

# Place Value Mat Activities

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<b>Strand:</b>	Number and Number Sense
<b>Topic:</b>	Read, write, and identify the place and value of each digit in a number
<b>Primary 2023 SOL:</b>	<p>3.NS.1 The student will use place value understanding to read, write, and determine the place and value of each digit in a whole number, up to six digits, with and without models.</p> <ol style="list-style-type: none"><li>Read and write six-digit whole numbers in standard form, expanded form, and word form.</li><li>Apply patterns within the base 10 system to determine and communicate, orally and in written form, the place and value of each digit in a six-digit whole number (e.g., in 165,724, the 5 represents 5 thousands and its value is 5,000).</li><li>Compose, decompose, and represent numbers up to 9,999 in multiple ways, according to place value (e.g., 256 can be 1 hundred, 14 tens, 16 ones, but also 25 tens, 6 ones), with and without models.</li></ol>

## Materials:

- Base-10 blocks
- Place value Mat (attached)
- Clear plastic sleeves
- Dry erase markers

## Vocabulary:

*place, value, place value, equal, greater than, greatest, least, less than, estimate, estimation, add, subtract, sum, difference*

## Student/Teacher Actions: What should students be doing? What should teachers be doing?

*Select the attached Place Value Mat that best suits your lesson. Prepare Place Value Mat activity by putting mats in clear plastic sleeves.*

1. The teacher calls out a number (digit) for students to write on place value mat. Numbers may be drawn from a bag of tiles, rolled from a die, or called out randomly.
2. Students can write the number in any place on their place value chart (therefore students will each create their own number). The goal is to create your own 4-digit number, not to create a number with the greatest value.
3. Call out enough numbers to fill the place value spaces.
4. When all place values are filled, students should read their number aloud to their partner.
5. Have students use the workspace to:
  - a) Represent their number in two ways using base 10 blocks then model drawing.
  - b) Write your number in expanded form.

\_\_\_\_\_ Thousands  
\_\_\_\_\_ Hundreds  
\_\_\_\_\_ Tens  
\_\_\_\_\_ Ones

6. Have students compare their representations with their partner(s). What is the same?  
What is different?

**Assessment**

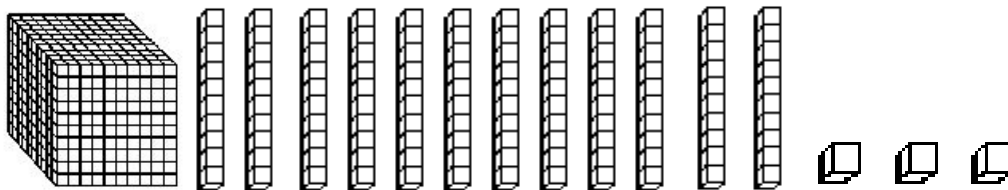
• **Questions**

- How can understanding place and value help you with expanded form?
- What are two ways to represent your number?

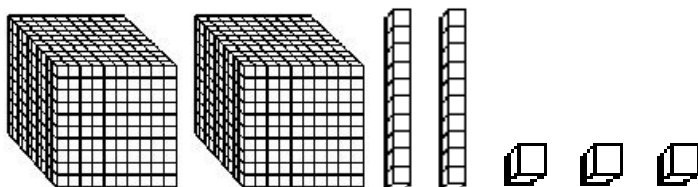
• **Journal/writing prompts**

- Write a letter to a friend explaining what is the same and what is different about the two representations below:

**Set A**



**Set B**



- Write the following number on your Place Value Mat.

**2, 146**

- Write the word and expanded form of the number.
- Represent the number using a base 10 model in two different ways.
- Write the standard and word form for this number:  $7 + 5,000 + 200$

• **Other Assessments**

- Circulate during the activity to observe students' strategies and rationales for creating the models of the three-digit numbers. Note who is having difficulty identifying the values, expanding and composing or decomposing the models of them. Give help, as needed.

#### **Extensions and Connections (for all students)**

- Students can work in small groups or with a partner. Each student may take turns to roll a number cube and then place numbers on the place value chart and follow the directions for representing and identifying place value of the digits.
- Have students put the number 9,846 on the mat. Ask students to model this number in as many ways as possible.
  - Writing prompt: what strategy did you use to help you decompose the number in more than one way? In more than two ways?

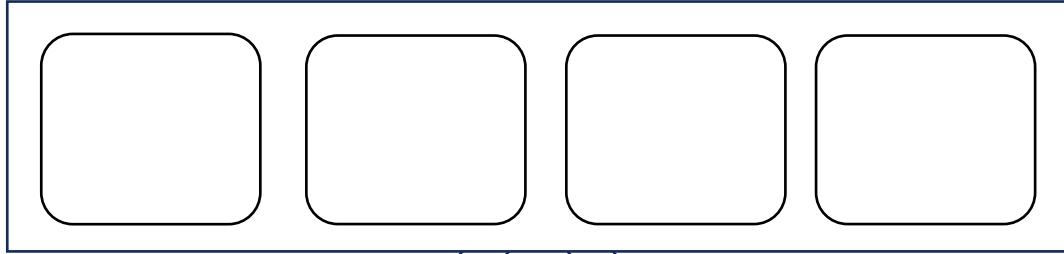
#### **Strategies for Differentiation**

- Students that struggle may benefit from starting with the place value chart that has base 10 blocks. Start with the 3-digit and build up to the 4-digit.
- Use a deck of cards instead of number cubes. Remove the 10 and face cards first. Shuffle and place face down. Students can take turns drawing from the top of the deck and writing the digits on their mat to create a number. Practice saying the number. Think aloud how to model the number. Challenge students to model in a different way than yours. Start with the 3-digit and build up to the 4-digit.

**Note: The following pages are intended for classroom use for students as a visual aid to learning.**

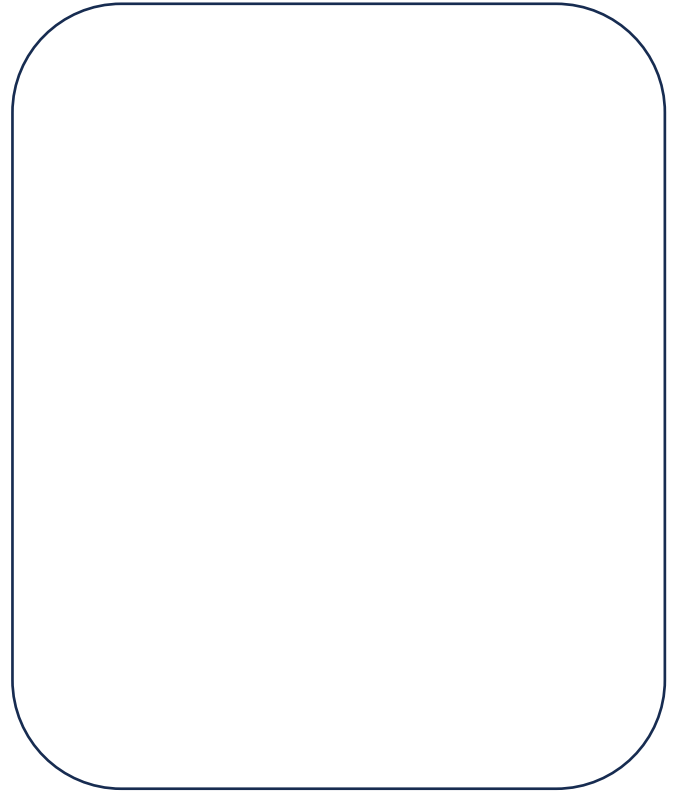
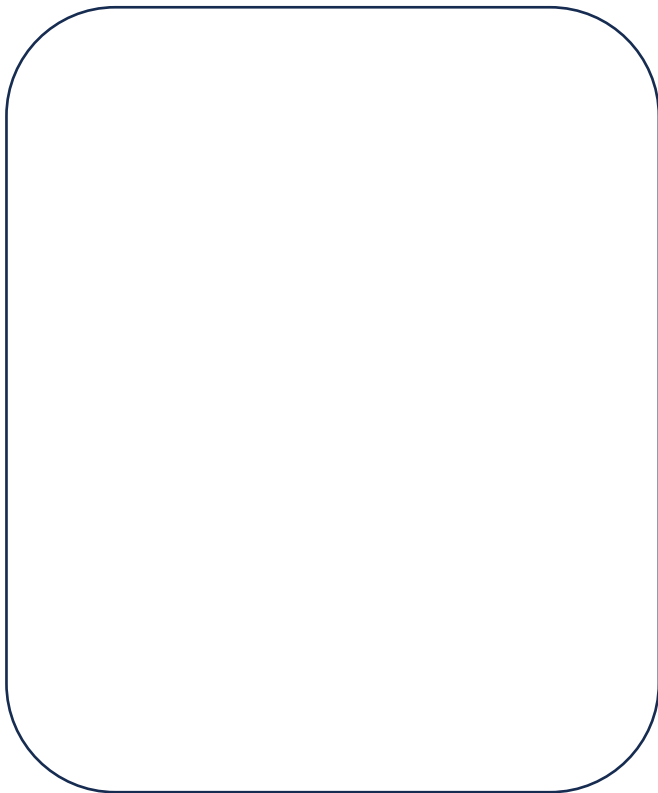
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Create your number by placing 1 digit in each box.



Representation 1

Representation 2



**Expanded form:**

\_\_\_\_\_ Thousands

\_\_\_\_\_ Hundreds

\_\_\_\_\_ Tens

\_\_\_\_\_ Ones

**Expanded form:**

\_\_\_\_\_ Thousands

\_\_\_\_\_ Hundreds

\_\_\_\_\_ Tens

\_\_\_\_\_ Ones