



MISSISSIPPI  
**EXEMPLAR**  
Units & Lessons  
MATHEMATICS

**Grade 2**

Grant funded by:



## Lesson 2: I Use Place Value...What's Your Super Power?

**Focus Standard(s):** 2.NBT.3

**Additional Standard(s):** 2.NBT.1

**Standards for Mathematical Practice:** SMP.3, SMP.4, SMP.6

**Estimated Time:** 50 minutes

**Resources and Materials:**

- Magnificent Math (a stuffed animal superhero used during the lesson as a motivational tool)
- Handout 2.1: Master of Manipulations Learning Accountability Pages for Partners
- Handout 2.2: Master of Manipulations Homework Page
- Base-Ten Blocks
- Place value mats
- Dry erase markers
- Math Antics – Place Value Video: <https://www.youtube.com/watch?v=T5Qf0qSSJFI&t=304s>
- Keagan Structure Rally Coach [http://ija.mpesd.org/UserFiles/Servers/Server\\_5886211/File/Fliers/Rally\\_Coach-CL%20strategy%20selected.pdf](http://ija.mpesd.org/UserFiles/Servers/Server_5886211/File/Fliers/Rally_Coach-CL%20strategy%20selected.pdf)

**Lesson Target(s):**

- Students will use correct mathematical vocabulary to explain place value.
- Students will be able to manipulate base-ten blocks to show numbers to 1000 and represent numbers in place value and expanded form.

**Guiding Question(s):**

- How does the placement of a number change its value?
- How are number patterns essential to our understanding of numbers?


### Vocabulary

**Academic Vocabulary:**

- Base Ten
- Digits
- Hundreds

**Instructional Strategies for Academic Vocabulary:**

- Introduce words with student-friendly definition and pictures
- Model how to use the words in discussion

<ul style="list-style-type: none"> <li>● Ones</li> <li>● Place Value</li> <li>● Tens</li> <li>● Value</li> </ul>	<input type="checkbox"/> Read and discuss the meanings of words in a mathematical context
<div style="display: flex; justify-content: space-between; padding: 5px;"> <span><b>Symbol</b></span> <span><b>Type of Text and Interpretation of Symbol</b></span> </div>	
	Instructional support and/or extension suggestions for students who are EL, have disabilities, or perform well below the grade level and/or for students who perform well above grade level
✓	Assessment (Pre-assessment, Formative, Self, or Summative)
<b>Instructional Plan</b>	
<p><b>Understanding Lesson Purpose and Student Outcomes:</b>            Students will be able to read and write number words for numbers 0–1000 and identify and record three-digit numbers in expanded form, standard form, and number word form. Students will model three-digit numbers using Base-Ten blocks.</p> <p><b>Anticipatory Set/Introduction to the Lesson:</b> Understand the Value of a Number            Ask students to share their lists of ways that 100 is used outside of the school building from the previous night’s homework assignment.</p> <p>Display Magnificent Math where students can see him/her. Remind students that their mission today is to achieve today’s learning goals in order to free Magnificent Math from captivity.</p> <p><b>Activity 1: Understand the Value of a Number (Learnzillion)</b>            Show the first 4 min 50 seconds of the video <a href="#">Math Antics – Place Value Video</a>:            Review the video using the following questions:</p> <ul style="list-style-type: none"> <li>● What are the names of the ten digits? (0, 1, 2, 3, 4, 5, 6, 7, 8, 9)</li> <li>● What are the names of the three places referred to in the video? (ones, tens, hundreds)</li> <li>● Which place has the greatest value? (hundreds)</li> <li>● Which place has the least value? (ones)</li> <li>● What is the greatest digit you can have in each place? (9)</li> <li>● How many ones equal one ten? (10)</li> </ul>	

- How many tens equal one hundred? (10)

**For students who are EL, have disabilities, or perform well below grade-level:**

- Sit students strategically near you so you can quietly prompt them throughout the video (As the video asks question, you may want to have these students quietly say the answer aloud so you can monitor their thinking and learning) and monitor their participation.

**Extensions for students with high interest or working above grade level:**

- Ask students to show the process of forming 1,000 using pictures, words, models, etc.

**Activity 2: Super Modeling**

Assign students to heterogeneous groups based on ability (if possible include a high, low and two mediums). Distribute place value mats and base ten blocks to each group member. Allow 2 to 3 minutes of manipulative “math play.” Students may play with the manipulatives by using them in any way they choose. When the time is up, ask students to describe the attributes of the base ten blocks and the place value mat (color, shape, texture, etc.). Use **Handout 2.1: Master of Manipulations- Learning Accountability Pages for Partners**. Using a Smart Board, overhead, document camera, or other large display method, display one unit, one rod, and one flat. Tell students we will assign a value for each base ten block based on what we know about ones, tens, and hundreds. Display a unit and ask students what value they think it has and where we would place it on the place value mat (ones) and repeat with the rod and flat. Have students do the same thing with their manipulatives. Use the following questions to prompt their thinking.

Prompting Questions:

- How many units make a rod? (10)
- Can you demonstrate that with your base ten blocks?
- So, if it takes 10 units to make a rod, and each unit is worth 1, what can we say about ones? (ten ones =one ten)
- How many rods make a flat? (10)
- Can you demonstrate the with your base ten blocks?
- So, if it takes 10 rods to make a flat, and each rod is worth 10, what can we say about tens? (ten tens =one hundred)

Using base ten blocks and a place value mat, model the number 100, one place at a time. Begin counting from one to nine adding units to the place value mat. When you place the tenth unit on the chart, trade them for a rod (one 10). Model with rods skip counting by tens from ten to ninety. When you place the tenth rod on the chart, trade them for a flat. Show that 100 is one hundred and no tens or ones by asking, “If we have 100, how many tens and ones do we have?” (zero) (SMP.6).

**Note:** Point out to students that the word "and" is often used inappropriately when naming numbers. The word "and" denotes a decimal when representing numbers. Be sure to name numbers without using the word "and" (e.g., do not say "one hundred and thirty-six" but "one hundred thirty-six" (SMP.6).

**For students who are EL, have disabilities, or perform well below grade-level:**

- Provide students with a place value mat for reference.
- Sit students strategically near you so you can quietly prompt them (you may use sentence starters to help them think about each question or you may prompt them by reminding them of how they used the prerequisite skill to help jog their thinking) and monitor their participation.

**Extensions for students with high interest or working above grade level:**

- Ask students to record today's learning gains in a math journal or problems they encountered or concepts they didn't understand. Review the journals to address these issues or enrich students who have a clear understanding of the concept.

Model the number 136 using one flat, 3 rods, and 6 units. Identify and record on a place value mat for students to see that 136 is 6 ones, 3 tens, and 1 hundred. Show and explain how 1 hundred = 100, 3 tens = 30, and 6 ones = 6. Make sure to always line up units as they would be in a ten frame. Reverse the order of the numbers to make 631 and model it with base ten blocks. Ask the students to what is different about the number of base ten blocks we used for the two numbers. (136 has 1 flat, 3 rods, and 6 units but 631 has 6 flats, 3 rods, and 1 unit – they both have 3 rods) Repeat with other 3-digit numbers such as 478, 429, 201, 909, etc. Assign partners and use the Kagan Structure, Rally Coach (Partners take turns, one solving a problem while the other coaches. Then partners switch roles.) to model numbers with base ten blocks and place value mats identifying how many hundreds, tens and ones are in the number. Tell students they will record their answers on **Handout 2.1: Master of Manipulations- Learning Accountability Pages for Partners A and B.** (SMP.3, SMP.4, SMP.6)

**For students who are EL, have disabilities, or perform well below grade-level:**

- Cover the hundreds digit of the 3-digit number and allow students to build the tens and ones, then uncover the hundreds digit guiding students to build the hundreds digit with base ten blocks. As you discuss each digit and its value, encourage students to count by ones, tens, and hundreds.

**Extensions for students with high interest or working above grade level:**

- Give students numbers in the 1,000s to model or use models of thousands to determine the value of the number.

**Activity 3: Superhero Math Talk**

Lead a classroom discussion about the students' essential understanding from today's lesson and how students can build upon this learning.

Prompting Questions:

- What did you discover today?
- What is the value of 2 in the hundreds place?
- Did you discover anything that we didn't discuss today?
- How many tens are in \_\_\_?
- What is the value of 6 in 356?
- What patterns do we recognize within place value?
- Can you relate what you learned today to something else?
- What did you learn today that surprised you?

**Reflection and Closing:**

- ✓ Students explain the 5 most important new learning gains they made during today's lesson. When students finish explaining the 5 learning gains, all at once they will raise their hands in the air and lead them into shouting, "High five for learning!"

**Note:** Choose the student you think should get to release Magnificent Math to protect. Magnificent Math may sit on his/her desk, take the superhero to recess, lunch, specials, etc. He/She may also take the superhero home for the night. Be sure to discuss the

rules of receiving Magnificent Math. The stuffed animal may not become a distraction to others, and it must be returned the following day.

### Homework

Distribute **Handout 2.2: Master of Manipulations Homework Page** and instruct students to complete overnight.

## Handout 2.1: Master of Manipulations Learning Accountability Pages for Partners

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Directions: Model the number using your place value manipulatives and represent your model below. Show the place value and value of each digit in the number.

370

_____	_____	_____
Hundreds	Tens	Ones

602

_____	_____	_____
Hundreds	Tens	Ones

897

_____	_____	_____
Hundreds	Tens	Ones

900

_____	_____	_____
Hundreds	Tens	Ones



**Handout 2.1: Master of Manipulations Learning Accountability Pages for Partners**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Directions: Model the number using your place value manipulatives and represent your model below. Show the place value and value of each digit in the number.**

**124**

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

**450**

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

**300**

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

**709**

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

## Handout 2.2: Master of Manipulations Homework Page

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Directions: Model the number using your place value manipulatives and represent your model below. Show the place value and value of each digit in the number.

290

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

400

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

309

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

Choose  
your own  
number.

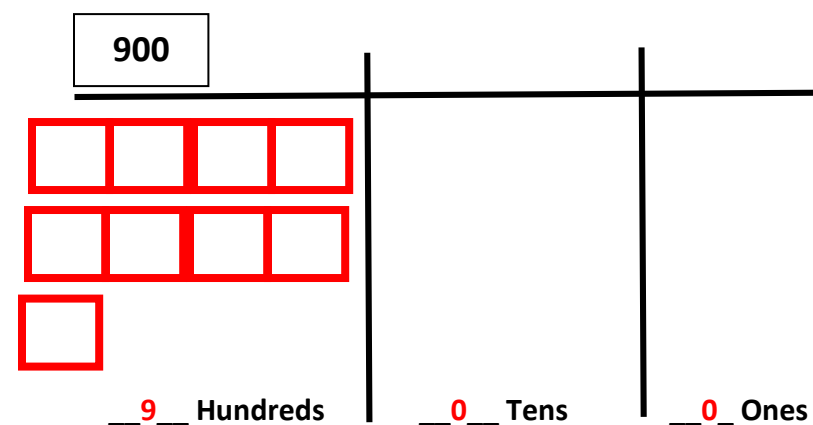
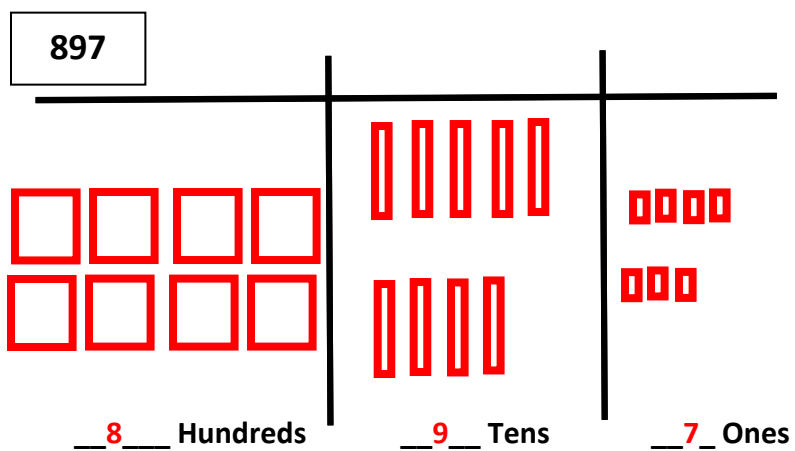
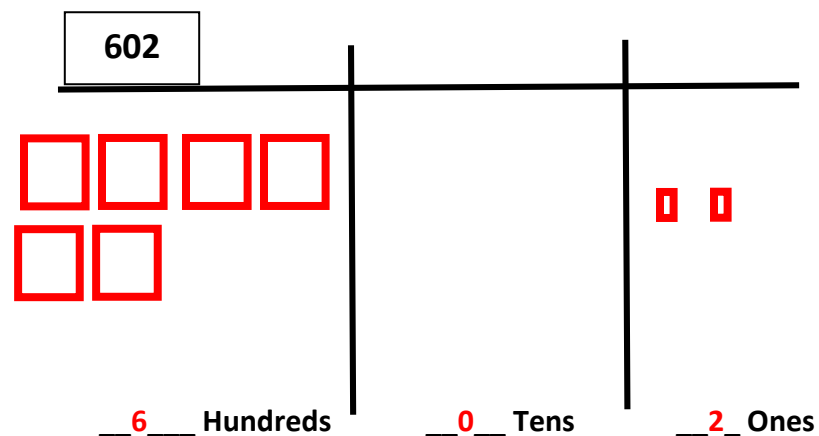
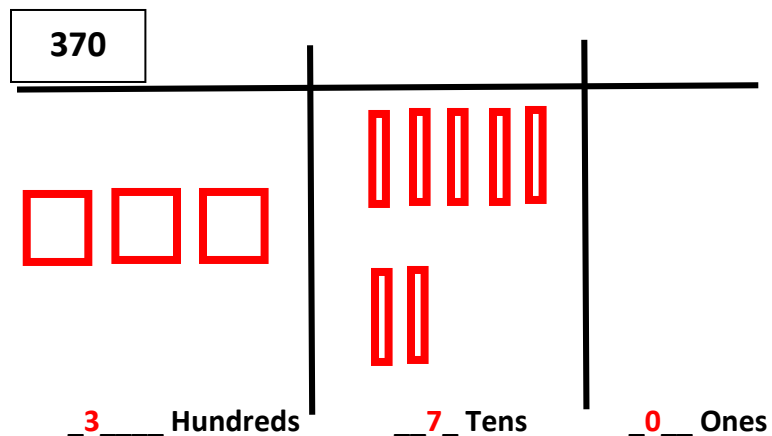
\_\_\_\_\_ Hundreds    \_\_\_\_\_ Tens    \_\_\_\_\_ Ones

Handout 2.1: Master of Manipulations Learning Accountability Pages for Partners **KEY**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Directions: Model the number using your place value manipulatives and represent your model below. Show the place value and value of each digit in the number.

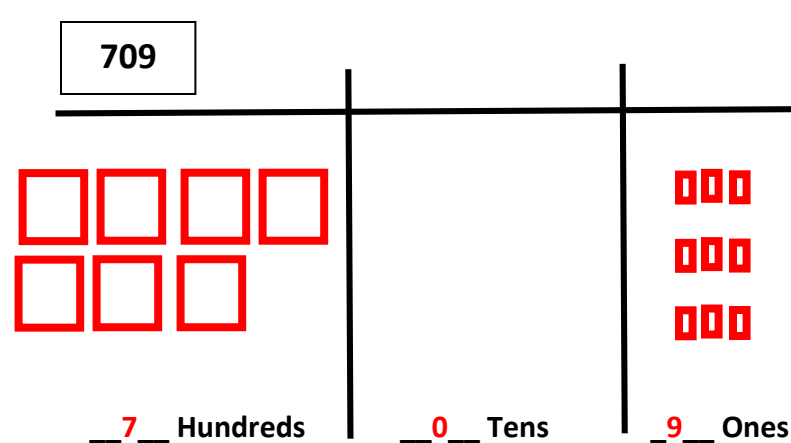
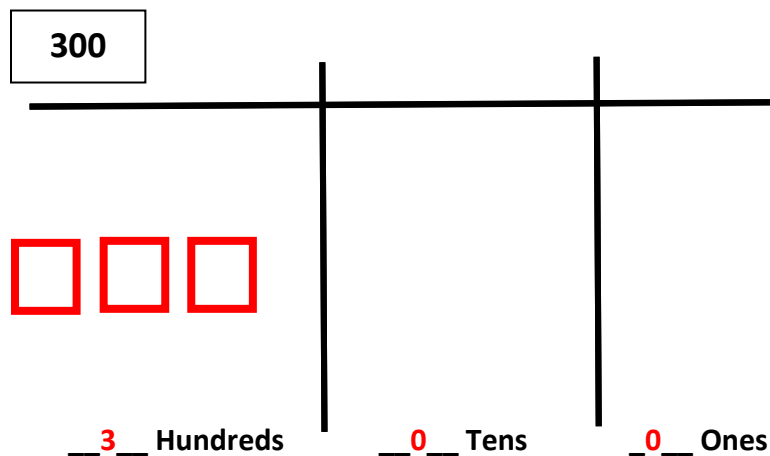
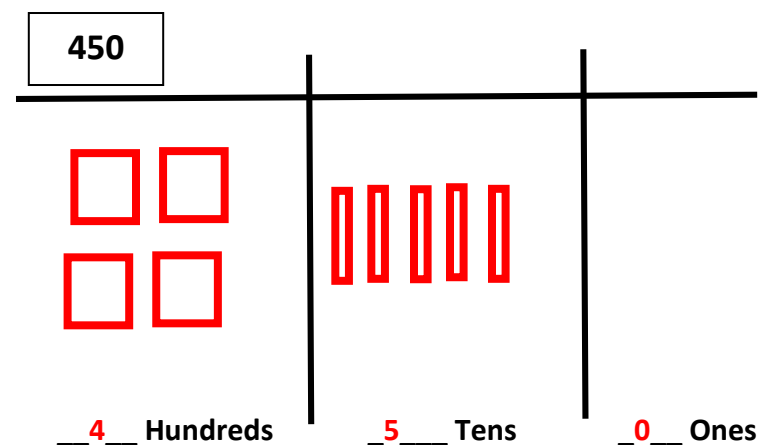
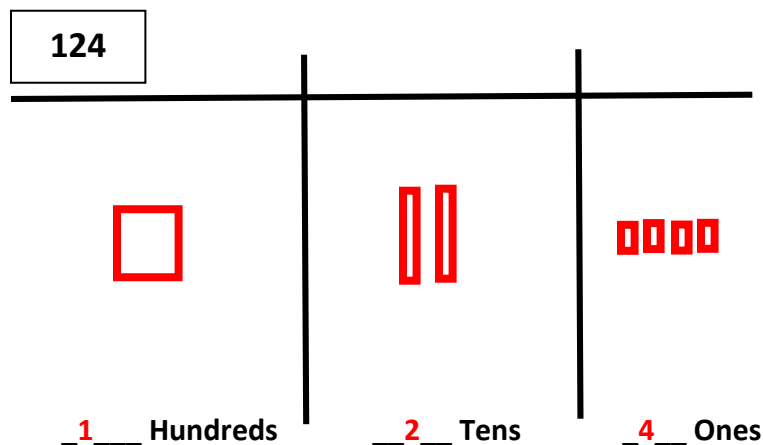


Handout 2.1: Master of Manipulations Learning Accountability Pages for Partners **KEY**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Directions: Model the number using your place value manipulatives and represent your model below. Show the place value and value of each digit in the number.

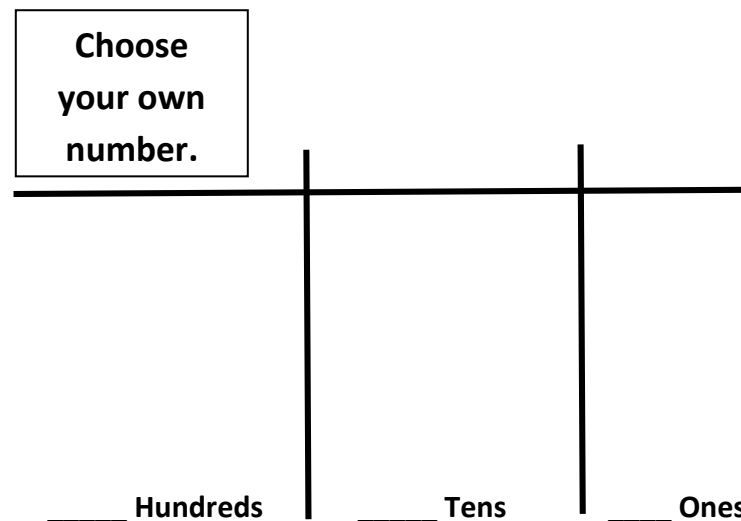
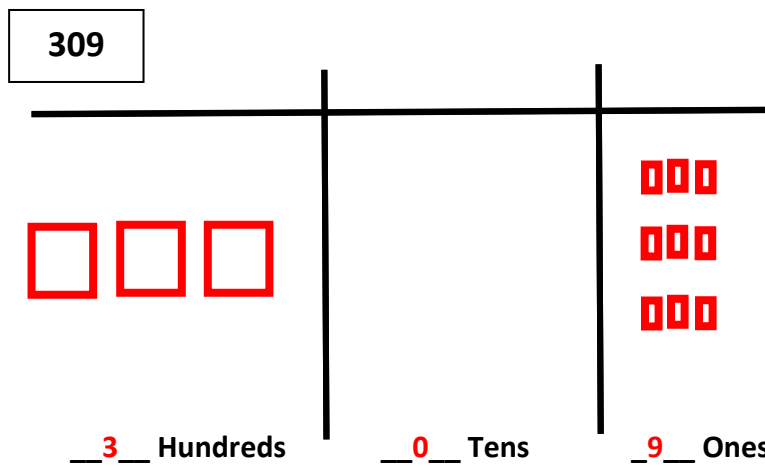
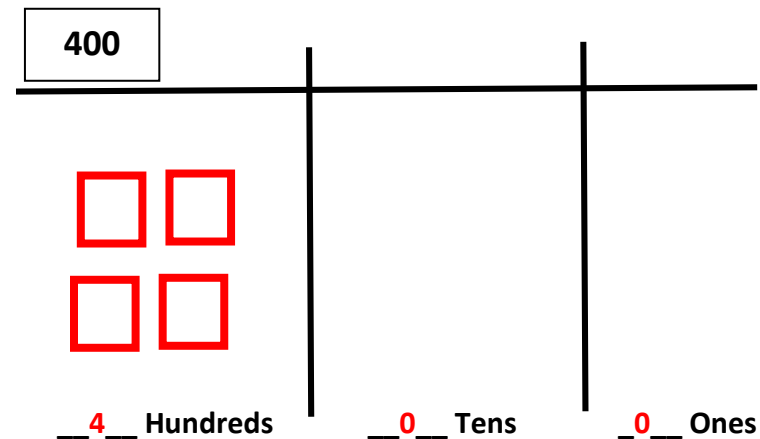
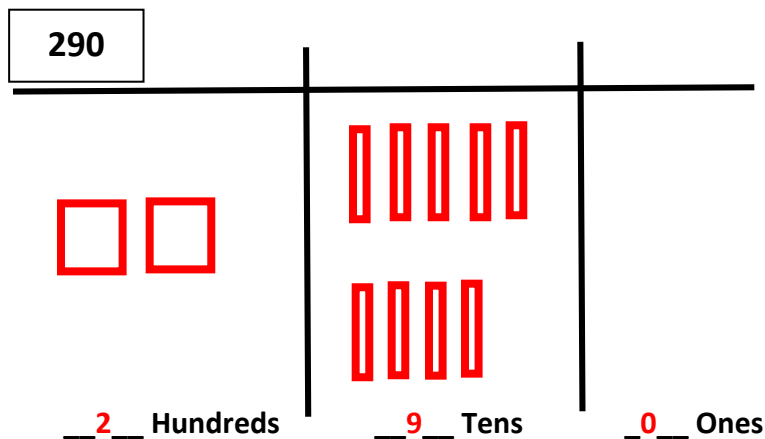


Handout 2.2: Master of Manipulations Homework Page **KEY**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Directions: Model the number using your place value manipulatives and represent your model below. Show the place value and value of each digit in the number.



For training or questions regarding this unit,  
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