

name:

date:

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# Hungry, Hungry Block Hippo

## Game 1

**Directions:** This is a two team/person game. The object of the game is to have the largest pile of blocks at the end of each round. In each round, you will roll a die to get the digits of a 3-digit number. After each roll you must decide where to put the number from the die, or whether not to use that roll in the number. Three rolls will be used and one roll will not be used to make the number.

### Round 1

1. Roll a single die.
2. Write the digit in one of the places below.
3. Roll again.
4. Write the digit.
5. Roll a third time
6. Write the digit.
7. Roll a final time
8. Write the digit.

\_\_\_\_\_ Unused Number \_\_\_\_\_

You cannot move a digit after you write it.

9. Gather base 10 blocks to represent your number.
10. Decide who has the largest pile of blocks and record this using symbols in the box on the right.

Who had the largest pile Round 1?	
_____	_____
me	my partner
Use <, > or = to compare.	



## Round 2

1. Roll a single die.
2. Write the digit in one of the places below.
3. Roll again.
4. Write the digit.
5. Roll a third time
6. Write the digit.
7. Roll a final time
8. Write the digit.

\_\_\_\_\_ Unused Number \_\_\_\_\_

You cannot move a digit after you write it.

9. Gather base 10 blocks to represent your number.
10. Decide who has the largest pile of blocks and record this using symbols in the box on the right.

Who had the largest pile Round 2?					
_____	_____	_____	_____	_____	_____
me			my partner		
Use <, > or = to compare.					

## Round 3

1. Roll a single die.
2. Write the digit in one of the places below.
3. Roll again.
4. Write the digit.
5. Roll a third time
6. Write the digit.
7. Roll a final time
8. Write the digit.

\_\_\_\_\_ Unused Number \_\_\_\_\_

You cannot move a digit after you write it.

9. Gather base 10 blocks to represent your number.
10. Decide who has the largest pile of blocks and record this using symbols in the box on the right.

Who had the largest pile Round 3?					
_____	_____	_____	_____	_____	_____
me			my partner		
Use <, > or = to compare.					



## Round 4

1. Roll a single die.
2. Write the digit in one of the places below.
3. Roll again.
4. Write the digit.
5. Roll a third time
6. Write the digit.
7. Roll a final time
8. Write the digit.

\_\_\_\_\_ Unused Number \_\_\_\_\_

You cannot move a digit after you write it.

9. Gather base 10 blocks to represent your number.
10. Decide who has the largest pile of blocks and record this using symbols in the box on the right.

Who had the largest pile Round 4?	
_____	_____
me	my partner
Use <, > or = to compare.	

## Round 5

1. Roll a single die.
2. Write the digit in one of the places below.
3. Roll again.
4. Write the digit.
5. Roll a third time
6. Write the digit.
7. Roll a final time
8. Write the digit.

\_\_\_\_\_ Unused Number \_\_\_\_\_

You cannot move a digit after you write it.

9. Gather base 10 blocks to represent your number.
10. Decide who has the largest pile of blocks and record this using symbols in the box on the right.

Who had the largest pile Round 5?	
_____	_____
me	my partner
Use <, > or = to compare.	

## Game 2



**Directions:** The goal is still to create the largest 3-digit number possible, but the rules have changed.

1. Roll your die and record the digit in the ones place.
2. Roll your die again and record this digit in the tens place.
3. Roll your die a third time and record this digit in the hundreds place.
4. Represent your 3-digit number with base 10 blocks.
5. You may now choose to trade the location of two of the three digits.
6. Represent this new number with base 10 blocks.
7. Compare who has the greater number between you and your partner and record this using an inequality statement.
8. Repeat the steps.

**Round 1**

Original Number: \_\_\_\_\_

Digits I want to trade: \_\_\_\_\_ and \_\_\_\_\_

New Number: \_\_\_\_\_

Compare your number to your partner's:

\_\_\_\_\_ > \_\_\_\_\_ **Winner Round 1:** \_\_\_\_\_

**Round 2**

Original Number: \_\_\_\_\_

Digits I want to trade: \_\_\_\_\_ and \_\_\_\_\_

New Number: \_\_\_\_\_

Compare your number to your partner's:

\_\_\_\_\_ > \_\_\_\_\_ **Winner Round 2:** \_\_\_\_\_



**Round 3**

Original Number: \_\_\_\_\_

Digits I want to trade: \_\_\_\_\_ and \_\_\_\_\_

New Number: \_\_\_\_\_

Compare your number to your partner's:

\_\_\_\_\_ > \_\_\_\_\_ **Winner Round 3:** \_\_\_\_\_

**Round 4**

Original Number: \_\_\_\_\_

Digits I want to trade: \_\_\_\_\_ and \_\_\_\_\_

New Number: \_\_\_\_\_

Compare your number to your partner's:

\_\_\_\_\_ > \_\_\_\_\_ **Winner Round 4:** \_\_\_\_\_

**Round 5**

Original Number: \_\_\_\_\_

Digits I want to trade: \_\_\_\_\_ and \_\_\_\_\_

New Number: \_\_\_\_\_

Compare your number to your partner's:

\_\_\_\_\_ > \_\_\_\_\_ **Winner Round 5:** \_\_\_\_\_



# Teacher Directions

## Materials:

- Base 10 blocks - 10 ones, 10 tens and 9 hundreds per student or pair
- 10-sided die per pair

## Objective:

Students will explore how place value affects the overall value of a number. Students will roll a die 4 times and decide which three digits to use and assign to each place value in attempts to create the greatest 3-digit number. Once the students choose their 3 digits, they will build their number using base 10 blocks and compare it to their partner's. Students will then write an inequality statement comparing the three-digit numbers.

## Directions:

### Game 1

Model how to play the game with the class. To do this, display page 1 of the student sheet on the document camera. Roll a 10-sided die and ask the class if you should make that number be a one, a ten, a hundred or if you should not use that number.

Explain that the goal will be to create the largest 3-digit number possible and there will be 4 rolls. Three of the four numbers rolled will be used. After each roll, though, you must decide where to record that digit and the digit cannot be moved. Roll three more times, stopping after each roll to ask the class where the digit should be written. Once you have your 3-digit number, take out base 10 blocks to represent the number. Explain that your partner would be doing the same thing (taking turns rolling) and at the end, you will compare who has more blocks and thus the greater number. For the model game, either have a student come roll to represent the class or make up a 3-digit number so you can show the class how to use the inequality symbol to record which number was greater/less.

#### BIG IDEAS:

- To compare numbers, students apply their understanding of place value.
- The goal is for students to understand that they look at the digits in the hundreds place first, then the tens place, and if necessary, the ones place.

Question the class to be sure all understand the rules. Ask, "Can I wait until I roll 4 times to record my numbers?" "Can I move a digit once I write it down?" "How do I know who has the greater number?"

Put the class into groups of two or groups of four where two students play against another pair. Have each team come get a die and base 10 blocks. Students should



play for 15-20 minutes. As you circulate, question students about why they chose to record a digit where they did.

## **Game 2**

Bring the class back together to model the rules for game 2. Show the class page 4 on the document camera. Prompt the students to read a step aloud as you model. Roll the die and record this digit in round 1, the ones place. Roll again and record this digit in the tens place. Roll a third time and record this digit in the hundreds place. Ask the class to say the number aloud with you. Ask the students which blocks you should use to represent this number. Take out the appropriate blocks.

Ask the class if you could make a larger number by trading any two of the digits recorded. Ask, "would trading the tens and ones make my number larger or smaller?" It is acceptable if students still do not know, as they will experience what trading different digits does to the overall number once they begin playing. Make a trade of any two digits and record this as your new number. Represent this number with base 10 blocks. Ask the class if trading the 2 digits made your number larger or smaller. Prompt students to tell a partner why this happened. Explain that your partner would be following the same steps and at the end, you will now each compare your 3-digit number. Write an inequality statement to represent the comparison. Have students play in their teams for about 15-20 minutes. As students play, circulate to ask students to explain their strategy.

Note: This game will benefit the greatest number of students if you pair up students of like ability.

