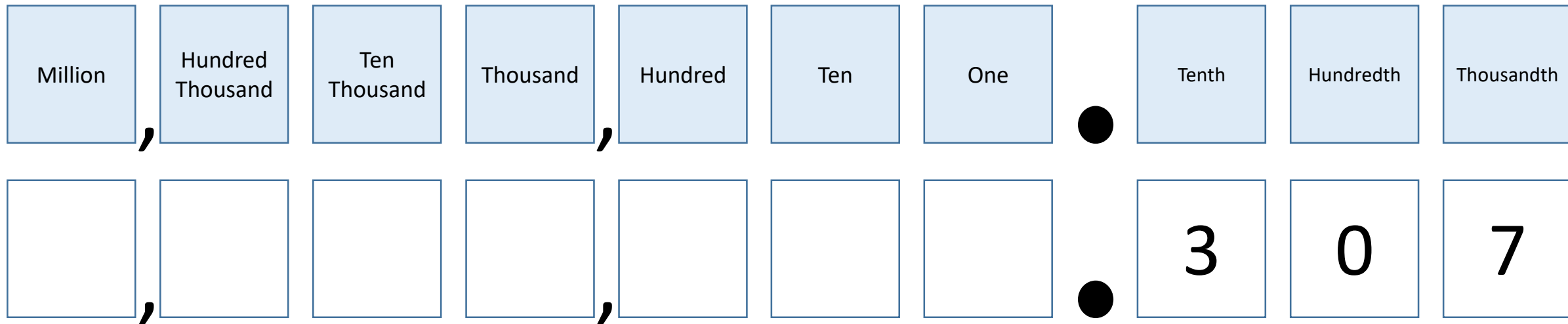
Did you say it correctly? Let's say it together...



Whisper this number to yourself.

Fifty thousand, five AND five hundredths.

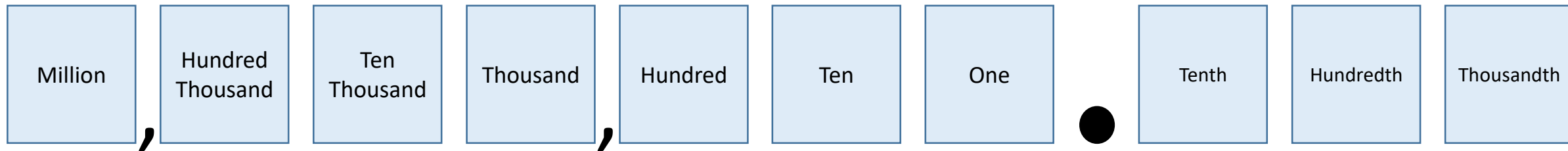
Did you say it correctly? Let's say it together...



Whisper this number to yourself.

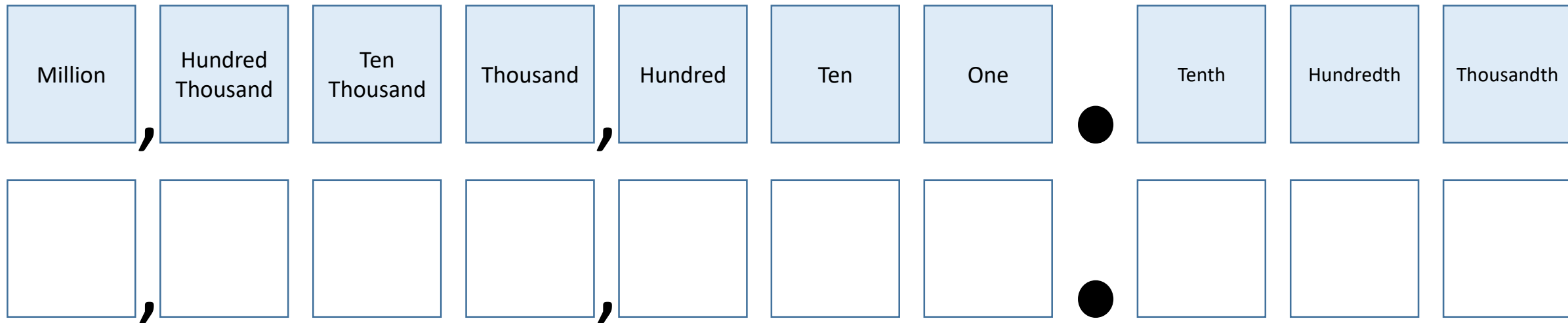
Three hundred seven thousandths.

Did you say it correctly? Let's say it together...

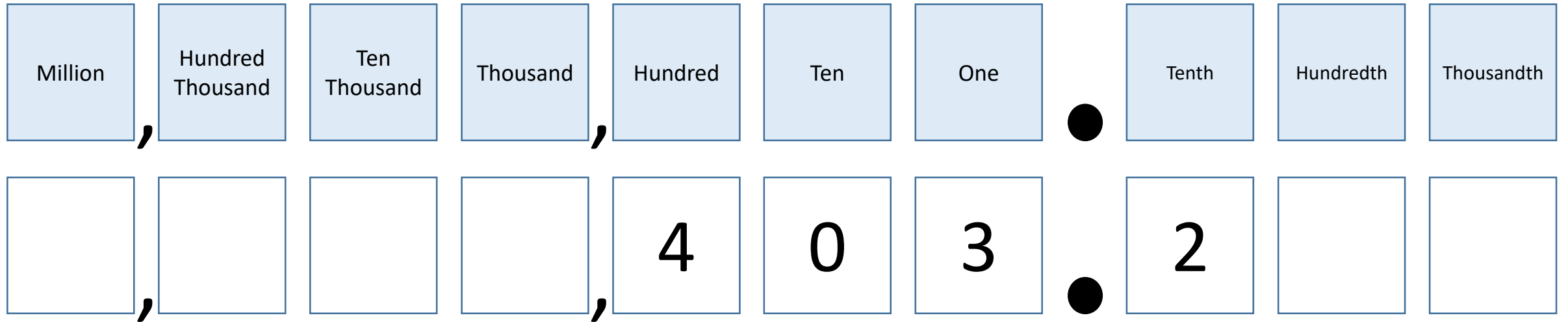


Now, let's practice writing decimals.

Write the number in standard form on your white board.

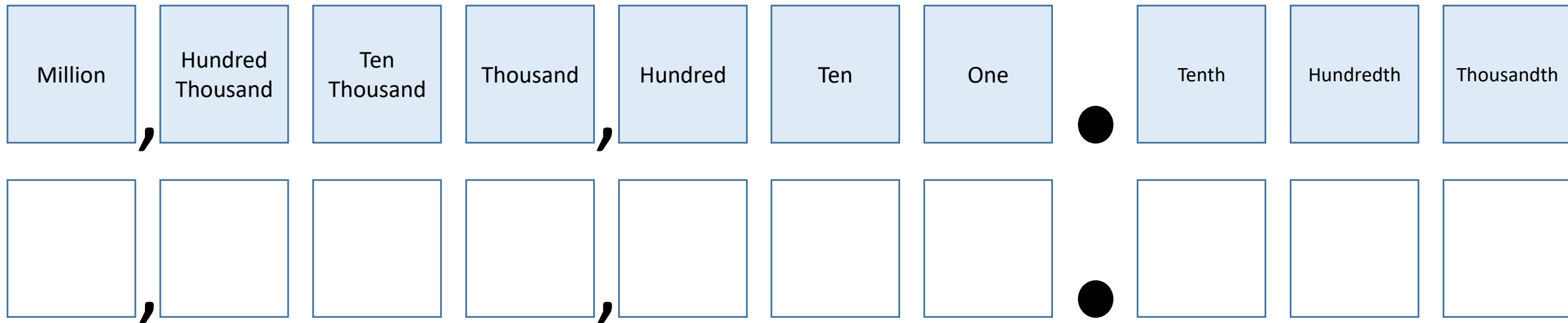


Four hundred three AND two tenths.

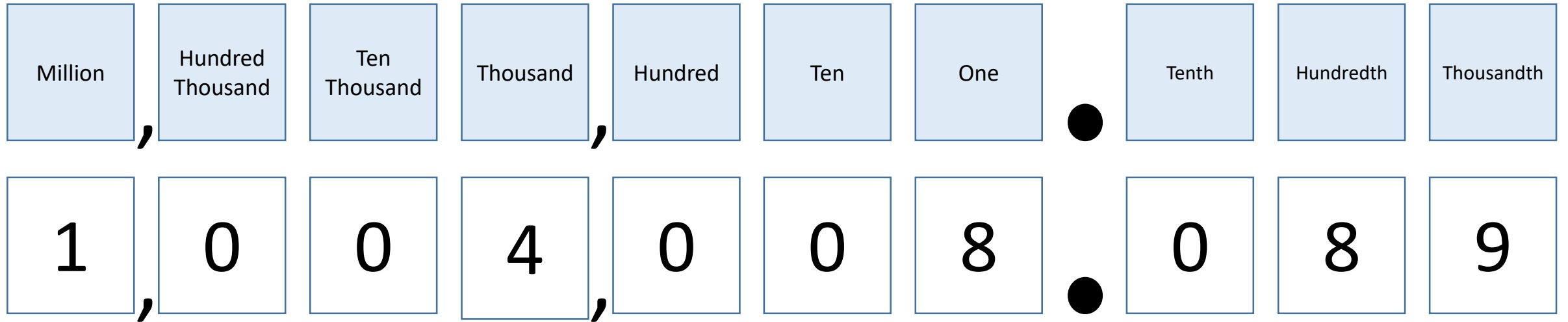


Four hundred three AND two tenths.





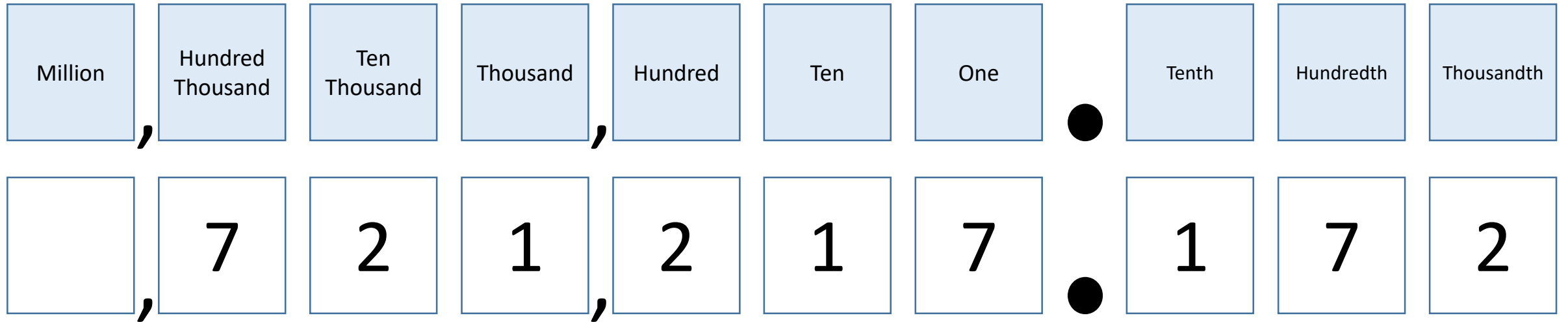
One million, four thousand, eight AND eighty-nine thousandths.



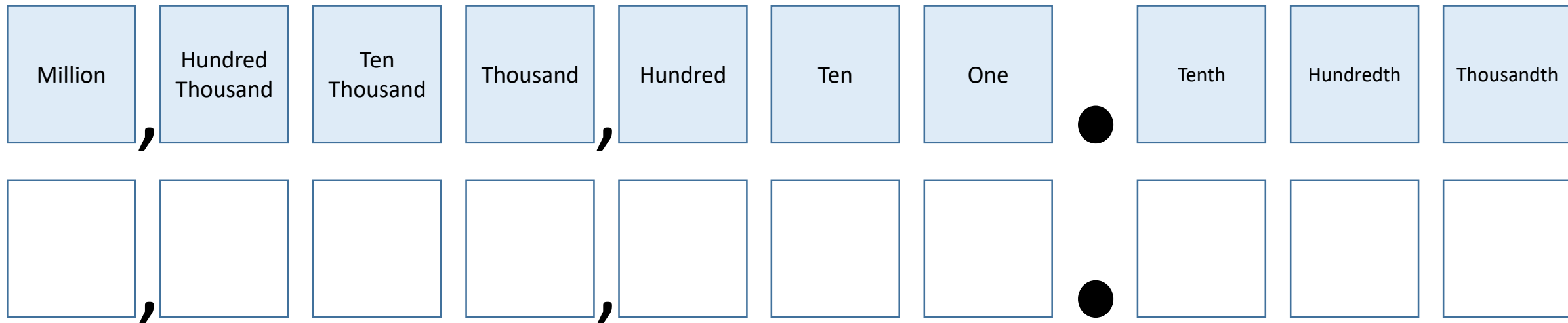
One million, four thousand, eight AND eighty-nine thousandths.

Million	Hundred Thousand	Ten Thousand	Thousand	Hundred	Ten	One	●	Tenth	Hundredth	Thousandth
							●			

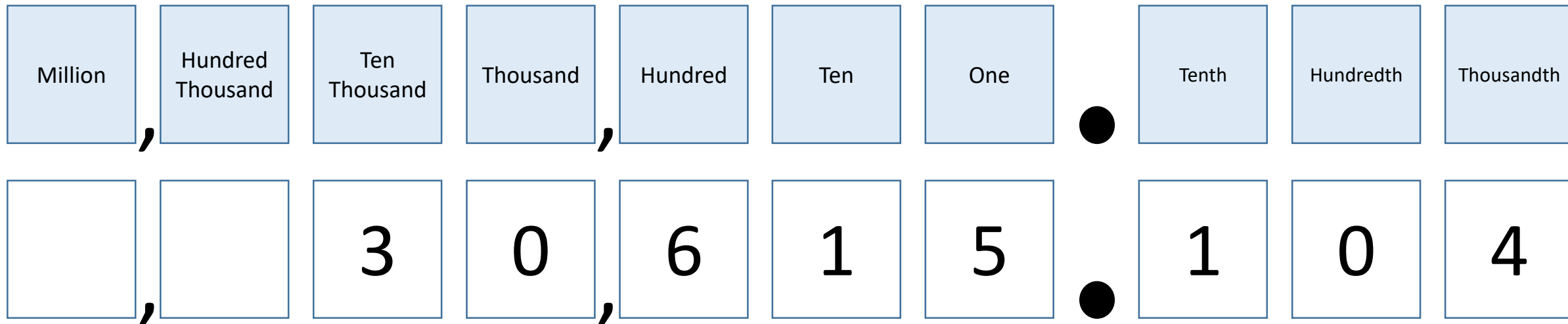
Seven hundred twenty-one thousand, two hundred  
seventeen AND one hundred seventy-two  
thousandths.



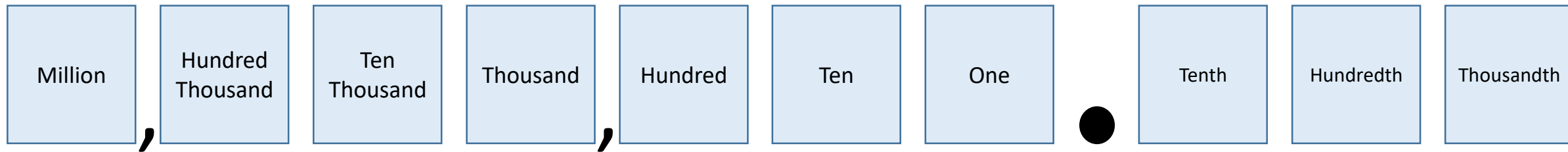
Seven hundred twenty-one thousand, two hundred seventeen AND one hundred seventy-two thousandths.



Thirty thousand, six hundred fifteen AND one hundred four thousandths.

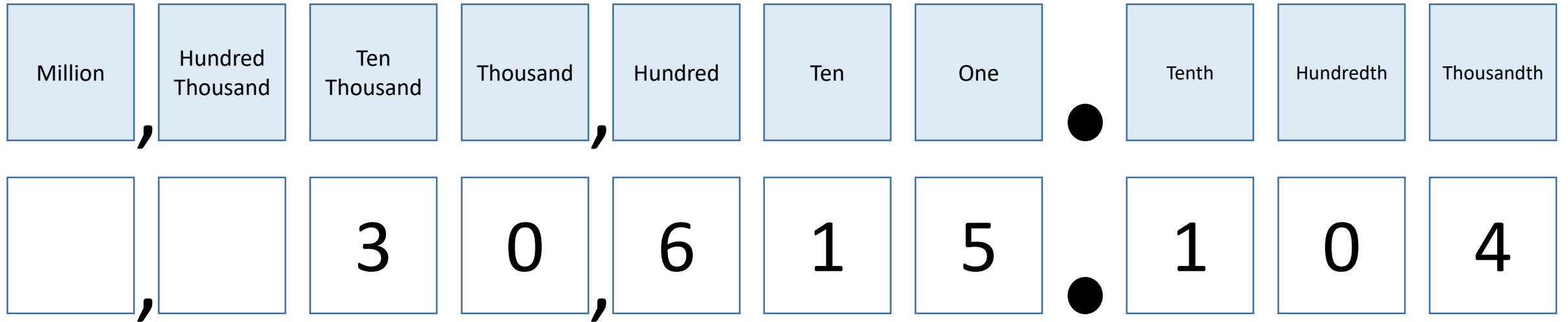


Thirty thousand, six hundred fifteen AND one hundred four thousandths.



Now, let's practice writing decimals in expanded form.

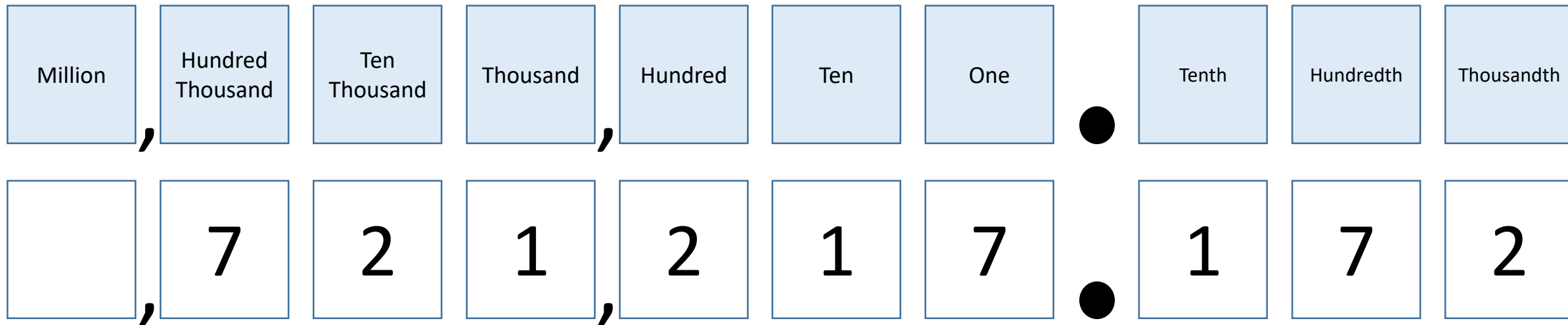
Take a look...



Thirty thousand, six hundred fifteen AND one hundred four thousandths.

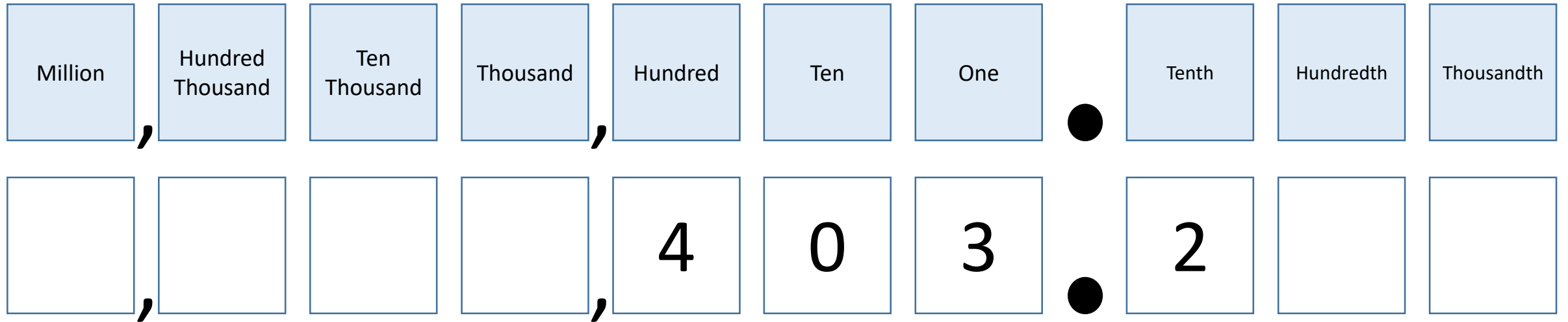
$$(3 \times 10,000) + (6 \times 100) + (1 \times 10) + (5 \times 1) + (1 \times 1/10) + (4 \times 1/1000)$$





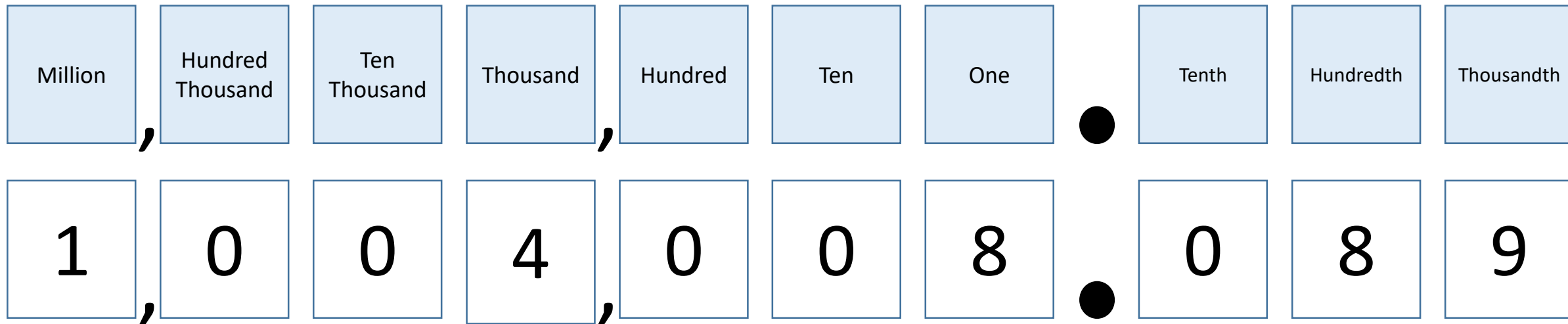
Seven hundred twenty-one thousand, two hundred seventeen AND one hundred seventy-two thousandths.

$$(7 \times 100,000) + (2 \times 10,000) + (1 \times 1,000) + (2 \times 100) + (1 \times 10) + (7 \times 1) + (1 \times 1/10) + (7 \times 1/100) + (2 \times 1/1000)$$



Four hundred three AND two tenths.

$$(4 \times 100) + (3 \times 1) + (2 \times 1/10)$$



One million, four thousand, eight AND eighty-nine thousandths.

$$(1 \times 1,000,000) + (4 \times 1,000) + (8 \times 1) + (8 \times 1/100) + (9 \times 1/1000)$$

Let's practice!

Go Math!

Chapter 3, Lesson 2

Pages 109 - 112