

# Sandpile Panic

Instruction manual v0.1.0, written by Tyler (<https://datakinds.github.io/>)

## Hello!

This is *Sandpile Panic*, a game about playing in a sandbox. You and up to seven friends are tasked with creating the most sprawling sandpile you can muster. The game's over once the sand spills outside of the sandbox, and you win if you managed to create the largest pile!

The traditional way to play is with two players on a 5x5 square tiled grid board. Any board between 4x4 and 8x8 will work, but there is a table in the addendum with recommended board sizes for various numbers of players. This manual will assume you are playing with 2 players on a 5x5 board, and will refer to these players as *player one* on the *white pieces* and *player two* on the *black pieces*. To add more players, simply find more pieces of different colors.

## First turn

Sandpile Panic has an inherent first player/white pieces advantage.

For two players there are two methods to negating this advantage:

- The *pie cutting* rule: Player one chooses a desired starting position. Player two then has two options: they can either allow player one to use this starting position, or they can take this starting position and play using the white pieces instead.
- The *two player fair share* rule: Player two has an extra turn after their first turn.

For more than two players, you must use the *fair share* rule:

- Once all players have played one turn, the turn order reverses until all players have played a second turn.
  - Example turn orders (note that the first and last players both have double turns under this rule):
    - \* 1 2 3 3 2 1 1 2 3 1 2 3 1 2 3
    - \* 1 2 3 4 4 3 2 1 1 2 3 4 1 2 3 4 1 2 3 4
    - \* 1 2 3 4 5 5 4 3 2 1 1 2 3 4 5 1 2 3 4 5

## Turn structure

The white pieces play first. A turn consists of one of the two following actions:

- The active player may play a piece on an empty space, where it will remain for the rest of the game.
- The active player may play a piece on top of a piece of their color. This will form a pile of multiple pieces. Once a pile hits 4 pieces tall, it's *ready*

*to topple*. If a piece is played on a pile that's already 4 tall and *ready to topple*, that pile *topples* as described in the next section of the rules.

Note that a player can never play a piece on top of another player's color except via toppling.

## Toppling

If a pile becomes 5 or more pieces tall, either from playing a piece on top of it or by an adjacent pile toppling onto it, it must be *toppled* before the end of the active player's turn.

To *topple* a pile, the active player takes the top four pieces off the pile, leaving the remainder of the pile untouched on the game board. They will then split the four pieces evenly among the four adjacent tiles on the board, stacking pieces if these tiles are already populated. Pieces must be placed on adjacent spaces in a clockwise-order around the toppled tower, starting from the bottom piece and working your way up. The active player may decide which side of the toppled tower they will begin placing pieces on.

If toppling a pile creates a situation where there are other piles *ready to topple* with 5 or more pieces, the active player must continue toppling piles until there are no piles left to topple. They may choose to topple remaining piles in whatever order is most beneficial to them.

If toppling a pile spills a piece outside of the game board, the game ends at the end of the active player's turn. This means that the active player must finish toppling all piles on the board that are *ready to topple* before scoring.

## Scoring

Scoring involves counting the size of your *contiguous islands*. For scoring purposes, do not consider the height of any of the piles. Look at the game board from the top and only consider the colors that are on the top of the piles.

A *contiguous island* is a group of piles that are all touching and showing the same color. Piles that show the same color but only touch diagonally on the corner are not considered to be in the same island. So, contiguous islands must be connected via adjacency. A pile that is not touching any other pile of the same color to the left, right, top, or bottom is its own contiguous island of size one.

The player with the largest contiguous island wins. In the case of a tie, the player with the second largest contiguous island wins. In the case of a tie with the size of the second largest contiguous island, continue looking at ever-smaller islands to break the tie. In the case of a total tie, play another game.

Note that if you would like to play for rankings instead of just a single winner, you must use the *landgrab* variant scoring rule described below.

## Variants

### Alternative scoring rules

- The *landgrab* scoring rule: Count up the sizes of all your contiguous islands. Square each size and sum them up to produce your final score. The player with the highest score wins. In the case of a tie, defer to the regular scoring rule described above.
- *No small islands!* scoring rule: Count up the sizes of all your contiguous islands. Square each size, subtract 6, and sum them up to produce your final score. Note that small islands may now contribute negatively to a player's final score. The player with the highest score wins. In the case of a tie, defer to the regular scoring rule described above.

### Alternative pieces

- *Wildcard piece* scoring rule: Give all players a hot pink piece. They may play this piece in place of their own color and all players may play on top of a hot pink piece. When scoring, all players may consider the hot pink piece to be their own color.
- *Penalty piece* scoring rule: Give all players a hot pink piece. They may play this piece in place of their own color and all players may play on top of a hot pink piece. When scoring, any island showing a hot pink piece is not scored.

## Addendum

Note that the highest a pile should ever be able to reach during a game is 8 pieces tall.

Here are the recommended board sizes for different player counts. Sizes with an asterisk are recommended for first time players. Feel free to experiment with game board sizes!

| Player count | Short game board size | Long game board size |
|--------------|-----------------------|----------------------|
| 2            | 4x4                   | 5x5*                 |
| 3            | 5x5*                  | 6x6                  |
| 4            | 6x6                   | 7x7*                 |
| 5            | 7x7                   | 8x8*                 |
| 6            | 7x7                   | 8x8*                 |
| 7            | 8x8*                  | 9x9                  |
| 8            | 8x8*                  | 10x10                |

## Special thanks

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