



**MULTISIDED  
DICE  
INCLUDED**

**PLACE VALUE GAMES FOR KIDS**



**box cars  
and**

**one-eyed jacks®**

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# Mac's Midway Challenge

**Level:** Grade 4 and up

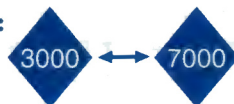
**Skills:** Place value, subtracting 4-digit numbers, estimating

**Players:** 2

**Equipment:** Two thousands dice, cards (Ace = 1) - 9

**Getting Started:** The goal of the game is to be the player who builds a number closest to the midway point after two thousands dice are rolled. To begin, the two 1000's dice are rolled. Re-roll any doubles.

**Example:**



The players must now build a number that falls "midway" between these two numbers. Players can determine this midway "benchmark number" any number of ways. For example:  $3000 + 7000$ , divided by  $2 = 5000$  "about midway", OR order the numbers from the least to the greatest:  $3000 - 4000 - 5000 - 6000 - 7000 \rightarrow 5000$  "about midway" (or the median).

Players now alternate turns drawing one card at a time. Players must place the card into either their thousands, hundreds, tens or ones place value. Once a card is placed down into a place value it cannot be moved. When both players have placed all four cards down, players determine by using subtraction, which number is closest to the "midway benchmark". The player closest to, collects their opponent's cards.

**Example:**

**Player One**  
(aiming for around 5000)

Draw **5** place in Thousands

Draw **8** place in Ones

Draw **5** place in Tens

Draw **7** place in Hundreds

$$\begin{array}{r} 5758 \\ -5000 \\ \hline 758 \end{array}$$

<u>5</u>	<u>7</u>	<u>5</u>	<u>8</u>
Th.	H.	Tens	Ones

Player One is 758 from Midway Benchmark

**Player Two**  
(aiming for around 5000)

Draw **8** place in Tens

Draw **1** place in Hundreds

Draw **3** place in Ones

Draw **4** place in Thousands

$$\begin{array}{r} 5000 \\ -4183 \\ \hline 817 \end{array}$$

<u>4</u>	<u>1</u>	<u>8</u>	<u>3</u>
Th.	H.	Tens	Ones

Player Two is 817 from Midway Benchmark

**Player One collects all of the cards**

# You're Number One!

**Level:** Grade 5 - 9

**Skills:** Decimal place value, adding and subtracting decimals, probability

**Players:** 2

**Equipment:** One each of tenths, hundredths, thousandths dice, gameboard (see reproducibles), pencil

**Getting Started:** The goal of the game is to get as close to 1.0 in 5 rolls. Player One begins by rolling all three dice and recording their number onto their gameboard. Player Two now takes their turn. On each subsequent turn players must decide which dice they want to roll; one of each die (tenths, hundredths and thousandths) or a combination of these dice. A player must roll and complete all five rounds.

## Player One

Chooses  
to roll  
.00 and  
.000  
only

	Tenths	Hundredths	Thousandth	Accumulative Total
Roll 1	5	4	6	.546
Roll 2	0	7	7	+.077 = .623
Roll 3	-	5	5	+.055 = .678
Roll 4	-	8	4	+.084 = .762
Roll 5	-	7	5	+.075 = .837

**Difference**  $1.0 - .837 = .163$

## Player Two

Chooses  
to roll  
.00 and  
.000  
only

	Tenths	Hundredths	Thousandth	Accumulative Total
Roll 1	6	5	0	.650
Roll 2	-	1	6	+.016 = .666
Roll 3	-	7	8	+.078 = .744
Roll 4	-	2	1	+.021 = .765
Roll 5	-	9	6	+.096 = .861

**Difference**  $1.0 - .861 = .139$

10

At the end of five rolls players calculate which number is closest to 1. The player closest to 1.0 earns 5 points for the round. Player Two earns 5 points for being closer to 1.0.

# Place Value Patterns

Students typically begin pattern work in the early primary grades and it often remains a challenge throughout their elementary years. Pattern counting is an excellent way to practice place value and explore number patterns. When doing this activity with students, it is best to go through several examples, and allow for plenty of practice.

## To Model:

**Roll a decade die (00-90) and a ones (0-9) die. Example:  $60 + 8 = 68$**

Players now verbalize a plus (+) 1 pattern 68, 69, 70, 71.

Players now verbalize a minus (-) 1 pattern 68, 67, 66, 65.

Players now verbalize a plus (+) 2 pattern 68, 70, 72, 74.

Players now verbalize a plus (+) 10 pattern 68, 78, 88, 98.

Players now verbalize a plus (+) 5 pattern 68, 73, 78, 83.

Any additional numeric patterns can be introduced once the students are ready. Using a hundreds board with this activity may be beneficial as students will begin to see and understand the patterns that appear. This will extend into addition and subtraction strategies once 2-digit concepts are introduced.

Once players have mastered these patterns, more complex scenarios can be introduced and practiced.

**Roll a hundreds die (000-900), decade die (00-90) and a ones die (0-9). Example:  $300 + 20 + 4 = 324$**

Players now verbalize a plus (+) 1 pattern 324, 325, 326, 327

Players now verbalize a plus (+) 10 pattern 324, 334, 344, 354

Players now verbalize a minus (-) 10 pattern 324, 314, 304, 294

Players now verbalize a plus (+) 50 pattern 324, 374, 424, 474

Players now verbalize a minus (-) 50 pattern 324, 274, 224, 174

The bonus to students rolling dice is that combinations will come up where they must make logical predictions and expand their knowledge of number sense.

These place value activities can be explored using decimal dice, as well. **Teaching Tip:** Players can record all of their patterns for future practice.

