

For all examples of the guide, all cards (not clued) have been played, and all copies of cards have been discarded if not stated otherwise.

Everything written between brackets () is globally known (so known even by the player who holds that card).

I] Intro:

A game can be lost in the endgame because of 4 and only 4 factors:

1) **lack of clues**: the players were a few clues short to be able to stall to make the right person start the last round;

1 card in the deck. 0 clue left.

A: x-x-x-x-x

B: x-x-x-x-(r5)

C: x-x-x-x-(r4)

2) **one player drew most of the playables**: one player got 3 or 4 plays which prevents the team from having enough clues to delay. This is different from the first one because it can cost 3 or 6 clues to delay 1 or 2 rounds with 4 players, which, even on high efficiency games, can be a problem. Sometimes, it can be only 2 cards, if it's two 5s, one of the 4s of these colors drawn late, and the other which is hard to be played before last round per example;

2 cards in the deck. 0 clue left.

A: x-x-(r4)-(r5)-(b5)

B: x-x-x-x-x

C: x-x-x-x-x

3) **series not in order**: see the example, order of reds is $r3 > r5 > r4$;

1 card in deck. 7 clues left.

A: x-x-x-x-(r3)

B: x-x-x-x-(r5)

C: x-x-x-x-(r4)

4) **'bottom deck'**: discarding a non-critical card and having the other copy at or near the bottom of the deck: the game could be lost because of it;

II] Solutions for each factor taken independently:

Each of these sections is only true if you are sure the game can only be lost by this factor (see III] for combinations).

1) **lack of clues**: playing a 4 (or below) makes you 'lose' one clue because you played instead of discarding, which gains one clue, so you should highly consider not to play them.

Explained differently, playing any 4 (or below) during the last turn 'gains' one clue: this means, you want to play the most possible of them during that turn if you need some extra clues.

2 cards in-deck. 0 clue left.

A: x-x-x-x-(r4)

B: x-x-x-x-(r5)

C: x-x-x-(g5)-(b5)

A must discard because one more clue is needed.

2) **one player drew most playables**: this one can often be optimized during the midgame, and even sometimes just after the early game. If someone gets many of the 5s, you should put more and more value on making him not discard as you begin to see that these 5s will be problematic (e.g. a 4 of one of these colours is discarded, he draws more playables, neither of the 2s of one of the colours has been drawn...).

This value can increase too when you are getting close to the endgame because the number of turns remaining decreases, so the chance that this is the only thing to matter in the endgame optimizations increases.

Then, close to the end game, try to make him play his cards in priority.

Discarded: g4.

A: x-x-x-(r3)-(b4)

B: x-x-(g5)-(r5)-(b5)

C: x-x-x-x-(r4)

Conventionally, without thinking, r3 has priority. But obviously, playing b4 is best to make B play, which seems the priority.

3) **series not in order**: just as with 2), this can be anticipated during the mid/endgame.

2 cards in-deck. 7 clues left.

Discarded: r3.

A: x-x-x-x-x

B: x-x-x-x-(r5)

C: x-x-x-x-(r4)

A's goal is to ensure r3 is drawn in the right hand. If A discards, the max score is 29. If A delays and B discards, there is a 50% chance of winning.

The second last card in the deck is the most important discard. At this point, you can usually know which player will start the endgame (it may or may not be the player who discards), and so put the remaining useful card in the deck in the right hand.

3 cards in-deck. 7 clues left.

Discarded: r3, r4.

A: x-x-x-x-(r5)

B: x-x-x-x-x

C: x-x-x-x-x

A's goal is to get both r3 and r4 in the right hands. If A discards and draws r4, it's a loss, while it could have been a win if another player discarded.

I believe this is the hardest optimization to do: it requires anticipating the potential draws, and it's pretty hard to know it's the thing which can cost the game.

Your goal is to reduce the 'gap of players' between two successive playable cards. It's pretty easy when you only play with one suit, but pretty hard when there is more than one.

4) **'bottom deck'**: hum... Get good? It's too complex, and it is not the purpose of this guide. You will find other guides on that subject.

In short: don't discard useful cards (even 3 and sometimes 4), manage the different chops, consider not discarding if you believe your chop is useful but not critical, and be efficient.

III] Combinations of previous factors:

The fun begins when it's not clear what the limiting factor is.

Sometimes, this limiting factor can be different depending on the draw.

You could think of it like this: each of your actions will make one of these 4 factors more or less likely. Your goal is to find which factor(s) ha(ve)s the highest chance to be problematic, and act accordingly.

This is gained mainly by experience, but being aware of these factors can help you to improve a lot.

In rare games, you need to count the number of clues you can spend, to be able to know how many players can skip their turns to optimize factor 1). Then once that's established, you need to decide which players should skip their turns to optimize factor 3). Sometimes, you could first want to discard as soon as possible to see which suit you need to optimize factor 1) and 3) for.

All of that is a total mess with multiple suits, and that's why some situations/puzzles of end games can take more than 1 hour to calculate or can even need a computer to see what is the best line of action.

IV] Others:

1) By pushing the first and second factor to the max, you can find a situation where discarding is better than playing, even without seeing all the remaining cards (but it's really rare):

Played: b2, y4, g4, r4

Discarded: b3, b4

5 cards in-deck. 0 clue left.

A: x-x-x-x-(b3)

B: x-x-x-x-x

C: (b5)-x-(y5)-(g5)-(r5)

The only win condition is to finish with $5 > b3 > b4 > b5$. So playing b3 is bad. A and B must discard, else the team will not have enough clues.