



# **Training Manual**

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## Table Layout



## Overview

**Dicey 21™** is a table game that seats up to five players at a standard blackjack table. It combines cards and dice in a single play method that offers players the opportunity to wager on two games simultaneously. Three community dice housed in a Pai Gow cup and one or more 52-card decks are used in the game. The cards count the same as in *Blackjack* and the dice count their spot values.

The main game is a variation of *Blackjack* that adds dice to the card play. Referred to as the ANTE & RAISE bet, the object is to win or push bets by ending up with a score of at least 16, and no greater than 21. Scores are made by combining the counts of one or two player cards and the three community dice. Players also have the option to 'raise the ante' when one of two special player-favorable situations arise.

The side bet is a variation of *Chuck-a-Luck* that adds cards to the dice play. Referred to as the MATCH bet, it offers six betting spots representing each side of a single die. The object is to bet on a spot that matches one or more of the dice. One to three wagers are allowed. For each wager, the payout increases with the number of matches. When a bet matches all three dice (Triple match), the player may use his or her card(s) for a chance to win higher payouts.

Both bets are played against a pay table, and wins are decided at the end of the game when the community dice are revealed.

## Rules

1. Player makes ANTE wager. Player may also make one to three wagers on the six MATCH choices. Bets may be of equal or unequal amounts.
2. Dealer gives player one card face up.
3. Player may "stand" or "hit" hand.
4. If player signals "hit," dealer gives player a second and final card.
5. If player has an Ace, or a count of 7 with one or two cards, player may "RAISE the ANTE" – see pay table for allowable raise-to-ante multiples.
6. Dealer shakes the Pai Gow cup containing the dice and removes its cover to reveal the outcome of the "roll."
7. Dealer announces the count of each die and total count of all three dice.
8. Dealer calculates player's ANTE & RAISE score by adding together the counts of the player's card(s) and the three community dice.
9. Player has a MATCH if any of the dice have the same count as player's wager(s), if any.
10. All wagers settled according to the pay tables.

# Pay Tables

**DICEY 21 PAYTABLES**  
( SHOWN AT ACTUAL SIZE )

<p><b>Player Gets One Card Plus One Hit Option</b> <b>SCORE = Card + Dice Count</b></p> <p style="text-align: center;">♦♦♦♦♦♦</p> <p><b>Player SCORE Pays</b></p> <table border="0"> <tr><td>16 - 18</td><td>.....</td><td>Push</td></tr> <tr><td>19 - 20</td><td>.....</td><td>1 to 1</td></tr> <tr><td>21</td><td>.....</td><td>2 to 1</td></tr> </table> <p style="text-align: center;">♦♦♦♦♦♦</p> <p><b>RAISE Options</b></p> <table border="0"> <tr><td>Any Ace</td><td>.....</td><td>0 - 3x Ante</td></tr> <tr><td>7-Count</td><td>.....</td><td>0 - 7x Ante</td></tr> </table>	16 - 18	.....	Push	19 - 20	.....	1 to 1	21	.....	2 to 1	Any Ace	.....	0 - 3x Ante	7-Count	.....	0 - 7x Ante	<p><b>Dice ONLY Matches Pay</b></p> <table border="0"> <tr><td>Single</td><td>.....</td><td>1 to 1</td></tr> <tr><td>Double</td><td>.....</td><td>2 to 1</td></tr> <tr><td>Triple</td><td>.....</td><td>6 to 1</td></tr> </table> <p><b>Triple PLUS Matches Pay</b></p> <table border="0"> <tr><td>Royal</td><td>.....</td><td>20 to 1</td></tr> <tr><td>Quad</td><td>.....</td><td>40 to 1</td></tr> <tr><td>Hi-Five</td><td>.....</td><td>500 to 1</td></tr> </table> <p style="text-align: center;">♦♦♦♦♦♦</p> <p>ROYAL = Triple + K or Q          QUAD = Triple + Matching Card          HI-FIVE = Triple + 2 Matching Cards</p>	Single	.....	1 to 1	Double	.....	2 to 1	Triple	.....	6 to 1	Royal	.....	20 to 1	Quad	.....	40 to 1	Hi-Five	.....	500 to 1
16 - 18	.....	Push																																
19 - 20	.....	1 to 1																																
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Hi-Five	.....	500 to 1																																

# Single Player Space



## Recommended Dealing Procedures

1. Shuffle six decks of cards and place them in a shoe. Cut at a point that will allow approximately five decks to be dealt before reshuffling.
2. Make sure that all bets are placed correctly. Players must make a wager on the ANTE betting spot. They may also make one to three wagers on the field of MATCH betting spots. All bets must be within the posted table minimum and maximum. No additional ANTE or MATCH wagers are permitted beyond this point.
3. Working from left to right, deal one card face up to each player.
4. From left to right, prompt each player in turn to make his or her *stand* or *hit* and *raise* decisions.
  - The player's *stand* signal is a palm down wave over his or her betting space.
  - The player's *hit* signal is a tap on the table below his or her betting space. Deal a second and final card face up to hit the hand.
  - At this point, if the player has an Ace or a one or two card count of 7, he or she may RAISE the ANTE by placing a wager on the RAISE betting spot. The RAISE wager may up to 3 times the ANTE for an Ace and up to 7 times the ANTE for a 7-count.
5. Turn and shake at least three times the Pai Gow cup (shaker) containing the dice. Then place the shaker down on or near the DICEY 21 logo in the center of the table and remove its cover to reveal the dice.
6. Announce the count of each die and the total count of all three dice.
7. Working from right to left, settle all bets with each player in turn as described below. Take losing bets first; then pay winning bets.
  - Calculate the player's score by adding together the counts of the player's card(s) and the three community dice. If the score is under 16 or over 21, the player loses the ANTE bet and the RAISE bet, if any. If the score is 16, 17 or 18, the player pushes the ANTE and RAISE bets. If the score is 19 or 20, the player wins and is paid 1:1 on the ANTE and RAISE bets. If the score is 21, the player wins and is paid 2:1 on the ANTE and RAISE bets.
  - Compare the player's MATCH wager(s), if any, with the three dice. For each bet, the player loses the wager if none of the dice match the wagered value. The player wins and is paid 1:1 if exactly one of the dice matches the wagered value (Single match). The player wins and is paid 2:1 if exactly two of the dice match the wagered value (Double match). The player wins and is paid 500:1 if all three dice plus two cards match the wagered value (Hi-Five match). The player wins and is paid 40:1 if all three dice plus one card match the wagered value (Quad match). The player wins and is paid 20:1 if all three dice match the wagered value and the player has either a King or Queen (Royal match). The player wins and is paid 6:1 if all three dice match the wagered value and the player does not have a King, Queen, or matching card. For winning bets, the highest payout only wins.
  - Place the used card(s) in the discard tray facedown.
8. Cover the shaker to end the round.

## House Edge & Basic Strategy

There is no strategy for the MATCH bet; it is a pure chance wager with a House Edge of 3.34% for the recommended pay table when six decks are used and ANTE & RAISE basic strategy is employed by the player. (Alternate pay tables are available.) Players will have at least one match and win their bet 42% of the time.

The House Edge for the ANTE & RAISE bet is 2.82% for the recommended pay table, and its basic strategy is shown in the table below. As indicated, a player should hit on cards 5 and lower and stand on cards 6 and higher.

BASIC STRATEGY	
1st Card	Decision
2	Hit
3	Hit
4	Hit
5	Hit
6	Stand
7 <sup>1</sup>	Stand
8	Stand
9	Stand
10, J, Q, K	Stand
Ace <sup>2</sup>	Stand & Raise

<sup>1</sup>Even odds

<sup>2</sup>Always Raise the Maximum

Players following basic strategy will win 31%, push 24%, and lose 45% of their hands. They will raise 8% of the time and have the opportunity to raise 20%\* of the time. Players should always stand and raise the maximum when they receive a player-advantaged first-card Ace (8%\*). Players should never raise on a second-card Ace (2%\*), assuming basic stand-hit strategy is followed. Players can gamble on 'even money' when they receive a first-card 7 or hit to a 7-count (10%\*).

## Exceptions

In jurisdictions where allowed, players may play MATCH as a stand-alone bet. When played without ANTE & RAISE, however, no cards are in play so the Triple PLUS matches are not possible. Played alone, the House Edge for the MATCH bet is 6.48%.

## Appendix

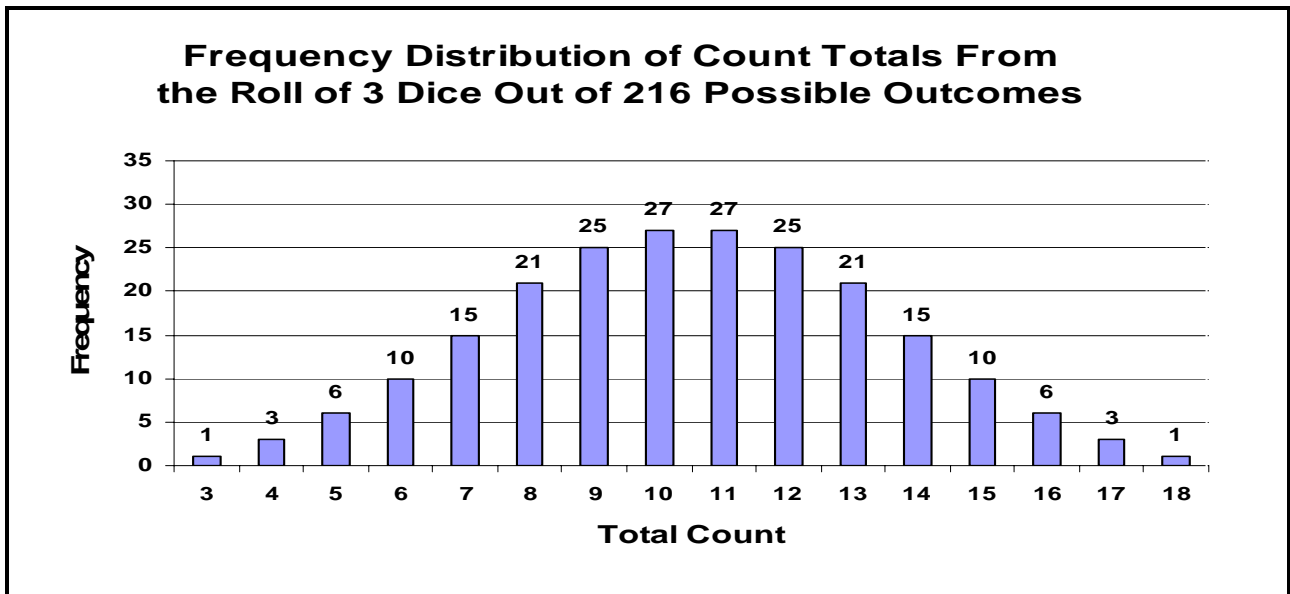
**This section contains technical information that is not required for dealer training. It is intended to provide operators data supporting the theory behind Basic Strategy (BS). Casino management can decide whether to include or remove it for distribution to non-supervisory personnel.**

It is helpful in understanding BS logic to know the distribution of values, or total count, for the three dice. There are a total of 216 possible roll combinations and the values of their combined counts occur in 8 pairs of frequencies in a normal distribution. The 16 possible values are 3 through 18; their frequencies and probabilities of occurrence are shown in the table below:

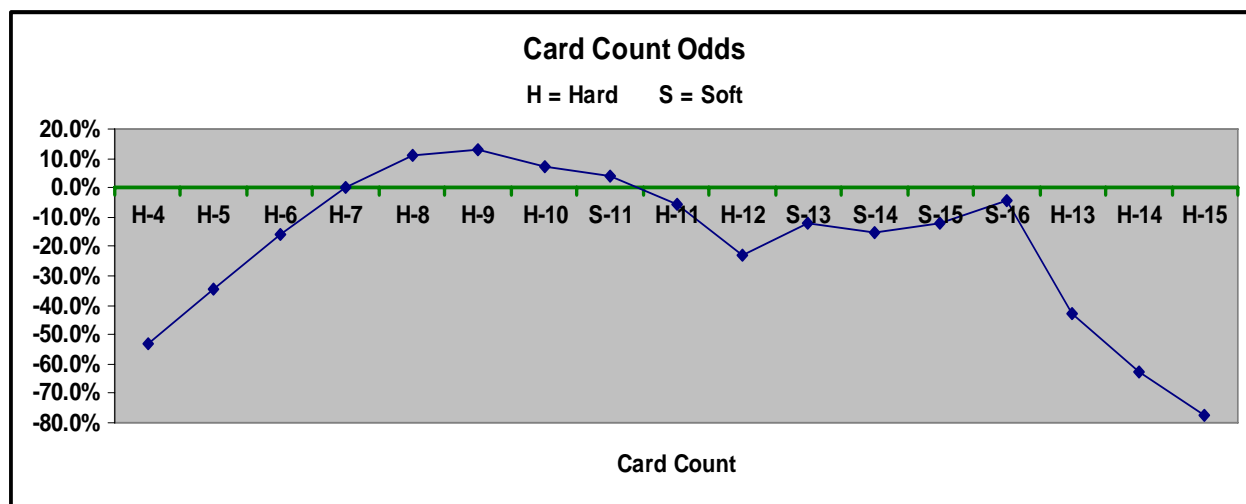
<u>Value</u>	<u>Frequency (Each)</u>	<u>Probability (Pairs)</u>
3, 18	1	0.93
4, 17	3	2.78
5, 16	6	5.56
6, 15	10	9.26
7, 14	15	13.89
8, 13	21	19.44
9, 12	25	23.15
10, 11	<u>27</u>	<u>25.00</u>
<b>TOTALS</b>	<u><b>216</b></u>	<u><b>100.00</b></u>

On average,

- One out of every four rolls will be either a 10 or 11
- Almost one out of every two rolls will be a 9, 10, 11 or 12
- Over two out of every three rolls will be an 8, 9, 10, 11, 12 or 13
- Overall, the average count of the three dice will be 10.5



The graph below depicts a player's odds for each possible ending card count, assuming BS is employed. Odds are even with a 7-count. Players have an 11% advantage with an 8-count, a 13% advantage with a 9-count, a 7% advantage with a 10-count, and a 4% advantage with a soft 11-count (single Ace). Players are at a disadvantage with all other counts, both hard and soft.



As the chart indicates, the most favorable card counts for players are 8 through soft 11 (top of the curve), situations which give players an advantage against the house. So when drawing a first card 8, 9, 10, Jack, Queen, King or Ace, players should stand to assure that they stay in the 'advantage' zone. Same goes for a 7, where players have even odds against the house plus the opportunity to multiply their 'even money' bet. When drawing a first card 2, 3, 4 or 5, players are at a steep disadvantage against the house and the odds are either certain or better for improving their hand if they hit than not. When drawing a first card 6, the odds are better for worsening their hand if they hit than not.

Below are the expected values (EVs) for the recommended pay table based on the first card received by the player (A, 2, 3 ... 10s). BS is implied in the table:

DICEY 21 EDGE COMPUTATION										
Maximum Raise-to-Ante Multiple →	3	0	0	0	0	0	7	0	0	0
First Card →	A	2	3	4	5	6	7	8	9	10
STAND EV	0.041667	-0.819444	-0.689815	-0.527778	-0.347222	-0.162037	0.000000	0.111111	0.129630	0.069444
HIT EV	-0.025560	-0.139425	-0.181687	-0.246517	-0.321767	-0.406187	-0.497097	-0.590598	-0.680645	-0.763130
STAND & RAISE	0.166667	-0.819444	-0.689815	-0.527778	-0.347222	-0.162037	0.000000	0.111111	0.129630	0.069444
MAX EV	0.166667	-0.139425	-0.181687	-0.246517	-0.321767	-0.162037	0.000000	0.111111	0.129630	0.069444
p	0.076923	0.076923	0.076923	0.076923	0.076923	0.076923	0.076923	0.076923	0.076923	0.307692
p*EV	0.012821	-0.010725	-0.013976	-0.018963	-0.024751	-0.012464	0.000000	0.008547	0.009972	0.021368
										<b>EDGE: -0.028173</b>

EDGE change for each change in the max. raise multiple to Ante for a Player's single Ace: **0.32%**

- Examples: For a 1x Ante maximum multiple, House Edge is 3.46%
- For a 2x Ante maximum multiple, House Edge is 3.13%
- For a 4x Ante maximum multiple, House Edge is 2.50%