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PRESENTS

# PLINKO

DAOplinko is a DAO blockchain casino game which we are proposing be built for the ICONBet platform. It is a spin on one of the most popular games in game show history. The game is played on a vertical board populated with offset rows of pegs. The player chooses one of six columns on the top of the board, drops the ball into it, and watches as the ball bounces down the board. The ball eventually ends up at the bottom row, with the ending column determining the prize or the ever popular 0 bomb buckets.

The game has 3 different boards configurations to choose from which will change the probability and payouts of the landing buckets. However, on release we may only release 1 of the board configurations on the UI and release the other 2 at a later stage.

On the next page there are tables that illustrates the payout/probability and house edge of DAOplinko. Each bet a random number is generated between 0-42. The result of the RNG determines the landing bucket based on the below number ranges.

## Normal Game

### Board Configuration 1:

BET	10						TOTAL GAMES		
PRIZE	25	5	50	0	15	10	43	430	TOTAL WAGERS
PROBABILITY	4	10	1	10	8	10		420	RETURN TO PLAYER
WINNINGS	100	50	50	0	120	100		2.33%	HOUSE EDGE
Bucket Range	19-22	10-17	18	0-9	23-32	33-42			

**Winnings** = Prize \* Probability

**House Edge** = Return to Player / Total Wagers =  $\frac{420}{430} * 100 = 97.67\%$  or 2.33%

### Board Configuration 2:

BET	10							TOTAL GAMES		
PRIZE		10	50	0	0	50	10	43	430	TOTAL WAGERS
PROBABILITY		11	2	8	9	2	11		420	RETURN TO PLAYER
WINNINGS		110	100	0	0	100	110		2.33%	HOUSE EDGE
Bucket Range		0-10	11-12	13-20	21-29	30-31	32-42			

**Winnings** = Prize \* Probability

**House Edge** = Return to Player / Total Wagers =  $\frac{420}{430} * 100 = 97.67\%$  or 2.33%

### Board Configuration 3:

BET	10							TOTAL GAMES		
PRIZE		15	35	4	5	20	13	43	430	TOTAL WAGERS
PROBABILITY		8	1	12	11	3	8		422	RETURN TO PLAYER
WINNINGS		120	35	48	55	60	104		1.86%	HOUSE EDGE
Bucket Range		0-7	8	9-20	21-31	32-34	35-42			

**Winnings** = Prize \* Probability

**House Edge** = Return to Player / Total Wagers =  $\frac{422}{430} * 100 = 98.13\%$  or 1.86%

## Side Bet

Side bet is a much simpler concept. A player picks what landing bucket the ball will land in from the 6 choices given to them. The probability is determined by what board configuration the player chooses. For example, if a player picks Board configuration 1 and then selects bucket number 3 there is a  $\frac{1}{43}$  chance of landing on that bucket. The calculation for the payout for this is based on a 5% edge.

Here are the multipliers for each board configuration:

Board Config 1 Multiplier	10.2125	4.085	40.85	4.085	5.10625	4.085
Probability	$\frac{4}{43}$	$\frac{10}{43}$	$\frac{1}{43}$	$\frac{10}{43}$	$\frac{8}{43}$	$\frac{10}{43}$
Board Config 2 Multiplier	3.7136	20.425	5.106	4.538	20.425	3.7136
Probability	$\frac{11}{43}$	$\frac{2}{43}$	$\frac{8}{43}$	$\frac{9}{43}$	$\frac{2}{43}$	$\frac{11}{43}$
Board Config 3 Multiplier	5.106	40.85	3.404	3.7136	13.616	5.106
Probability	$\frac{8}{43}$	$\frac{1}{43}$	$\frac{12}{43}$	$\frac{11}{43}$	$\frac{3}{43}$	$\frac{8}{43}$

Example calculation for multiplier of Board Configuration 1 - first bucket is

$\frac{95}{P} = 95 / (\frac{4}{43}) = 10.2125$ . Same calculation can be applied to the rest of the multipliers.

### **Max Bet (Normal)**

The highest payout on a normal game of all board configurations is 5x. Dice overs a 137 max bet on a 4.925x payout. We decided to make it 100 as it's a nice round number and it gives us room to increase it over time if we wanted. 100 is also in-line with other games on ICONbet.

### **Max Bet (side bet)**

The max bets take in the probability of the buckets into account. The lowest probability of all buckets and board configurations is  $\frac{1}{43} = 2.32\%$ . So we have set the max side bet to be 25 ICX this is in line with the max bet that Dice offers for Side bets (Two ICX Icons is 1% chance which has a 95x payout).. 25 ICX bet landing on this bucket is a 40.85x payout = 1021.25.

Based on our research of other blockchain casinos who are presently offering a similarly styled game, we feel DAOplinko will not only add value and diversity but will also assist in ICONBet's overall expansion. Another advantage of our proposed DAOplinko prototype is the fundamental DAO structure which allows for maximum transparency. All transactions are made readily available on the chain to validate any concerns regarding results and outcomes.

*Dividends payout structure for game excess/losses are as follows:*

Tap Holders 80%

Developers 20%