

General Information

Lesson Parts & Duration

Total Duration: 45 min- 1 hour

- Game: Highest Value Race

Subject(s)

- Place Value understanding for multi-digit whole numbers and decimals to the thousandths place. (5.NBT.A1)

Objective

- Students will increase or decrease the value of numbers by multiplying and dividing a number by 10 showing 10x the value and 1/10 the value.

Materials

- blank paper (a few per student) -OR- student dry erase board -OR- place value mat
- pencil or dry erase marker
- deck of playing cards/number cards/or index cards to make cards (30-40 per group)
- document camera or whiteboard
- **Optional:** student printable directions (pages 5-7)
- **Optional:** printable “Break Up Your Day” brain/movement break idea (page 8)

Instructional Setting

- Seated with or near another student for partner work

Throughout this lesson, you will find:

- ☀ **Scripted Text** indicates things that need to be said directly. Bullets starting with a “T” followed by *italicized type* indicate scripted text
- ☀ **Clarifiers** within scripted text are in orange
- ☀ **Teacher Directions** indicate things you should be doing
- ☀ **Side notes** provide helpful hints, ELL strategies, differentiation and information
- ☀ **Break Up Your Day** (Brain/Movement Breaks) are in green boxes (at the end)

Remember!

Quality over quantity. All components do not have to be accomplished; lessons may be ended at any time and resumed later.

Instructional Plan: 45-60 minutes

- T* We are going to practice Place Value by playing a game.
- T* This game is called “Highest Value Race”.
- T* During this game, your number will be increasing and decreasing in value.
- T* The player or team with the highest value at the end wins.
- T* You will play against a partner or another small group. **Assign partners or teams.**
- T* You will need: a deck of playing cards or index cards with numbers written on them. **Students can make a deck of playing cards by using index cards, on each one write 1 digit 0-9. Make about 3-4 of each digit. You will also need scratch paper/a place value mat/ or dry erase board.**
- T* Round 1 you will play with a single digit number, Round 2, double digit, Round 3 triple digit number. If time you will go back to a single digit number for Round 4.



Step 1: Choosing your “Number”


- T* Shuffle the deck of cards.
- T* Place it face down.
- T* Each team draws 1 card.
- T* That is your “number” Record it on your chart or dry erase board. **See Example and Model it for the class to follow along.**



Step 2: Begin the Game




- T* Whose ever number original number is higher, gets to go first.
- T* The other partner will then draw another card.
- T* Whose ever card is higher gets to go up 10 times.
- T* The other person or team will then go down 10 times.

Example Round 1:

- T* Partner/Team 1: Draws a  Partner/Team 2: Draws a 
- T* Team 1’s number for round 1 is: 5 & Team 2’s number for round 1 is 3.
- T* Team 1’s number has a higher value so they will pick from the deck of cards first.

- T*  Team 1 pulls the top card; Team 2 pulls the next card.

- T* Team 1:  Team 2:  ... Team 2’s 9 is higher than Team 1’s 2.
- T* So, Team 2 gets to make their original number “3” ten times more. $3 \times 10 = 30$
- T* Since Team 1’s original number “5” is already in the ones place.
- T* They need to insert a “0” in the ones place and move their “5” into the tenths place.
- T* The value is now $5/10$ or 0.5

- T* Draw Again  Team 1:  Team 2: 
- T* Team 1’s card has a higher value. So, they get to make their number 10 times more. ($\times 10$)
- T* Team 2’s card has a smaller value. So, they will make their number 10 times less. ($\div 10$)
- T* Keep going until there are no cards left in the deck. Whoever has the higher value at that point wins.
- T* Important Note: The original card drawn is the only one that will change up or down. The other cards drawn throughout the game just tell who gets to move up by 10 or down by 10.

Round 1:

TEAM 1 Points	Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths
5				5	.			
5/10				0	.	5		
5			0	5	.			

TEAM 2 Points	Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths
3				3	.			
30			3	0	.			
3				3	.			

Round 2:

- T* Each team will start by pulling 2 cards to begin.
- T* That will be their original number.
- T* When a team gets a penalty, they cannot drop below a number in tens place.

Example:

- T* Team 1 draws 2 cards: first a 2, then a 3. Their original number is “23” & Team 2 draws 2 cards: first a 4, then a 5. Their original number is “45”
- T* Now they are ready to start.
- T* Place deck of cards face down.
- T* Team 2 draws a card first because 45 has a greater value than 23.



- T* Team 2: 7 Team 1: 9
- T* 9 is larger than 7.
- T* Team 1 gets to increase their number by 10. ($23 \times 10 = 230$)
- T* Team 2 decreases their number by $1/10$. So, they will shift their 5 from the ones place to the tenths, and their 4 from the tens place to the ones place. ($45/10 = 4.5$)



- T* Team 2: 8 Team 1: 7
- T* 8 is larger than 7.
- T* Team 2 gets to increase their number by 10 ($4.5 \times 10 = 45$)
- T* Team 1 decreases by 10 ($230 / 10 = 23$)
- T* Keep going until there are no cards left in the deck.
- T* Whoever has the higher value at that point wins.
- T* Important Note: The original card drawn is the only one that will change up or down. The other cards drawn throughout the game just tell who gets to move up by 10 or down by 10.

Round 2:

	<i>Thousands</i>	<i>Hundreds</i>	<i>Tens</i>	<i>Ones</i>	.	<i>Tenths</i>	<i>Hundredths</i>	<i>Thousandths</i>
23			2	3	.			
230		2	3	0	.			
23			2	3	.			

<i>TEAM 2 Points</i>	<i>Thousands</i>	<i>Hundreds</i>	<i>Tens</i>	<i>Ones</i>	.	<i>Tenths</i>	<i>Hundredths</i>	<i>Thousandths</i>
45			4	5	.			
4.5				4	.	5		
45			4	5	.			

Place Value Game

Highest Value Race

Objective of the game: End with the highest valued number

Skill: Place Value- recognize that in a multi-digit whole number, a digit represents ten times what it represents in the place to its right and $\frac{1}{10}$ what it represents to the left.

Number of Players: 2-6 (singles or teams)

Materials Needed:

- Blank paper a few per student -OR- Student dry erase board -OR- Place value mat
- Pencil or dry erase marker
- Deck of playing cards/number cards/make your own number cards
- You can make a deck of playing cards by using index cards, on each one write 1 digit 0-9. Make about 3-4 of each digit. (30-40 Index cards per group)

How to Play:

- Round 1 you will play with a single digit number, Round 2, double digit, Round 3 triple digit number. If time you will go back to a single digit number for Round 4.






Step 1: Choosing your “Number”

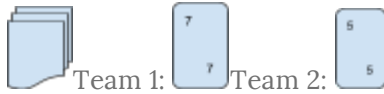
- Shuffle the deck of cards.
- Place the deck face down.
- Each team draws 1 card.
- That is your “number” Record it on your chart or dry erase board.

Step 2: Begin the Game

- Whose ever number original number is higher, gets to go first.
- The other partner will then draw another card.
- Whose ever card is higher gets to go up 10 times. (Original number \times 10)
- The other person or team will then go down 10 times. (Original number \div 10)
-
- * If your original number is in the ones place you stay there, you do not drop below the ones place during the game.

Example Round 1:

- Partner/Team 1: Draws a  Partner/Team 2: Draws a .
- Team 1's number for round 1 is: 5 & Team 2's number for round 1 is 3.
- Team 1's number has a higher value so they will pick from the deck of cards first.
-  Team 1 pulls the top card; Team 2 pulls the next card.
- Team 1:  Team 2:  ... Team 2's 9 is higher than Team 1's 2.
- So, Team 2 gets to make their original number “3” ten times more. $3 \times 10 = 30$
- Since Team 1's original number “5” is already in the ones place. They need to insert a “0” in the ones place and move their “5” into the tenths place. The value is now $\frac{5}{10}$ or 0.5.



- Draw Again
- Team 1's card has a higher value. So, they get to make their number 10 times more. ($\times 10$)
- Team 2's card has a smaller value. So, they will make their number 10 times less. ($\div 10$)
- Keep going until there are no cards left in the deck. Whoever has the higher value at that point wins.
- **Important Note:** The original card drawn is the only one that will change up or down. The other cards drawn throughout the game just tell who gets to move up by 10 or down by 10.

Round 1:

TEAM 1 Points	Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths
5				5	.			
5/10				0	.	5		
5			0	5	.			

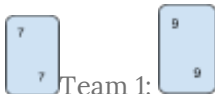
TEAM 2 Points	Thousands	Hundreds	Tens	Ones	.	Tenths	Hundredths	Thousandths
3				3	.			
30			3	0	.			
3				3	.			

Round 2:

- Each team will start by pulling 2 cards to begin. That will be their original number. When a team gets a penalty, they cannot drop below a number in tens place.

Example:

- Team 1 draws 2 cards: first a 2, then a 3. Their original number is "23" & Team 2 draws 2 cards: first a 4, then a 5. Their original number is "45"
- Now they are ready to start.
- Place deck of cards face down.
- Team 2 draws a card first because 45 has a greater value than 23.



- Team 2: 7 Team 1: 9
- 9 is larger than 7.
- Team 1 gets to increase their number by 10. ($23 \times 10 = 230$)
- Team 2 decreases their number by $1/10$. So, they will shift their 5 from the ones place to the tenths, and their 4 from the tens place to the ones place. ($45/10 = 4.5$)



- Team 2: 8 Team 1: 7
- 8 is larger than 7.

- Team 2 gets to increase their number by 10 ($4.5 \times 10 = 45$)
- Team 1 decreases by 10 ($230 / 10 = 23$)
- Keep going until there are no cards left in the deck. Whoever has the higher value at that point wins.

Round 2:

<i>TEAM 1 Points</i>	<i>Thousands</i>	<i>Hundreds</i>	<i>Tens</i>	<i>Ones</i>	<i>.</i>	<i>Tenths</i>	<i>Hundredths</i>	<i>Thousandths</i>
23			2	3	.			
230		2	3	0	.			
23			2	3	.			

<i>TEAM 2 Points</i>	<i>Thousands</i>	<i>Hundreds</i>	<i>Tens</i>	<i>Ones</i>	<i>.</i>	<i>Tenths</i>	<i>Hundredths</i>	<i>Thousandths</i>
45			4	5	.			
4.5				4	.	5		
45			4	5	.			

Make sure to “Break Up Your Day!”

This can be used in the middle of a lesson or at the end of your lesson.

It is an engaging movement and brain break idea to get your students moving and ready to refocus!



Break Up Your Day: Math Outside!



- Students take scratch paper/pencil and find numbers outside.
- Students write multiplication problems they see on the playground.
(examples: 3 basketball courts times 6 students equals 18 basketball players, four hopscotches times 5 students equals 20 students playing hopscotch.)