

# Split Uno: Arbiter Rule Document

Game Logic and Algorithms

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## Abstract

This document outlines the complete rules and resolution logic for the **Split Uno** variant, derived directly from the game's core arbitration code. This variant introduces unique mechanics for number card battles, action card counter-play, and major penalties.

# 1 Game Setup and Goal

Table 1: Initial Game State

Element	Initial State	Description
<b>Players</b>	Player A, Player B	Two players compete.
<b>Goal</b>	<b>Reduce Number Cards to 0.</b>	The player who reaches zero (0) Number Cards first wins.
<b>Starting Cards</b>	20 Number Cards, 0 Action Cards	Players start with only Number Cards and must act on their turn.
<b>Deck State</b>	68 Number Cards, 32 Action Cards	The arbiter tracks the remaining cards.
<b>Win Streak</b>	0 (per player)	A separate counter for consecutive round wins, less than 5.
<b>Blocked State</b>	False (per player)	A flag indicating if a player is temporarily prevented from acting.

## 2 Number Card Round Logic (The Bid)

A standard round occurs when neither player is blocked. Both players simultaneously choose and reveal one **Number Card (0-9)**. The Arbiter resolves the outcome based on the comparison of the two cards, applying special card effects first.

### 2.1 Special Card Effects

These effects are resolved **before** determining the winner of the bid.

- **0 (Draw):** The player who played the **0** forces the opponent to shed **1 Number Card** and draws that card into their own hand.
- **7 (Penalty Draw):** The player who played the **7** forces the opponent to draw **2 Number Cards** and **1 Action Card**.

### 2.2 Round Resolution Algorithm

1. **Resolve Special Effects:** Apply any effects from the **0** or **7** cards played by either player.
2. **Compare Cards:**
  - **Winner (Higher Card):** The player with the **higher** Number Card wins the bid.
    - *Winner Action:* Sheds **1 Number Card** (hand size decreases by 1).
    - *Loser Action:* Draws **1 Number Card** (hand size increases by 1).
    - *Win Streak:* The winner's streak is incremented, and the loser's streak is reset to 0.
  - **Tie (Same Card):** Both players play the same number.
    - *Both Actions:* Both players **shed 1 Number Card** and **draw 1 Number Card**.
    - *Win Streak:* Both players' streaks are reset to 0.

### 2.3 Blocked Round Logic

If one player is **Blocked** (due to a previous BLOCK card):

- **Unblocked Player:** Sheds **1 Number Card**.

- **Blocked Player:** Draws **1 Number Card** as a penalty.
- **Status Update:** The **Blocked** status for the penalized player is immediately removed. The unblocked player receives a win streak increment.

### 3 Action Card Logic

Action Cards are played in separate rounds and deducted from the player’s **Action Card** hand count.

Table 2: Action Card Effects and Counter-Play

Action Card	Effect & Resolution
<b>BLOCK</b>	Blocks the opponent for the next Number Card round.
<b>REVERSE</b>	<b>Hand Swap:</b> Both players swap their <b>entire hands</b> (Number Cards and Action Cards).
<b>COLOR CHANGE</b>	<b>Rule Set:</b> Both players <b>shed 1 Number Card</b> . The player who played the card announces the new color.
<b>DRAW TWO (+2)</b>	The opponent must draw <b>2 Number Cards</b> .
<b>DRAW FOUR (+4)</b>	The opponent must draw <b>4 Number Cards</b> .
<b>TRUTH</b>	Both players <b>shed 1 Number Card</b> . If the opponent <b>refuses to answer</b> , the playing player chooses one of two penalties for the opponent.
<b>DARE</b>	Both players <b>shed 1 Number Card</b> . If the opponent <b>refuses to complete</b> the dare, the playing player chooses one of two penalties for the opponent.

#### 3.1 Draw Counter-Play and Penalty Algorithm

When a **+2** or **+4** is played, the opponent can counter with their own **+2** or **+4**. The penalty is based on the difference plus one base card.

Table 3: Draw Counter-Play Penalties

Initial Card (X)	Counter Card (Y)	Penalty Recipient	Penalty Amount (Number Cards)
<b>+2</b>	<b>+2</b>	Both Players	Draw <b>1</b> each
<b>+2</b>	<b>+4</b>	Player A (Initial Player)	Draw <b>3</b> = 1 + (4 – 2)
<b>+4</b>	<b>+2</b>	Player B (Counter Player)	Draw <b>3</b> = 1 + (4 – 2)
<b>+4</b>	<b>+4</b>	Both Players	Draw <b>1</b> each

#### 3.2 Truth Refusal Penalty

If the opponent refuses to answer the **TRUTH** question, the playing player chooses one of the following two penalties for the opponent:

1. The playing player draws **2 Action Cards**, AND the opponent draws **2 Number Cards**.
2. The opponent draws **5 Number Cards**.

### 4 Win Condition and Challenge Logic

#### 4.1 Consecutive Win Bonus

If a player wins **two or more** Number Card rounds in a row, they earn a bonus.  
 The player with the streak chooses one of two bonuses (streak is reset after claim):

1. The player draws **1 Action Card**.
2. The opponent is forced to draw **2 Number Cards**.

## 4.2 Game Win and Challenge

When a player (the **Potential Winner**) reaches **0 Number Cards**:

1. **No Challenge:** If the opponent (the **Challenger**) does not challenge, the **Potential Winner wins the game instantly**.
2. **Challenge:** The Challenger may challenge by playing a **+2** or **+4** Action Card.
  - **Insufficient Cards:** If the Challenger has only **1 Action Card**, they cannot legally challenge. They draw **1 Number Card** as a penalty, and the Potential Winner wins instantly.
  - **Successful Challenge:**
    - The Challenger's Action Card is **deducted**.
    - The **Potential Winner** must draw the corresponding penalty amount (**2 or 4 Number Cards**).
    - The Potential Winner's card count is now  $> 0$ , and the **game continues**.