

Partner or Group
Difficulty: Varies
Operations: Place Value
Time: Varies (allow 15 minutes)

Place Value Dice Challenge

OBJECTIVES: To create numbers with varied place values

MATERIALS: (each player)

5 dice
1 penny to use as place holder for the number zero ('0')
Tally paper and pencil

Leader needs:

Cardboard shield to block others from seeing what is rolled.
Stopwatch

The game has three levels of difficulty:

Easy game: rolls 3 dice plus penny to make 2-digit number

Medium difficult game: rolls 4 dice plus penny to make 3-digit number
With a 4-digit challenge available

Most Difficult game: rolls 5 dice plus penny to make 4-digit, 5-digit or 6-digit number

GENERAL RULES:


1. Take turns being the leader. The leader selects the level of difficulty and rolls the dice behind a shield of paper to hide what is rolled.
2. The leader arranges the dice to make the place value challenge number. (Examples follow the rules.)
3. Next, the leader calls out the number to be created and sets the stopwatch for number of seconds allowed. The times varies for each level of difficulty.
4. All players roll their dice, saving any numbers that can be used to make the place value challenge.
5. When the allowed time ends, all players share their answers. Each correct answer earns 5 points.
6. At the end of 5 turns as leader, the person to the left of the current leader becomes the **new leader** and selects the place value numbers to be rolled.
7. The person(s) with the highest number of points when the game ends become a winner (More than 1 person may win each challenge.)

Easy game (10 seconds per challenge)




- a. Roll a 2-digit number **using 3 dice**. Use the penny for '0' as needed.

No place value numbers greater than '66' will be formed. Using the penny will allow '01-'06' to be created.

Example:  , etc

- b. The leader rolls 3 dice (and may also use the penny) to create a two-digit challenge number.
- c. The leader selects 2 dice (or 1 die + penny) to show the place value wanted for the challenge, such as '56' or '50'.
- d. The leader shares the number wanted and sets the stopwatch without showing the dice rolled.
- e. The leader shares the number wanted and sets the stopwatch without showing the dice rolled.
- f. Players may roll their dice as often as wanted within the 10 seconds. They save any die that can be used to make the challenge number
- g. Example: Player needs to roll '56'.
- h. Player rolls '3' and '5' and saves the '5' 
- i. Player rolls again and rolls '1' and '4' but they are of no use so the player keeps rolling until '6' is rolled (or time runs out).
- j. 5 points are given to each player who creates each place value challenge number correctly.

Medium Difficult Version (15 seconds per challenge)

- Roll a 3-digit number **using 4 dice**. Use the penny for '0' as needed.
- No place value numbers greater than '666' will be formed. Using the penny will allow '011' – '066' to be created.   , etc
- The leader rolls 4 dice (and may also use the penny) to create a three-digit challenge number.
- The leader selects 3 dice (or 2 dice+ penny) to show the place value wanted for the challenge, such as '560'.
- The leader shares the number wanted and sets the stopwatch without showing the dice rolled.
- Players may roll their dice as often as wanted within in the 15 second time limit. They save any die that can be used to make the challenge number.

Example: Player needs to roll 560

Player rolls '3', '5' and '1' and saves '5' .

Player rolls other dice again and again until a '6' is rolled, then the player adds the penny to represent the '0' before time runs out.

- 5 points are given to each player who creates each place value challenge number correctly.
- OPTION:** Check out the Maxi Game Variation for a greater challenge.

Maxi Game VARIATION

For a more challenging game, add this change: **Allow players to use ALL dice to create the place value challenge number. The time limit is unchanged.**

To do this, allow players to use TWO dice added together to represent one needed number. Example:

Player needs '560'. Rolls '3', '5', and '1'. Saves the '5' and rolls again.

Rolls '2', '4' and '1'. **Saves '2' and '4' (which equals '6')** and displays with the '0' (penny) as shown here:

Show as dice dots    This makes 5 6 0.



Added Rule: Players using this variation must justify (explain to the other players) how their choice of combining two dice creates the asked for number. If the number is correct, the player gains an extra 2 points for creative thinking making 7 points total for their turn.

Most Difficult Version (20 seconds per challenge)

- a. Roll a 4-digit number **using 5 dice**. Use the penny for '0' as needed.
- b. No place value numbers greater than 6,666 will be formed. Adding the penny will allow numbers to 60,666.
- c. The leader rolls 5 dice and may also add in the penny to create a 5-digit number for the place value challenge.
- d. The leader shares the number wanted and sets the stopwatch without showing the dice that were rolled.
- e. Players may roll their dice as often as wanted within the 20-second time limit. They save any die that can be used to make the challenge number. Example:

Player needs to roll 5604

Player rolls '4', '2', '1', and '2'.

Player saves "4", then rolls other dice again, trying for the needed '6' and '5'.
- f. Once the numbers are rolled, the penny (for '0') is added before the time ends.
- g. 5 points are given to each player who creates each place value challenge number correctly.

Or

Use the Maxi Game Variation for a greater challenge. The idea presented, extends possible combinations to 90,666 by allowing ONE double up of dice to create ONE number above six in the place value challenge.

OPTIONS:

* The first person to create the requested place value number winds 5 points. Other players receive one point for building the correct number before the time ends on each turn.

* Use up to 10 dice to allow **for multiple chances to make numbers above '6'** by using two dice to equal the numbers '7', '8', and '9'. Adding the penny as '0', adds more possible place value numbers. Extend the playing time for rounds that ask for larger place value numbers to be created.

* Use 10-sided or 12-sided dice to create super numbers. Extend the playing time and the way the place value numbers are shown. (For example when using two, 12-sided dice : roll a 12 on one die and a 9 on another. That may equal many different place value numbers, including

12 and 9 ($12+9= 21$) 21 and 9 ($21+9= 30$), (129), (921), (219) etc.

OR it may equal 9 and 12 as 2 dice added

| |
|---|
| 9 |
|---|

 to equal 21.

| |
|----|
| 12 |
|----|