NWMC 2022
Tacoma, Washington

Power Play
Place Value Games

Presented by John Felling

Saturday, October 15th,
9:00 AM - 10:30 AM
Convention Center Room 318

BOX Cars & One-Eyed Jacks

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PLACE VALUE TEACHING TIPS

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

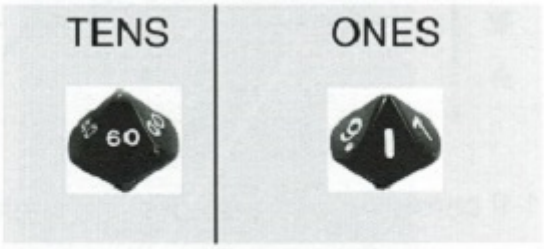
- comparing 10's - 1's
- comparing 100's - 10's, 1's
- comparing numbers up to thousands
- expanding and rounding numbers
- reading numbers properly
- extending groups of place value to written standard form

400 + 90 + 2 =

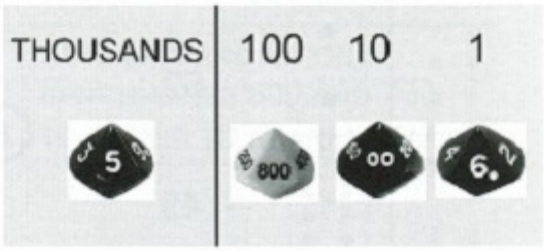
The following teaching notes will help maximize learning for your students:

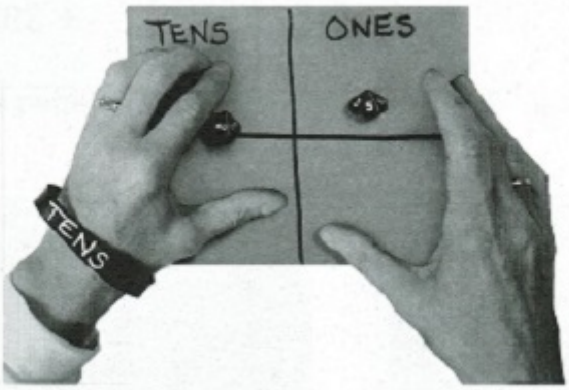
1. Have players always sit side-by-side when working with place value concepts. This will h ensure they are reading numbers correctly and will allow for comparing numbers properl

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.

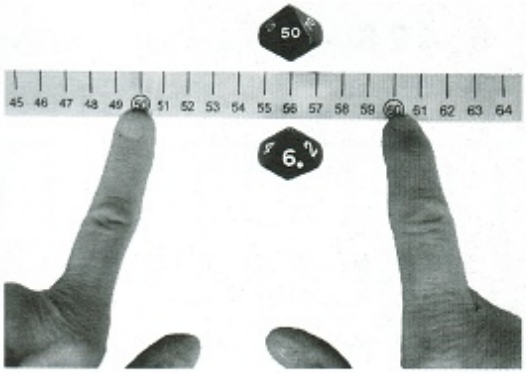




PLACE VALUE TEACHING TIPS

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.

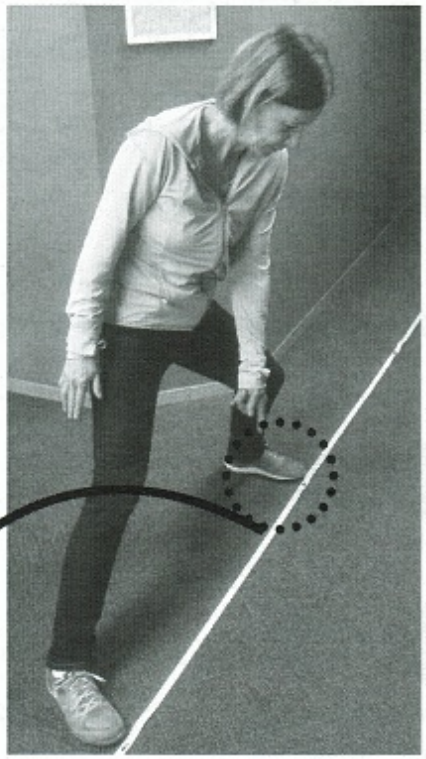
5. Remember - Base Ten Place Value Manipulatives should be used to support the games when students need more concrete experience with place value.



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.

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					

PLACE VALUE FACE OFF RECORDING SHEET I

MY NUMBER		> < =	MY PARTNER'S NUMBER		DIFFERENCE
TENS	ONES		TENS	ONES	

PLACE VALUE FACE OFF RECORDING SHEET II

MY NUMBER			< > =	MY PARTNER'S NUMBER		
HUNDREDS	TENS	ONES		HUNDREDS	TENS	ONES

WHO'S IN BETWEEN?

LEVEL: Grade 1-2

SKILLS: place value to 100, between

PLAYERS: 2

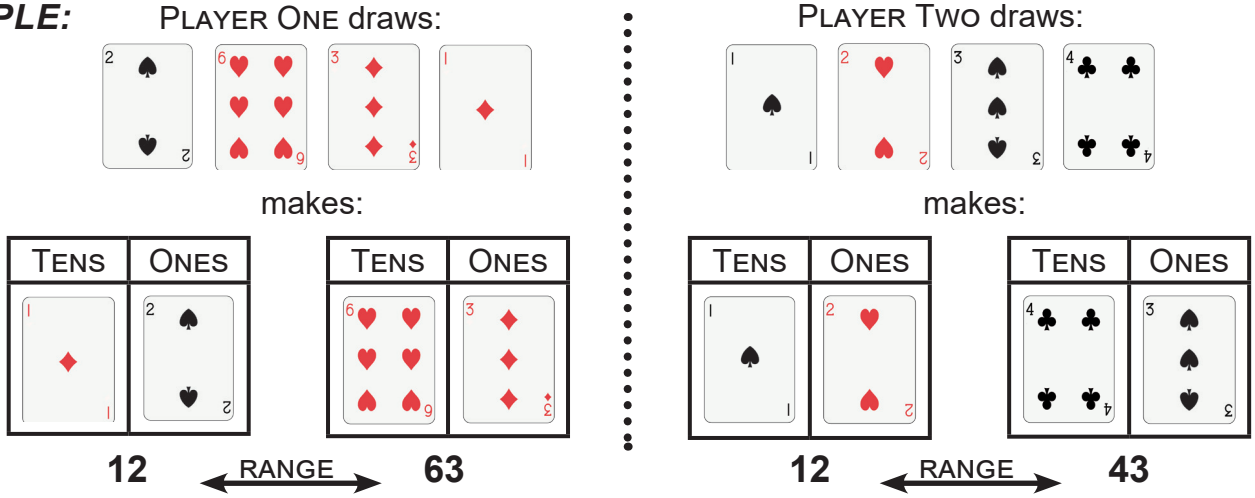
EQUIPMENT: cards (K=0, Ace=1) - 9, place value mats, 0-100 number lines

GOAL: to build a two-digit number that fits in the established range

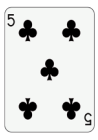
GETTING STARTED:

***STEP ONE*:** Each player draws four cards to create two, two-digit numbers. Using the place value mat, have players build the greatest possible and least possible numbers with the cards, in order to create the greatest possible spread (DIFFERENCE) between the two numbers.

EXAMPLE:



STEP TWO: After players have made their two numbers, only two more cards are turned over for both players to use. The first card is the tens number, the second card is the ones number. Players now check to see if this two-digit number falls BETWEEN the two numbers they have made in Step One. Players score a point if it falls between the two they have made.

Turn over  and  create 52.

Fifty-two fits between twelve and sixty-three. Player One scores a point. Fifty-two does not fit between twelve and forty-three so Player Two does not score for this round.

Players draw four new cards and make two new two-digit numbers, again trying to create the greatest difference as possible between the two. Two new cards are turned over for comparison. The first player to reach twenty points is the winner.

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.

Variations: Mixed Operations, Decimals, Co-efficient of X

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

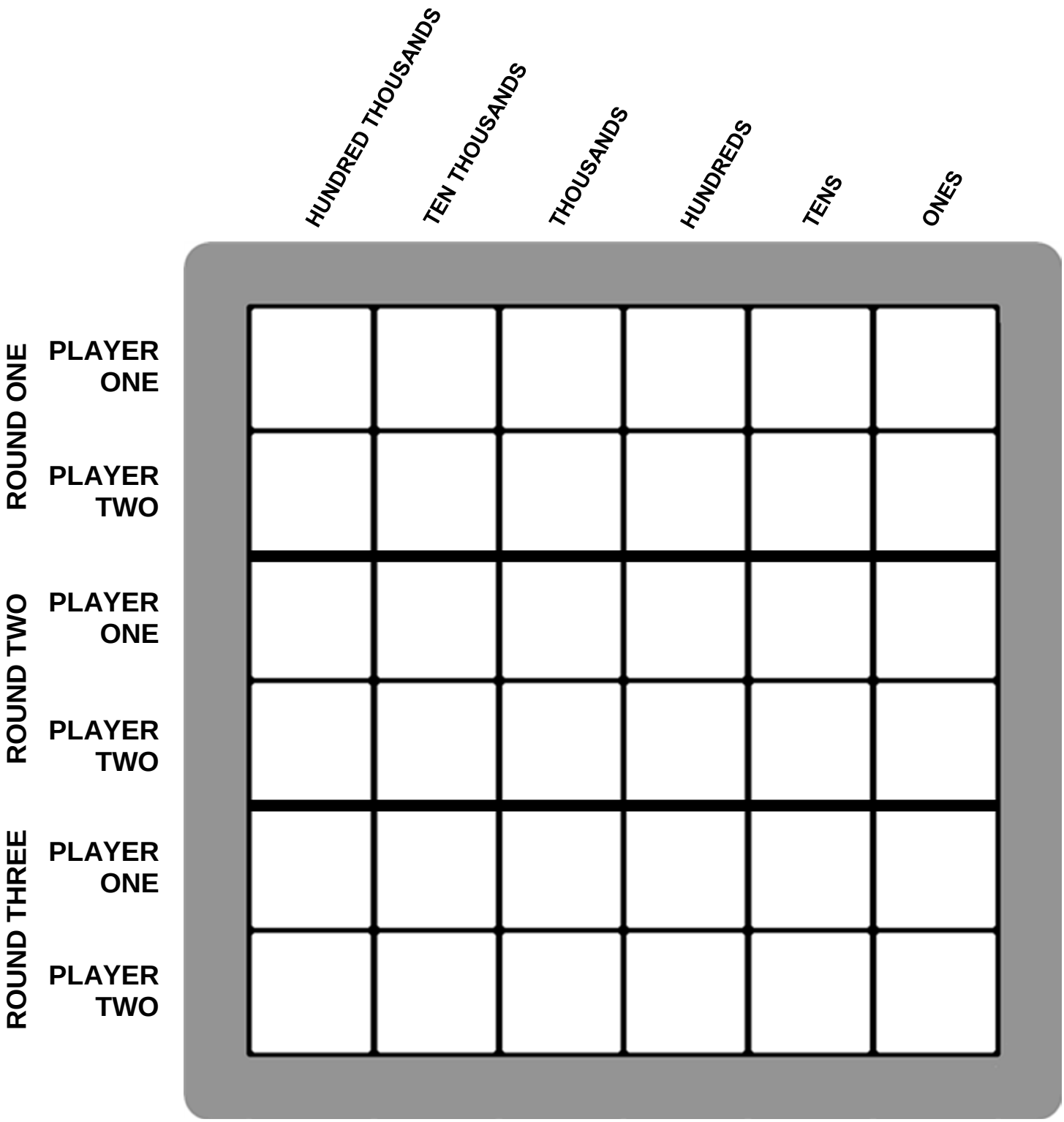
Play 10 rounds, (rotate roller) then total your score.

BATTERS UP!

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

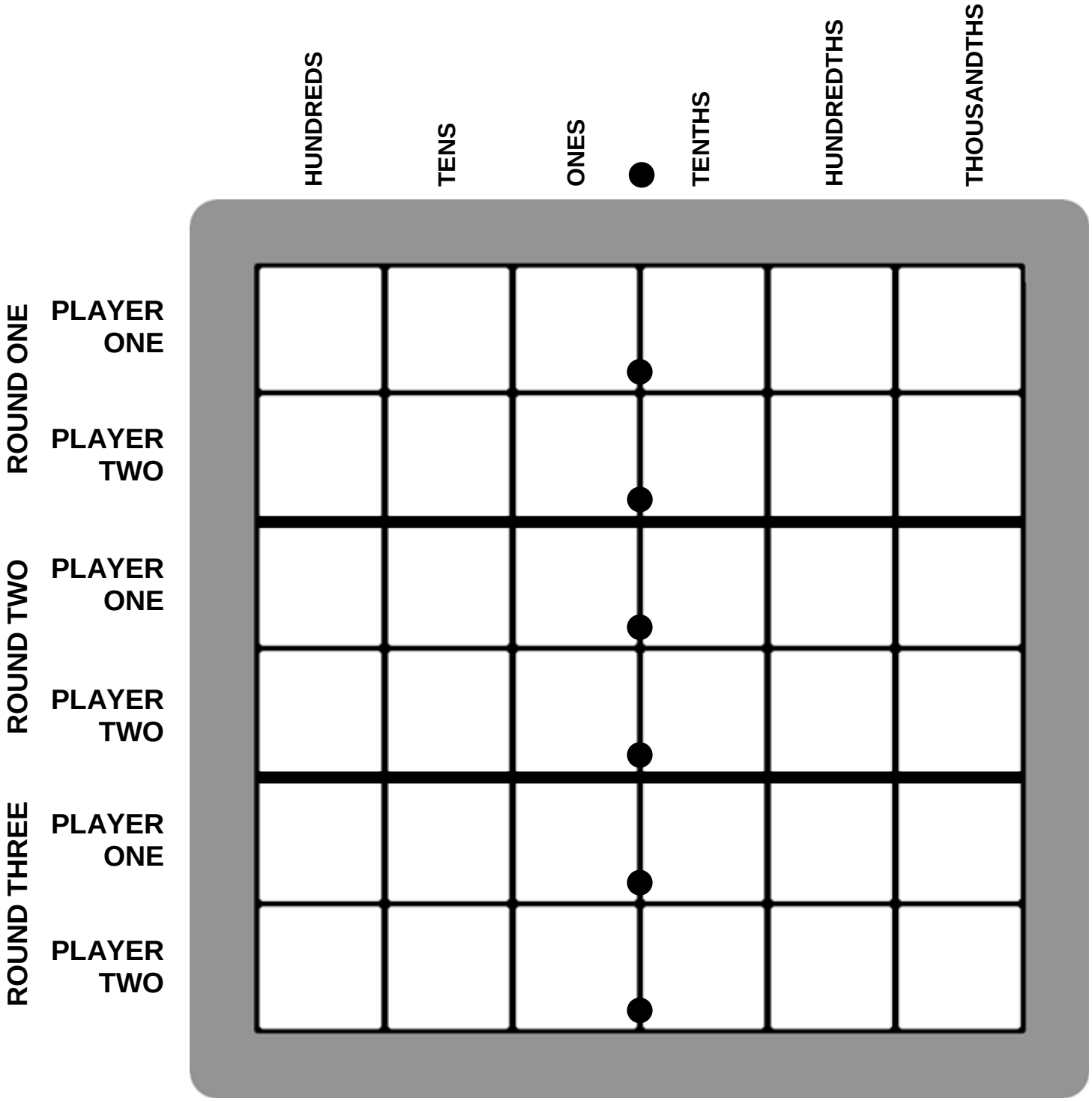
Total Score =

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 – DECIMALS



MILLIONS MAMBO

LEVEL: Grade 4 and up

SKILL: naming numbers to millions, comparing numbers, expanded notation

SET UP: horizontal only, 1 die per slot, 1 shaker per student or pair

PLAYERS: 2 (cooperative pair)

GOAL: to read, compare and expand numbers up to the millions

GETTING STARTED:

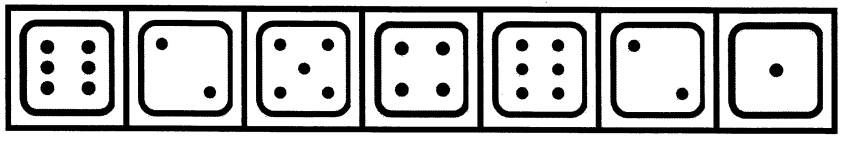
Players will use their shakers to build numbers with values into the millions.

Each student needs their own shaker. Partners both shake their containers until 

is called. Players hold their shakers horizontally and read their numbers out loud to each other. See chunking strategies found on page 33 if students are having difficulty with this.

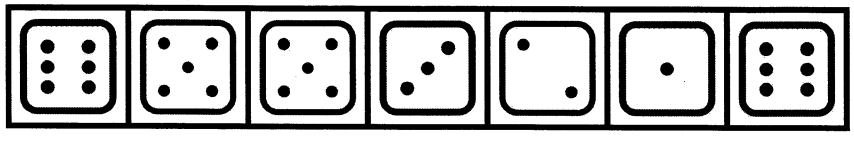
EXAMPLE:

Player One

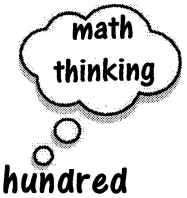


Six million, two hundred fifty-four thousand, six hundred twenty-one

Player Two



Six million, five hundred fifty-three thousand, two hundred sixteen

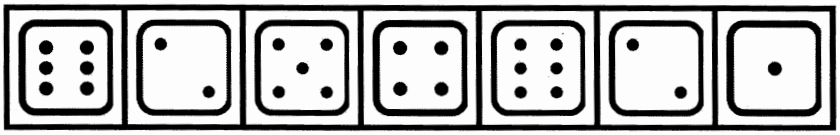


Players then compare their numbers by covering up and sliding down their shakers, verbalizing, "Player Two's number is greater by about three hundred thousand".

MILLIONS MAMBO

FOLLOW UP ACTIVITIES:

1. The container can help students see and practice expanding numbers to the millions. Have students shake and place their number down.



Touch 6, say 6 million, touch the slots one at a time heading to the end of the shaker.

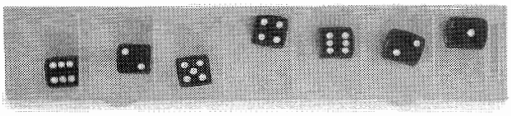
Six million has ... 1, 2, 3, 4, 5, 6 zeros.

Touch 2. Two hundred thousand has ... 1, 2, 3, 4, 5 zeros etc.

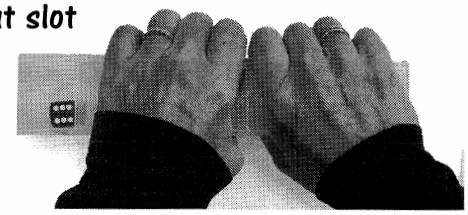
The slots represent each zero that specific place value has in it.

6 000 000 + 200 000 + 50 000 + 4000 + 600 + 20 + 1 = 6 254 621

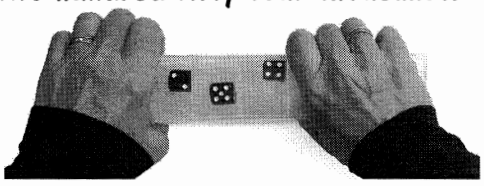
Step One: Shake to create number.



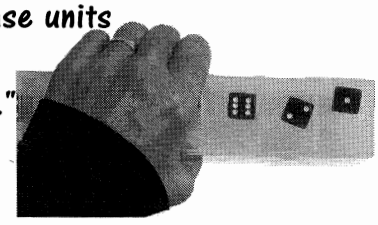
Step Two: Cover all but slot representing millions. "Six million.."



Step Three: "Chunk" the three numbers representing thousands "two hundred fifty-four thousand.."



Step Four: "Chunk" the three numbers representing base units (100's, 10's, 1's) "six hundred twenty-one."



SHAKE	NUMBER	EXPANDED NUMBER
1	6 3 6 2 5 4 5	6,000,000 + 300,000 + 60,000 + 2000 + 500 + 40 + 5
2	3 6 4 4 6 5 3	3,000,000 + 600,000 + 40,000 + 4,000 + 600 + 50 + 3
3	4 1 1 5 3 3 3	4,000,000 + 100,000 + 10,000 + 5,000 + 300 + 30 + 3

BoxcarsEducation YouTube Videos Links

Upper Elementary Math Games with Cards

Red Solo Cups Explaining Place Value to 10s and 1s

https://youtu.be/xkx2OKuPYeo

Red Solo Cups are used to help students understand 10s and 1s place value. Shows ten ones are embedded in each 10s place ie 10s are composed of ten 1s

Red Solo Cups Addition without Regrouping (no carrying)

https://youtu.be/RQICNm5Ayhg

Red Solo Cups are used to help students understand what is happening mathematically when they add multi-digit numbers.

Red Solo Cups Addition with Regrouping (carrying)

https://youtu.be/60kKnd0g3yw

Red Solo Cups are used to help students understand what is happening mathematically when they add multi-digit numbers that involves "carrying" or regrouping.

Red Solo Cups Subtraction with Decomposing (borrowing)

https://youtu.be/TnekAceVxsg

Red Solo Cups are used to help students understand what is happening mathematically when they subtract multi-digit numbers that involves having to "borrow" or decompose.

Red Solo Cups Subtraction using Rounding/Compensating

https://youtu.be/K2ugufwZMuE

This video demonstrates how rounding and then compensating may be a more efficient way for students/ general public, to perform simple subtraction problems.

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		Grand Total (Pay this amount)	

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Orders $300.01 to $649.99 add 13% + 6.00
Orders over $650.00 add 12% + 6.00
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