Upper Elementary Place Value Games Yukon Pro D

John Felling
Zoom Webinar

Friday, November 20th, 2020
8:45 AM- 9:45 AM Yukon Time/Mountain Time

You Will Need: regular cards, regular six sided spotted dice, a printout of this pdf handout

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Place Value You Tube Links
BoxCarsEducation Channel

Using Red Solo Cups for Place Value (10s and 1s)

https://youtu.be/xkx2OKuPYeo

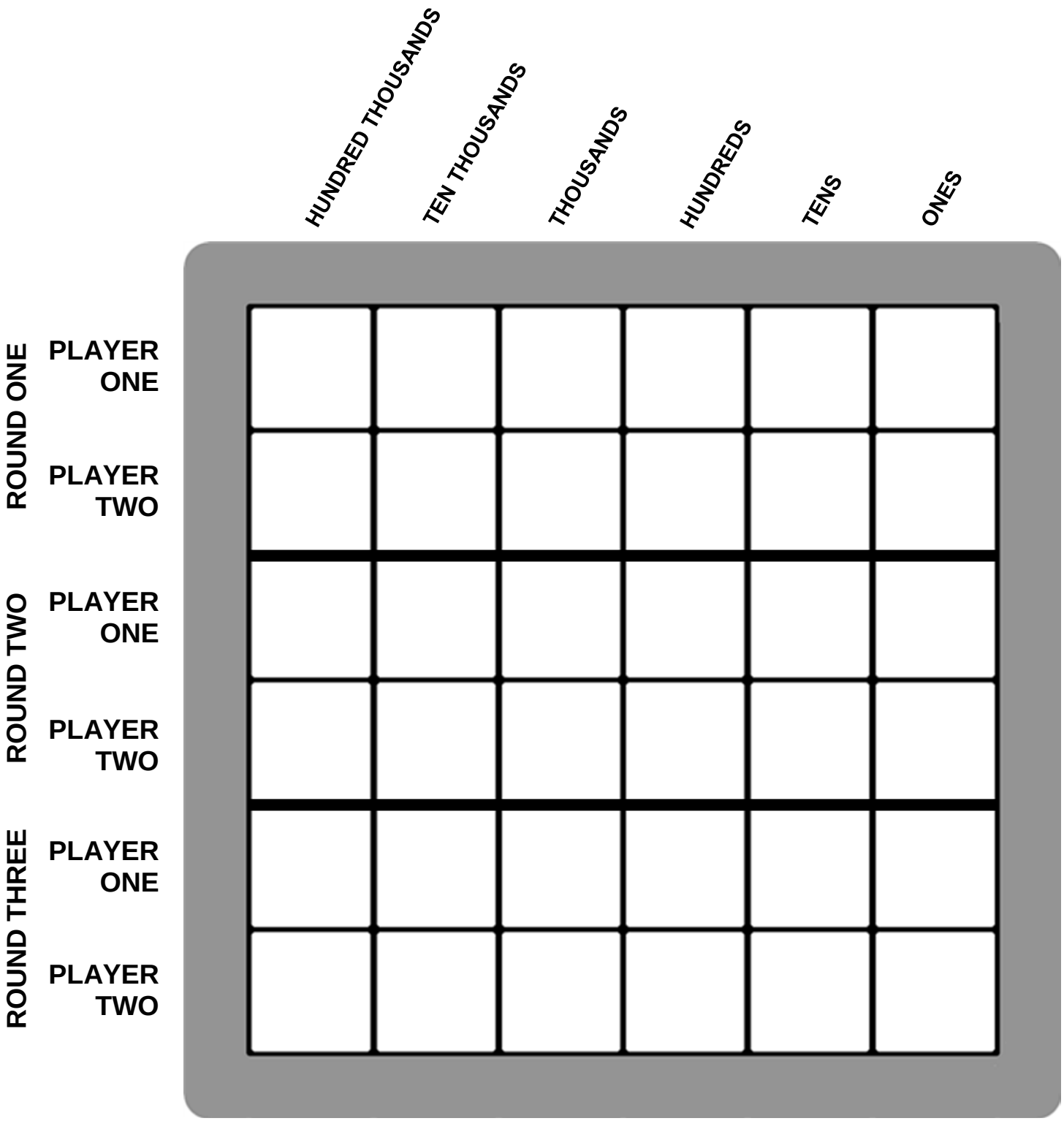
Using Number Lines for Place Value, Rounding and Mental Math

https://youtu.be/BHCfTFxeKQU

Using Red Solo Cups for Subtraction with decomposing (borrowing)

https://youtu.be/TnekAceVxsg

ROLL ON PLACE VALUE



The goal of the game is to create the largest number. Players take turns rolling a die, placing it into the tray and announcing it's place value for that roll. After 6 rolls, players compare numbers. A point is earned by the player with the largest number. A Place Value Systems die is rolled to identify a specific place value (for example 100's) . A second point is earned by the player with the highest place value in that place. A third "upside down bonus point" is awarded to the player with the biggest number when the tray is rotated 180 degrees and the numbers are compared.

Roll On Place Value

Follow Up Questions

Players _____

Date _____ Grade(s)_____

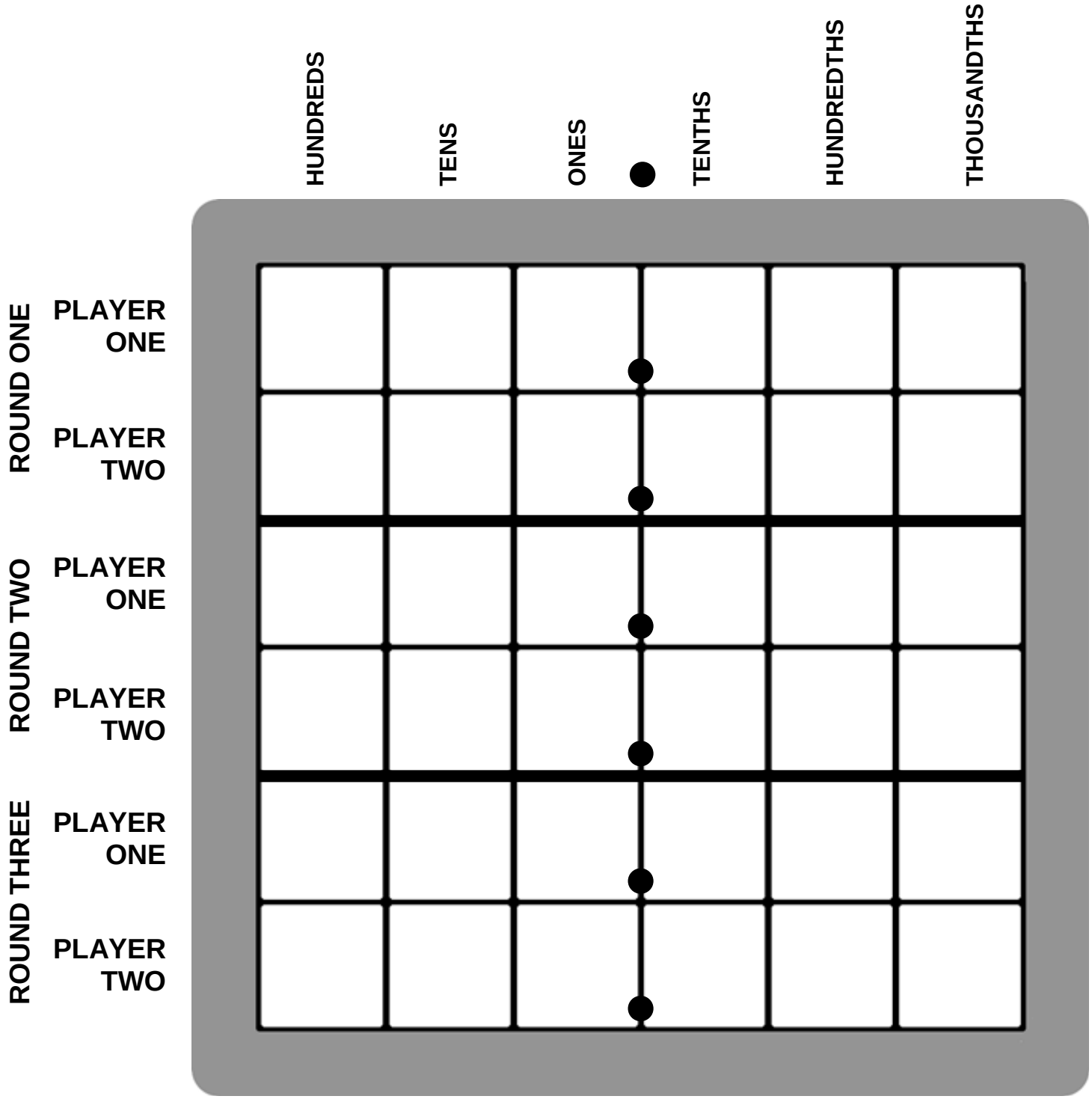
What Version did you play?_____ (up to 1000s or 100,000s or decimal etc)

What did you think of when figuring out where to place each die (ie what was your strategy)?

	Draw a picture of your game when two rolls/player are left. With two rolls left, which player do you think has the best chance to win the game AND why do you think that?
What would have to happen for the other player to win?	
	Draw a picture of your game when one roll/player are left. With one roll left, which player do you think has the best chance to win the game AND why do you think that?
What would have to happen for the other player to win?	

Player One's Number	**> = <**	Player Two's Number

ROLL ON PLACE VALUE
WHOLE/DECIMAL VARIATIONS



PLACE VALUE TEACHING TIPS

Dice are great resource manipulatives for introducing, practicing and extending place value concepts, including:

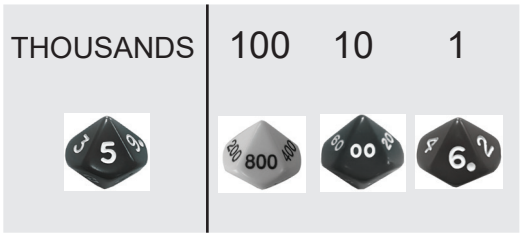
- comparing 10's - 1's
- comparing 100's - 10's, 1's
- comparing numbers up to thousands
- expanding and rounding numbers
- reading numbers properly
- extending groups of place value to written standard form

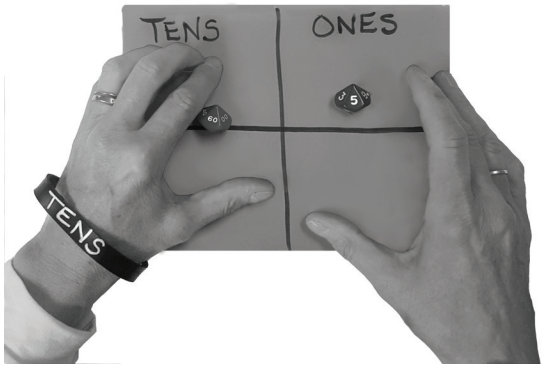
The following teaching notes will help maximize learning for your students:

1. Have players always sit side-by-side when working with place value concepts. This will help ensure they are reading numbers correctly and will allow for comparing numbers properly.

2. Have students play on place value mats when necessary to provide the proper language/ vocabulary and building numbers properly from left to right. Fun Foam sheets purchased from dollar stores or craft sections of large retail stores work great.

3. Use plastic wrist bands, inexpensively found at dollar stores, to help students with the language. Ensure wrist band is on the correct hand.

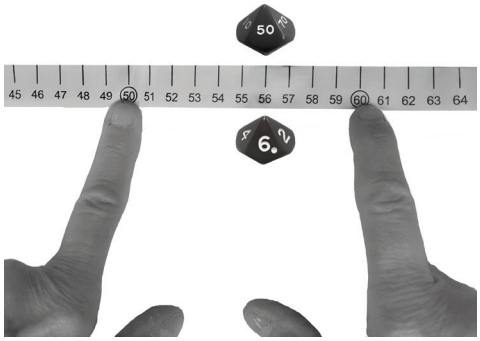




PLACE VALUE TEACHING TIPS

4. Use the reproducible gameboards if indicated in the rules. They have the place value vocabulary right on them, lending support to those students still needing structure with place value concepts.

5. Remember - Base Ten Place Value Manipulatives should be used to support the games when students need more concrete experience with place value.



Shown is 5 tens, 6 ones, closest to the benchmark of 60 and would be rounded to 60.

6. 0-100, 0-1,000 number lines can also be used to support learning.

We tape together ten "1-100" number lines using clear packing tape to join. We write on the number line 100, 200, 300…..1,000 for reference. In the sample, 600 is shown.

Jane is standing on benchmarks 600 and 700 to round to nearest 100.

PLACE VALUE TEACHING TIPS

7. Dice and cards can both be used for building, comparing and teaching the > < signs.

6,379

6,426

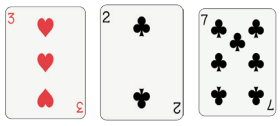
Point to the smaller number

6,379

<

6,426

Draw the arrow (> < sign).



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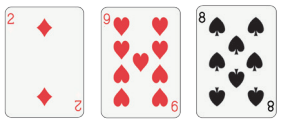
Point to the smaller number



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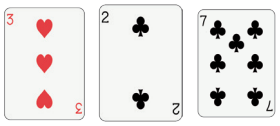

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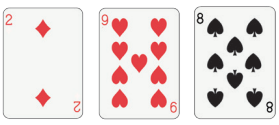

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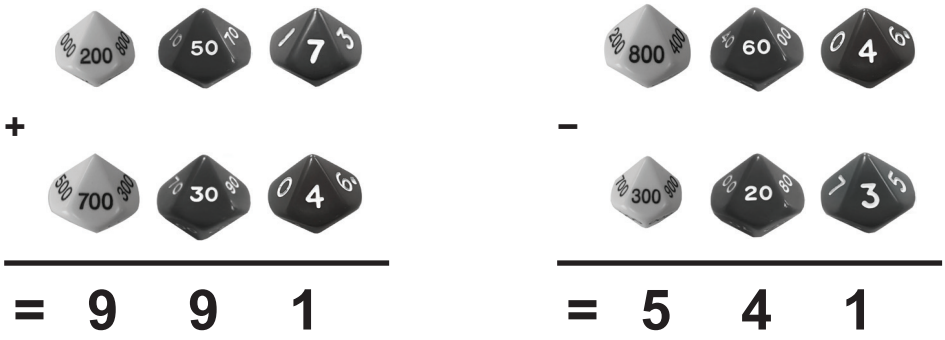
Draw the arrow (> < sign).

8. 10-sided place value dice line up easily for multi-digit operations.



+ 700 30 4

= 9 9 1

– 300 20 3

= 5 4 1

Human Number Line Activities

-> Hand students lanyards (randomly) and instruct them to create a number line. [They will have to figure out what their number is, decide where they belong, and find who they should stand next to or in between.]

-> Counting on: After students have created a number line, hand a single card to a student in the class that is NOT part of the number line. They will have to find the number EQUAL to their number (give them a high five and say "equal to") and count on (1, 2 or 3 more) and then shoot off of the number line back to their spot. ***Example:*** *Hand student the number 3. They will walk up to the number 3 in the human number line, say "three, equal to!" give a high five then take one step to be in front of the 4, saying "four" and then another step to 5 saying "five." Then shoot back to their spot.*

-> Guesstimate: After students have created a number line, hand a single card to a student in the class that is NOT part of the number line. The number must be kept a secret from the student you are handing it to. They will put the number on their forehead where the human number line students can see but they cannot. They must walk up to a student in the number line and ask, "Is my number greater than (giving a thumbs up), less than (giving a thumbs down), or equal to (giving a flat hand) your number?" The student will answer and this will wipe out part of the number line. Students that are no longer options based on the answer will either sit down or turn their numbers around backwards to eliminate the distraction of those choices. This process will continue until they discover their match.

-> Open Number Line: Hand only two students a card (example: 0 & 10) to create an open number line. Hand a single card to another student and ask them where their number would be on the number line. After they have positioned, ask the class if they agree with the location.(class may tell them to scoot a little one way or the other.☺)Continue the process with as many other numbers as desired. After all desired students are positioned ask the two end numbers to take two big steps out. Now ask the placed numbers if they need to reposition. Ask students what strategies they used to decide where to stand.

DON'T FORGET MATH TALK!!!!

They must say what they are doing, it is SO important!

Rounding Recording Sheet

Turn	Rolled	Standard	Rounded To 10's	Rounded to 100's	Notes
example	400 , 20 , 7	427	430	400	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

BETWEENERS & CUBIC MYSTERY
RECORDING SHEET

PLAYER	ROLL	NUMBER
		◯
		◯
		◯
		◯

PLAYER	ROLL	NUMBER
		◯
		◯
		◯
		◯

PLAYER	ROLL	NUMBER
		◯
		◯
		◯
		◯

PLAYER	ROLL	NUMBER
		◯
		◯
		◯
		◯

PLAYER	ROLL	NUMBER
		◯
		◯
		◯
		◯

PLAYER	ROLL	NUMBER
		◯
		◯
		◯
		◯

PLAYER	ROLL	NUMBER
		◯
		◯
		◯
		◯

PLAYER	ROLL	NUMBER
Jaxon	6, 4, 3	346 (between wins)
Tenshima	2, 3, 3	332 (lowest no win)
Raymond	4, 6, 3	436 (highest no win)

Follow Up Activity: Have students space their answers proportionally on an "open" number line and justify their placement to the other players.

Batters Up!

Skills: Place Value to 100 000s, Addition with Expanded Notation

Equipment: Cards 0-9. Place Value System die, paper/pencil

Goal: Greatest <u>total sum</u> after ten rounds wins

Getting Started:

Each player builds a number in the 100 000s with their cards

Build in order from 100 000s place to 1s place (Example 230 516)

Each player reads their number to the other players.

One player rolls the PV System die and calls out the place value

Players identify the value at that place value in their number (this is their score for the round) and record their score for that round. Example: **ten thousands** is rolled, 3 is in the 10 000s place, score for that round is 30 000

Play 10 rounds, (rotate roller) then total your score.

BATTERS UP!

Round	Number	Roll	Value/Points/Score					
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

Total Score =

What's My Number

Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	My Number

- Use 0-9 Dice
- Roll and then record on sheet to build number. Compare numbers with opponent at end of round. Largest number wins.
- For 3 players, the between number wins (ie not largest or smallest)
- Randomly choose specific place value, compare with opponent. Largest number wins.

What's My Number Decimals

Hundred Thousands	Ten Thousands	Thousands	Hundred	Tens	Ones	Tenths	Hundredths	Thousandths	My Number

- Use 0-9 Dice
- Roll and then record on sheet to build number. Compare numbers with opponent at end of round. Largest number wins.
- For 3 players, the between number wins (ie not largest or smallest)
- Randomly choose specific place value, compare with opponent. Largest number wins.

PLACE VALUE 100'S SKILLS CHECKLIST

Name	Recognizes 100 as a unit	Mentally adds or subtracts 10, and 100 from a three-digit number	Describes any three-digit number in terms of its value in ones, tens, hundreds	Represents any three-digit number pictorially	Decomposes any three-digit number pictorially	Records standard and expanded form 626 = 600 + 20 + 6

SKILLS CHECKLIST DECIMAL PLACE VALUE UPPER ELEMENTARY

NAME	Reads decimal numbers to hundredths and 0.01	Reads decimals = or < than 0.001 thousandths	Understands relationship of fractions / decimals 3/10 = 0.3 365/1000 = 0.365	Identify specific place value of a grade level appropriate decimal	Round to nearest 0.1s, 0.01s, 0.001s etc decimal place	Correctly order numbers with or without decimals from least to greatest

SKILLS CHECKLIST WHOLE NUMBER PLACE VALUE UPPER ELEMENTARY

NAME	Read whole numbers up to 100,000	Read whole numbers 1,000,000 and greater	Identify value of digit in any specific place value	Can round whole numbers to closest 10s 100s 1000s etc place	Correctly order whole numbers from least to greatest	Records standard and expanded form 626 = 600 + 20 + 6 of whole numbers up to and beyond 100,000

POWERFUL TENS GAMEBOARD

X (1 000 000)	X (100 000)	X (10 000)	X (1000)	X (100)	X (10)	X (1)
(millions)	(hundred thousands)	(ten thousands)	(thousands)	(hundreds)	(tens)	(ones)

POWER OF TEN

10^6 =	10^5 =	10^4 =	10^3 =	10^2 =	10^1 =	Player Note: Any non-zero number to the power of 0 equals 1. Therefore $10^1 = 1$ =

EXPANDED FORM

WRITTEN FORM

POWERFUL TENS "MENTAL MATH" RECORDING SHEET

	$\times\ 10^6$	=	______
	$\times\ 10^5$	=	______
	$\times\ 10^4$	=	______
	$\times\ 10^3$	=	______
	$\times\ 10^2$	=	______
	$\times\ 10^1$	=	______
	$\times\ 10^0$	=	______

	$\times\ 10^6$	=	______
	$\times\ 10^5$	=	______
	$\times\ 10^4$	=	______
	$\times\ 10^3$	=	______
	$\times\ 10^2$	=	______
	$\times\ 10^1$	=	______
	$\times\ 10^0$	=	______

	$\times\ 10^6$	=	______
	$\times\ 10^5$	=	______
	$\times\ 10^4$	=	______
	$\times\ 10^3$	=	______
	$\times\ 10^2$	=	______
	$\times\ 10^1$	=	______
	$\times\ 10^0$	=	______

	$\times\ 10^6$	=	______
	$\times\ 10^5$	=	______
	$\times\ 10^4$	=	______
	$\times\ 10^3$	=	______
	$\times\ 10^2$	=	______
	$\times\ 10^1$	=	______
	$\times\ 10^0$	=	______

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What do you notice?

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Orders $60.01 to $125.00 add 18% + 6.00
Orders $125.01 to $300.00 add 15% + 6.00
Orders $300.01 to $649.99 add 13% + 6.00
Orders over $650.00 add 12% + 6.00
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