

shibumi

RULE BOOK

v1.1

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- Stephen Tavener for analysis and game ideas.
- Dieter Stein for immediately getting the Shibumi philosophy.
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Shibumi Rule Book v1.0

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System

Shibui



Shibui is a term from Japanese aesthetics that means elegance in its minimal form, or simplicity hiding complexity. Objects that display shibui are described as *shibumi*. Such objects may look plain at first sight, but will reward the viewer with hidden depths the more time is spent with them.



There are many parallels between the principles of shibui and the principles of abstract game design. For example, the old cliché applied to many abstract board games - *a minute to learn, a lifetime to master* - exemplifies the shibui ideal of simple appearances hiding deeper complexity.

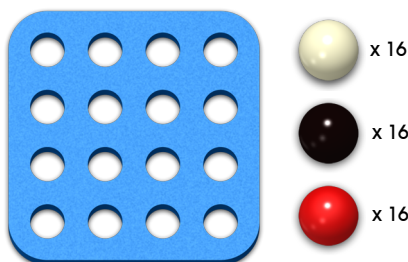
One of the keys to designing shibumi games is to make the maximum use of minimal equipment, through clever use of the rules. These should be deceptively simple themselves, but allow complex interactions to emerge during play.

There are also obvious similarities between the elegance and the *shibusa* (degree of shibui-ness) of an object. However, elegance can describe superficial aspects whereas shibui is a more holistic concept that goes right to the core - things are either shibumi or they are not. Almost any shibumi object will be elegant, but many elegant objects will not be shibumi.

Shibumi Set

渋

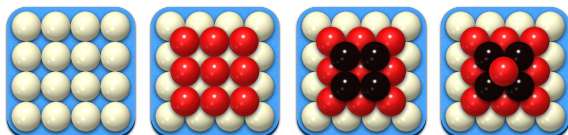
The *Shibumi set* is a simple game system that consists of a 4x4 square grid of holes and 16 balls in three colours:



Note: Any reference to "red" balls shall be understood to mean grey balls in the figures of B&W copies of this book.

The set is based on a *square pyramidal stacking*. Such stackings have been used for games and puzzles at least since Edouard Lucas's [cannon-ball stacking problem](#) of 1875.

Shibumi games do not have to use all balls or all colours, but generally exploit this 3D pyramidal stacking. The set was devised by Cameron Browne in March 2011.



A fully stacked pyramid will contain $4 \times 4 + 3 \times 3 + 2 \times 2 + 1 = 30$ balls. There are hence potentially 30 playable points, even though the board itself is only 4x4 in size, and no more than 16 of these points can ever be playable at any time.

Shibumi games therefore have the move complexity of a 2D (16 point) game but the board complexity of a 3D (30 point) game, so can be more complex than they first appear. Very shibui!

16 balls in each colour were chosen to allow complete coverage of the board layer in each colour, and to allow a wide range of colour combinations for various numbers of players while minimising the amount of equipment.

The state of each board point may be described by two bits (00=empty, 01=white, 10=black, 11=red), and the entire board state packed into $2 \times 30 = 60$ bits. Each board position can therefore be described by a single 64-bit integer, leading to very efficient computer implementation.

In the context of this book, lower case *shibumi* refers to the aesthetic concept, while upper case *Shibumi* refers to the game system described herein.

The Shibumi set is available exclusively from [nestorgames](http://nestorgames.com).

Definitions

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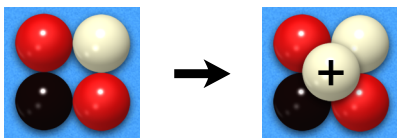
We define some key terms, so that games can be described clearly and unambiguously in a common language.

Position: The levels are described as follows:

- *Board:* 4x4 level of board holes.
- *Level 1:* 3x3 level.
- *Level 2:* 2x2 level.
- *Apex:* Single ball at the top of the pyramid.

A *point* is any location that a ball can be placed. This includes the board level *holes* and higher level points when balls stack. The pyramid is *complete* if all 30 balls are placed.

Stacking: A 2x2 square of mutually adjacent pieces is called a *platform* (left). Balls can stack on platforms (right).

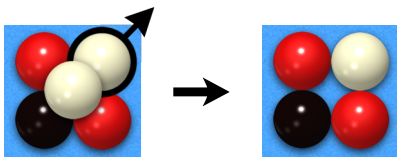


Each ball in the platform *supports* the ball stacked on top.

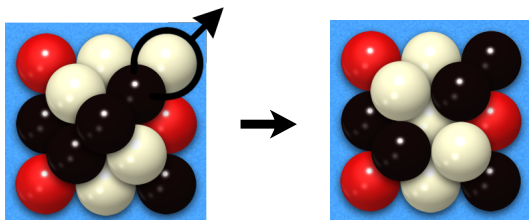
Balls are *adjacent* to any balls that they touch. This includes *flatly adjacent* balls on the same level and supported balls between levels. Diagonal balls on a level do not touch.

Points are *playable* if a piece placed there would sit stably. Only board holes and platforms are playable.

Dropping: Balls that support a single ball may be removed (left) so that the stacked ball *drops* to fill the space (right).

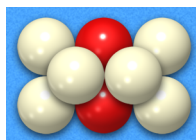


This may cause higher level balls to also drop.



This two-ball drop cuts the main black group in two, but reveals a hidden white ball to form a single white group.

Pinning: Any ball that directly supports more than one ball on the level above is *pinned* and cannot be removed. For example, the two red balls on the right are pinned.

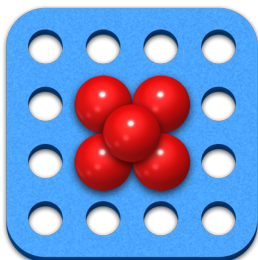


Balls that are not pinned are *movable*.

Balls that do not support any balls on top are *free*.

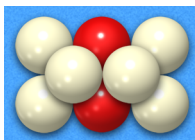
Visibility: Visibility refers to whether balls can be seen when viewed from directly above. Balls that are *buried* by another ball stacked directly above are therefore *hidden*.

There are five *interior* points at which balls may be hidden (left) and 25 *exterior* points that will always be visible (right).



Some games start with a small pyramid of five neutral pieces to ensure that every piece placed in the same is visible.

Connectivity: Balls that touch are *connected*. Connected balls of the same colour form *groups*. In general, balls are only connected if the connection is visible: *overpasses cut underpasses*.



The white balls (right) are visibly connected and form a single group, but the red balls are *cut* and do not form a group.

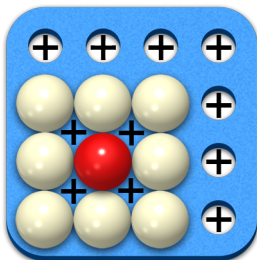
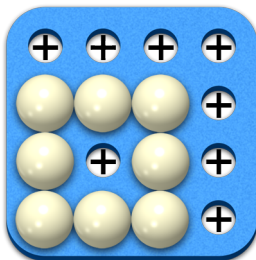
Ownership: Balls of your colours are *friends*.
Balls of any opponent's colour are *enemies*.
Balls shared by both players are *neutral*.

Cycles: Some games are prone to infinite cycles, and need some way to stop moves being repeated over and over.

Cycles can occur when a ball being removed causes a drop and is placed on top of the column that has just dropped. A simple solution is to forbid balls being placed on balls that have dropped that turn. Another safeguard is to specify that the board state must change with each turn.

A stronger safeguard is the *ko* rule, which stipulates that players cannot repeat the board position of their previous turn. The *superko* rule goes further to stipulate that players cannot repeat the board position of *any* previous turn.

Activation: An interesting feature of the pyramidal stacking is that moves can *activate* higher level points. For example, the following position has 8 playable points before the move (left) but 11 after the move (right), even though the move itself occupies a point. Example by Giacomo Galimberti.



Shibumi Challenge



The Shibumi Challenge was a game design contest run over December 2011 and January 2012 on the [BoardGameGeek](#) web site. Participants were asked to design the best – and most shibui – games for the Shibumi set.

22 designers submitted 45 new games, the best of which are included in this book. The winners were:

1st:	<i>Splroof</i>	Matt Green	p46
2nd:	<i>Spire</i>	Dieter Stein	p19
3rd:	<i>Splastro</i>	Giacomo Galimberti	p32
.....			
RU:	<i>Sprite</i>	Micah Fuller	p23

The Shibumi set is so constrained that it's almost impossible to devise new rules that have not been seen in other games before. There are only so many things that can be done with a 4x4 grid of holes and some balls, and as mathematician Ian Stewart points out: *the simpler the ingredients, the harder it is to make things with them.*

Almost any creativity in design has to come through the combination of known rules and their adaptation to the 3D pyramidal geometry. If anything, a greater degree of creativity is required to coax new games from this minimal system than for the general, unconstrained, case. Several experienced game designers simply balked at the challenge of making something out of almost nothing, after failing to see the emergent possibilities of the system.

The Challenge achieved its intended goals. It produced a number of new, high quality Shibumi games, and generated a large amount of raw material in the form of base rules for the system. These will be used in an upcoming AI experiment in combinatorial creativity, to see whether even more high quality games can be found using automated search.

Games



The *players* symbol indicates the number of players suitable for each game.



The *complexity* symbol indicates how difficult each game is to learn to play.

Complexity scores vary in the range 1 to 4, based on the scale used on www.nestorgames.com. Note that a game's difficulty is not necessarily the same as its depth – especially when shibui is involved!

Games are grouped by category according to their goal type or underlying mechanism. They are not otherwise listed in any particular order, although we have tried to capture the sequential development of ideas where possible.

Two-Player Games: The players are assumed to be White and Black, in that order, unless otherwise stated.

Three-Player Games: The players are assumed to be White, Black and Red, in that order, unless otherwise stated.

Most Shibumi games will take between 5 to 10 minutes to play, depending on complexity. Some of the more complex ones might take a bit longer if played in earnest.

All Shibumi game names start with "Sp" to denote that they are **S**quare **P**yramidal games.

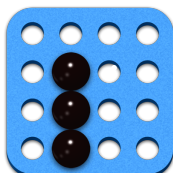
Some of the games were dressed in a theme for entry in the Shibumi Challenge. Spaghetti had a pasta theme, Spice had a sauce theme, Sparro had a pirate theme, and so on. We've removed such themes to make the descriptions as clear and consistent as possible – our apologies to the designers.

More details on each game can be found in their BoardGameGeek entries.

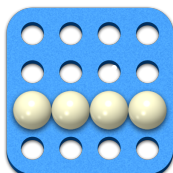
N-in-a-Row

Lines. Good old lines – the simplest 2D shape. For elegance, clarity and intuitive play you can't beat lines. Where would abstract games be without them?

The square pyramidal geometry offers lots of scope for different line types. Here are some examples.



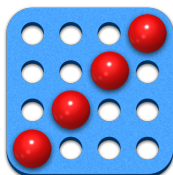
Fixed length (3).



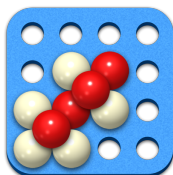
Board spanning.



Higher level.



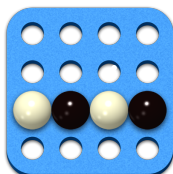
Diagonal.



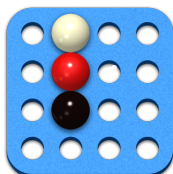
Linear from above.



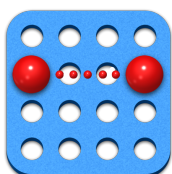
Up a ridge.



Alternating.



Heterogenous.



Line of sight.

Spline



Néstor Romeral Andrés (2011)



2



1

Spline is a simple *N*-in-a-row game that expresses shibui in its basic rules, intuitive nature and guaranteed result.

Start: The board starts empty.

Play: Players take turns adding a piece of their colour to any playable point (empty hole or platform).

End: A player wins by making a flat line of their colour spanning side to side, or corner to corner, on any level.

Lines on the 4x4 level must be 4 balls long.

Lines on the 3x3 level must be 3 balls long.

Lines on the 2x2 level must be 2 balls long.

The following examples show a winning line of 3 for White (left) and a winning line of 2 for Black (right).



Strategy: Most wins will occur on the 2x2 level, by the first player to reach that high.

Every game is guaranteed to produce a win before the last ball is played!

Spline+



Néstor Romeral Andrés (2011)



2



2

Spline+ is an extension of Spline with ball movement.

Start: The board starts empty.

Play: Players take turns either:

- 1) placing a ball of their colour on any playable point, or
- 2) moving a ball of colour to another playable point. The ball cannot be moved onto a ball that it caused to drop.

End: A player wins by making a flat line of their colour spanning side to side, or corner to corner, on any level. If multiple spanning lines occur (due to drops) then the longest line wins, otherwise the mover wins.

The following example shows a losing move for Black. If the black ball shown is removed, then the two balls above it drop down to create a line of 3 for Black but a line of 4 for White.



Ball movement adds depth to the basic Spline idea by making games longer and allowing tricky multi-level moves.

Balls are forbidden to stack on self-drops to avoid cycles.

Splice



Néstor Romeral Andrés (2011)



2



2

Splice is an an extension of Spline using red balls.

Start: The board starts empty.

Play: Players take turns placing either:

- 1) a ball of their colour on any hole or any platform that contains at least one red ball, or
- 2) a red ball on any hole or any platform.

End: A player wins by making a flat line spanning side to side, or corner to corner, on any level, composed entirely of friendly and neutral balls (at least one of each).

If the placement of a red ball achieves this for both players, then the mover wins.

The following example shows a win for White, who has completed a spanning line with one red and two white balls.



Strategy: White should place at least one red ball on the board level, otherwise Black can force a win due to parity. White should defend this red ball so that Black can't exploit it.

Spava



Cameron Browne (2012)



Spava is Spline with the “N but not N-1” rule from Yavalath.

Start: The board starts empty.

Play: Players take turns adding either a ball of their colour or a neutral red ball.

End: A player wins by making a flat line of their colour spanning side to side, or corner to corner, on any level.

A player loses by making a flat line of their colour 1 short of the spanning size, orthogonally or diagonally, on any level. Only lines at least two balls long count.

The following game shows a losing move by Black. Black has formed a line of two black balls (shown) on the 3x3 level.



The neutral red balls can be used to block winning enemy lines without creating losing lines at the same time. This makes Spava less cold than Yavalath.

Single balls on the 2x2 level do not count as lines.

Splade



Néstor Romeral Andrés (2011)



3



3

Splade is an extension of Spline for three players, inspired by Alex Randolph's Gute Nachbarn.

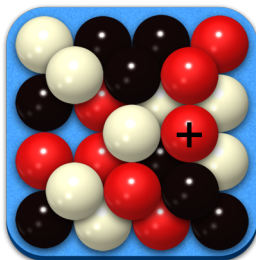
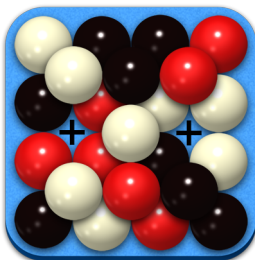
Start: The board starts empty.

Play: Place a ball of your colour at any playable point.

End: The game ends upon the completion of a flat line spanning side to side, or corner to corner, on any level, and composed of exactly two colours, X and Y.

The game is won by whichever of X and Y is immediately after the other in the playing order.

Consider Red's move on the following board (left). There are two possible options, marked +. The first option would create a line of red+white balls, giving White the win. Instead, Red completes a red+black line for victory (right).



The scoring rule would confuse even the most clear-headed player! It was designed specifically for three players to reduce the effect of petty alliances and kingmaker moves.

Variant: Make the winning order “immediately before”.

Sparro



Phil Leduc (2011)



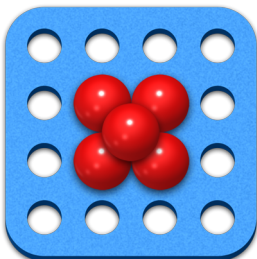
Sparro is a 3-in-a-row game in which lines need not be flat.

Start: Start with five neutral balls filling the interior points. Each player starts with 12 balls of their colour.

Play: Players take turns adding a ball of their colour at a playable point.

If the first move occupies a corner hole then the second move must occupy a non-corner hole, and vice versa.

End: The game ends when all 24 balls have been played. The player with the most lines of three wins. If tied, the last player to make a line of three wins, otherwise Black wins.



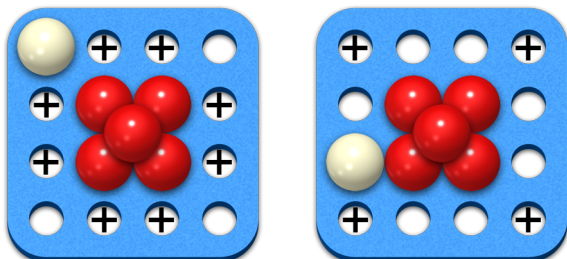
All unique lines of three are counted, hence lines of four count as two lines of three. The following game (left) scores 7 for White and 3 for Black (right).



The initial five balls occupy the interior points, ensuring that all 24 moves are made to the visible sides of the pyramid (as in Sponnect). Games must end with 29 balls in play, making the truncated (apex-less) pyramid seen above.

Phil recommends using a *tiebreaker token* such as a spare ball. Black starts with the token in hand, then players take possession of the token each time a line of three is completed. If tied, the game is awarded to the token holder.

The corner/non-corner opening rule is used to break potential problems with symmetry. If White starts at a corner hole, then Black cannot reply at another corner hole next turn (left), whereas if White does not open at a corner hole, then Black must reply at a corner hole next turn (right).



This symmetry-breaking rule is a bit verbose, but is simple in practice and solves a potentially serious problem for some games.

Spaniel



Joseph Symons-Smyth (2012)



3



2

Spaniel is an N -in-a-row game for three, in which colours are not tied to particular players.

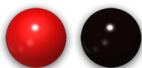
Start: The board starts empty.

Play: Players take turns placing two balls, in order, in any two playable points, as follows. Passing is not allowed.

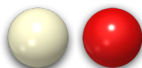
Player 1



Player 2

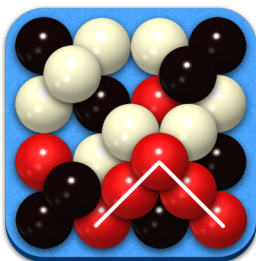


Player 3



End: A player wins by completing a visible line of three in any colour. The game is drawn if the pyramid is completed before the a winning line is made.

The following game has just been won by the last player to move, with two red lines of three (indicated). The last ball played was red, so the winner must be player 2 or player 3.



Each game will last a maximum of 15 moves.

Sploof



Matt Green (2011)



2

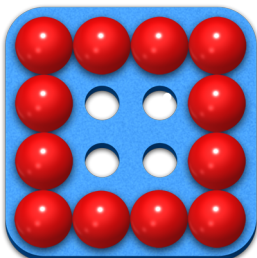


3

Sploof is an N -in-a-row game featuring buffered player hands. It was awarded 1st place in the Shibumi Challenge.

Start: Start as shown.

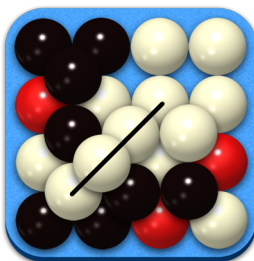
Each player starts with two friendly balls in their in stock:



Play: Players take turns either:

- 1) placing a ball from their stock at any playable point, or
- 2) removing a red ball from the board to the bag, and moving two balls of their colour from the bag to their stock.

End: A player wins with a line of four touching balls of their colour (viewed from above). A player with no legal moves loses.



The game on the left has been won by White, with a line of four touching white balls. Note that this winning line is straight when viewed from above, but not when viewed from other angles; this relaxed definition of “straight” was the first innovation of Sploof.

The second innovation was the use of the two-ball stock, which acted as a buffer between the main ball supply and the

board. Designer Matt Green stresses the importance of stock management, and the dangers of depleting your stock:

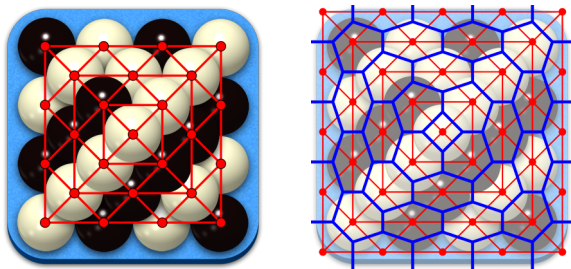
“Running out of balls in your stock will force you to remove a red ball and give the opponent two consecutive placements: this becomes a progressively riskier tactic as the game develops.”

We found Sploof elegant, original, challenging, and simply good fun to play. A worthy winner for the Shibumi Challenge!

Connection

Connection games are mathematically elegant, but the small 4x4 board may seem to small to allow any but the most trivial connection battles to occur, and this would indeed be true if the board were 2D. However, the 3D aspect of stacking and the possibility of visible connections burying hidden ones (overpasses cutting underpasses) allows some interesting connective mechanisms of cut and counter-cut to develop.

In addition, connection games played on the Shibumi set can be guaranteed to produce a winner for every game. To see why, consider the fully stacked pyramid shown below. A vertex has been drawn at the centre of each visible ball and edges drawn between connected neighbours (left).



The dual of this graph (right) is *trivalent*, meaning that three cells meet around each vertex. This is the condition for connection games such as Hex, Y and ConHex* to avoid deadlocks and guarantee a winner. The same property holds for square pyramidal stackings, despite their square basis.

* This dual is in fact the exact tiling of the ConHex board!

Span



Cameron Browne (2011)



2



1

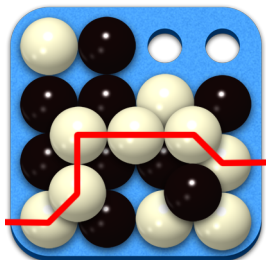
Span is the simplest connection game for the Shibumi set.

Start: The board starts empty.

Play: Players take turns adding a piece of their colour to any playable point.

End: White wins by forming a visibly connected white group spanning left and right. Black wins by forming a visibly connected black group spanning top and bottom.

The following example shows a game won by White (left) who has achieved a visible connection spanning the left and right sides of the board (right).



Black also has a potential connection between the top and bottom sides in this example, but it is visibly cut by the white path crossing over it so does not count. Recall that *overpasses cut underpasses*.

Every game of Span is guaranteed to produce a winner, even if the board fills up.

Sponnect



Martin Windischer (2011)



2



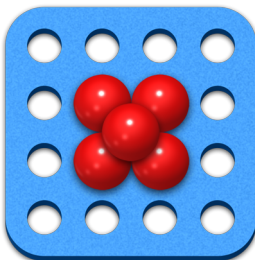
1

Sponnect is a connection game played on the visible points.

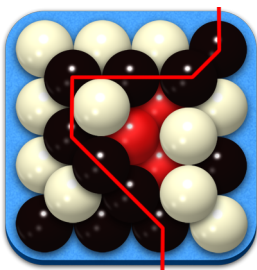
Start: Start with five neutral balls filling the interior points.

Play: Players take turns adding a ball of their colour at a playable point. Players may pass if the opponent has not just passed.

End: White wins by forming a white group spanning left and right. Black wins by forming a black group spanning top and bottom.



The following example shows a game won by Black.



The initial five balls occupy the interior points, hence every placement by each player *must* be a visible ball.

Every game is guaranteed to produce a winner.

Spight

渋

Cameron Browne and Néstor R. Andrés (2011)



2



3

Spight is a connection game that introduces the knight jump.

Start: Start as shown.

Play: Players take turns either:

- 1) making a knight move to a playable point on the same level,
- 2) making a knight jump up a level (explained shortly), or
- 3) passing if no legal moves.

End: Win by connecting your pieces into a single group.



Consider the white piece indicated, which has two moves:

- 1) a knight move to another hole, and
- 2) a knight jump up to level 1 (both moves win for White).



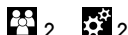
White makes the knight jump (+). This involves jumping the piece around a touching neighbour onto a platform.

Moves may cause drops, but a knight jump is not subject to ko as the moving ball can not move onto the dropping ball.

Spice

渋

Martin Grider (2011)

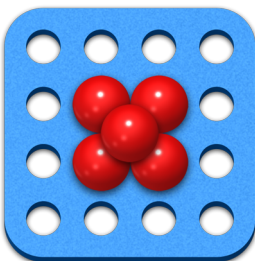


Spice is the Shibumi version of the group-size game Ketchup.

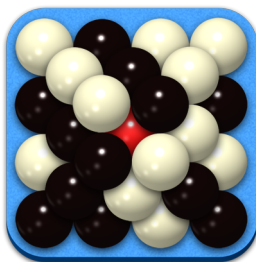
Start: Start with five neutral balls filling the interior points.

Play: Players take turns placing one or two balls of their colour at any playable point (one on the first turn).

If a move creates a larger group of (non-neutral) balls than existed before the move, then the opponent can remove any movable ball on their next turn.



End: The game ends when the pyramid is complete. The apex is removed, and the owner of the largest group wins.



This game has been won by White, with a group of size 8. Black's best group is size 6.

The apex ball is very powerful in group-building games as it connects all four sides of the pyramid. Removing the apex reduces a huge advantage for the final mover; the pyramidal geometry suits this game well.

Martin originally described the players as Ketchup (red) and Pepper (black), in keeping with the original game Ketchup. The colours have been swapped here for consistency with other games.

Spaiji



Néstor Romeral Andrés (2011)



2



2

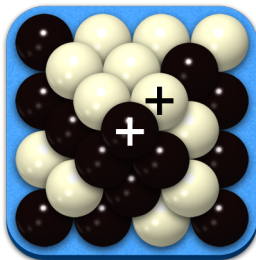
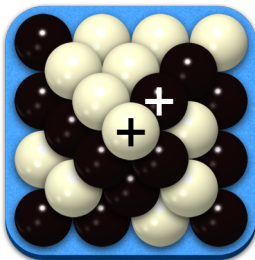
Spaiji is the Shibumi version of Taiji, which involves the placement of pieces of both colours per turn.

Start: The board starts empty.

Play: Players take turns adding a white ball and a black ball each turn, in any order, at any playable points, provided that both balls touch.

End: The game ends when the pyramid is complete. The owner of the largest visibly connected group wins.

Consider White's final move in the following game. There are two possible ways to fill the final two points, as shown.



The move on the left loses 7–13 but the move on the right wins 10–9. White should make the move on the right.

Every game will involve exactly 15 moves. The opening player (White) also gets the last move, which suggests a strong first player advantage.

Variant: Include hidden balls when scoring.

Spao



Néstor Romeral Andrés (2012)



3



2

Spao is a simple game specifically for three players, using the scoring mechanism from Omega.

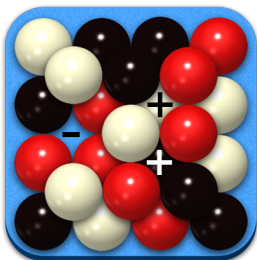
Start: The board starts empty.

Play: Players take turns placing a ball of their colour at any playable point (empty hole or platform).

End: The game ends when the pyramid is completed. Each player counts the sizes of their connected groups and multiplies their counts together. Highest score wins.

Note that hidden connections also count!

The following example shows a game in progress with White to play. A white ball plays at – will connect all of their balls into a single group of size 9 for a score of 9.



A white ball at either point marked +, however, will create a white group of size 5 and increase their score to $2 \times 2 \times 5 = 20$.

Strategy: It is better to have several small groups than one large group.

Spaghetti



Phil Leduc (2011)



2



2

Spaghetti is a path-building game featuring neutral pieces. The players are White (spaghetti) and Red (sauce).

Start: White puts a black (meat) ball on any board hole.

Play: Players take turns adding a ball of their colour to any playable point that is adjacent (orthogonal, diagonal or resting upon) the ball last played. If this is not possible they must play a black ball at any playable point.

End: The game ends when only the apex remains. A black ball is placed at the apex, and the winner is the player with the longest visible connected strand.

If tied, the last player who placed a black ball wins.

Consider the game shown below. White wins with a strand of length 9, beating Red's best strand of length 8 (right).

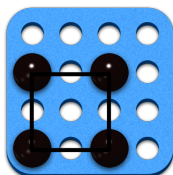


Red's strand does not include the ball marked '-' as it can't double back on itself (strands are non-branching paths).

The neutral ball at the apex is an elegant way to negate the power of the topmost point. Phil suggests using a token (e.g. a spare ball) as a reminder of who played the last black ball.

Patterns

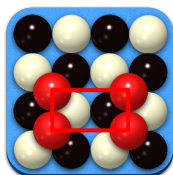
Lines are the most common geometrical pattern used in Shibumi games, and belong in their own category. However, the square pyramidal packing offers many other embedded patterns to choose from. Here are some examples.



Square corners.



Square edges.



Rectangle corners.



Pyramid corners.



Shared pyramids.



Inverted pyramid.



Plus sign.



Two triangles.



Diamond.

There have been few successful pattern-based Shibumi games to date. However, this seems to be an interesting avenue to explore due to the combinatorial possibilities.

There are various:

- *shapes*: square, rectangle, pyramid, triangle, diamond...
- *orientations*: aligned, rotated, inverted...
- *sizes*: 1, 2x2, 3x3, 4x4, 2x3, 2x4, 3x4...
- *styles*: corners, edges, faces, full, empty, in, out...
- *colours*: same, different, majority, minority...

Spyramid



Néstor Romeral Andrés (2012)



2



2

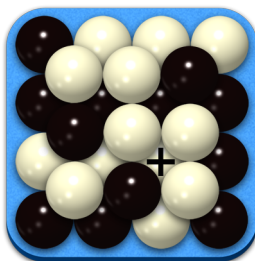
Spyramid uses a pattern-based winning condition.

Start: The board starts empty.

Play: Players take turns either adding or moving a ball of their colour to any playable point. Balls cannot be moved onto any ball that dropped as a result of the move.

End: A player wins by placing balls of their colour at the five corners of a pyramid of any size, pointing up or down. If pyramids of both colours are formed then the mover wins.

Consider the following board with Black to play. The indicated move (+) wins the game as it forms the apex of a 3x3 pyramid with another four black balls at its base (right).



Pyramids may be size 2x2, 3x3 or 4x4. There are 25 potential pyramids embedded in the 4x4 square pyramidal board: one 4x4, five 3x3, fourteen 2x2 and five 2x2 inverted.

Variant: Also allow pyramids rotated at a 45 degree angle to the square grid.

Completion

Placing a ball at the apex is the same as completing the pyramid. This is a natural and intuitive aim for games played on the pyramidal packing, and several use it to good effect.



However, care must be taken to avoid biasing the game towards any particular player. The Shibumi board contains a fixed and known number of points (30), and the apex can never be played before any other point.

For example, if players simply add a ball to any playable point each turn and win by completing the pyramid, then:

- Player 2 would win every two-player game.
- Player 3 would win every three-player game.
- Player 2 would win every four-player game, and so on.

Constraints must be made on placement, or ball removal involved, so that it is not certain at all times which player will have the final apex move.

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2

Spire is a simple platform-counting game. It was the first entry in the Shibumi Challenge and took 2nd place.

Start: The board starts empty.

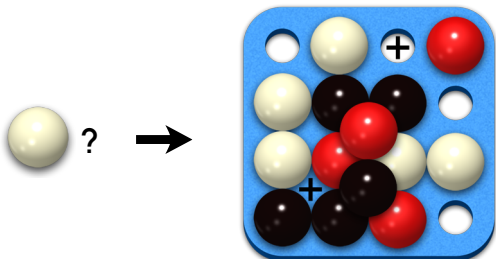
Play: Players take turns adding either a ball of their colour or a red ball to any playable point. If a red ball is played then a ball of their colour must also be played.

No platform may include more than two same-coloured balls. No ball may be stacked on any platform containing two balls of its colour.

Players must pass if they have no legal move. This can occur at the beginning of a turn or after a red placement.

End: The player who places the last ball wins. The last move can be any colour at any point.

The following example shows the only two places that a white ball can be played. The other board holes already have two white balls in surrounding platforms, and the other platform has two white support pieces.



Spinimax



Cameron Browne (2011)



3



2

Spinimax is a simple three-player Shibumi game. Moves are made on the board, but may trigger automatic stackings.

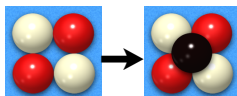
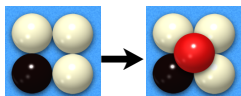
Start: The board starts empty.

Play: Players take turns adding a ball of their colour to a vacant hole.

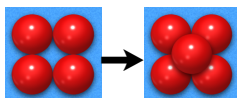
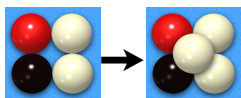
Whenever a platform is formed, at any level, a ball is automatically stacked on top, its colour being the *minority colour* of the platform (if any) otherwise the *majority colour* of the platform.

End: The owner of the ball placed on the apex wins.

The minority colour is the one least represented.



The majority colour is the one most represented. Majority stackings are only made if there is no clear minority.



Each move may trigger multiple placements, as stackings may complete platforms that trigger further stackings.

Every game is guaranteed to end after exactly 16 moves, but the last few moves can be tricky to predict correctly.

Splasttwo



Giacomo Galimberti (2012)



2



2

Splasttwo makes excellent use of the square pyramidal geometry to extend Nim-like play to 3D. Splasttwo took 3rd place in the Shibumi Challenge.

Start: The board starts empty. Each player has 15 pieces of their colour.

Play: Players take turns placing one, two or three pieces of their colour on adjacent playable points. All pieces played in a move must form a single contiguous line.

Players score 1 point for completing each of the three lower levels, and 2 points for placing a ball at the apex.

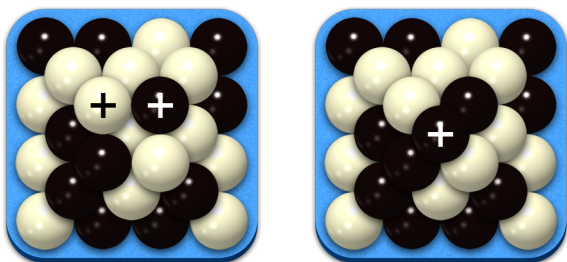
If a player runs out of balls, then the opponent completes the pyramid with their remaining balls.

End: The game ends when the pyramid is completed. The player with the most points wins.

The following example shows a game in action, with White to play (left). Black has scored 1 point for completing the board level, so White decides to even the score by completing level 1 with a line of three (right). Both players now have 1 point.



Black could now complete level 2 with a line of two to gain another point, but this would let White take the apex to win the game. Instead, Black places a single ball which forces White to play a single ball in reply to complete level 2 (left).



This gives White another point, but Black is now free to play at the apex for 2 points (right) to win the game 3 points to 2.

Strategy: The 2 points for the apex are generally decisive. Players should plan their moves around being the last player to move.

The apex is worth 2 points both to avoid ties ($1 + 1 + 1 + 2 = 5$) and to reflect the importance of the final move. This was found to increase the tension in the game, as players have to start planning their assault on the apex well in advance.

Splastwo was the surprise of the Shibumi Challenge. What initially seemed like just another Nim-like game literally took on a new dimension as the 3D stacking came into play. The rules seem to integrate especially well with the pyramidal geometry, to produce a mathematically elegant and pleasing game. Unfortunately, we feel that its Nim-like nature will provide a simple winning strategy is one if looked for.

Three Players: We believe that the game may extend naturally to three players, although this was not part of the original design. An additional tiebreaker rule would be required: *in a tie for first place, the player who completed the most levels wins*. This reduces the importance of the apex and is guaranteed to produce a winner.

Elimination

Elimination: the opposite of completion. Because sometimes it's just good to get rid of things.

Elimination games come in many forms, and for Shibumi may involve:

- emptying the pyramid,
- emptying your hand,
- playing all balls of a certain colour
- removing all balls of a certain colour, and so on.

This is a relatively untapped category.

Spanic

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Néstor Romeral Andrés (2012)



3-6



2

Spanic is a multi-player game with random ball distribution.

Start: The board starts empty. A bag is filled with 30 balls (10 in each colour) and players randomly draw a number of balls as follows. Balls are hidden from other players:

- 3 *players*: 10 balls each.
- 4 *players*: 7 balls each (place 2 balls on the board).
- 5 *players*: 6 balls each.
- 6 *players*: 5 balls each.

Play: Players take turns either:

- 1) placing one of their balls on an empty board hole or platform containing at least two balls of that colour, or
- 2) passing.

End: The winner is the first player to exhaust their balls. If all players pass in succession, then the winner is the player with the fewest remaining balls.

Spanic is all about colour management. For example, only two more white balls can be played in the following game, so any player holding more than two white balls cannot finish.



Capture

Capture is a difficult mechanism to implement well for the Shibumi set due to the extremely constrained board. All but the most subtle of attacks would simply threaten most pieces on the board every turn due to their close proximity. Asymmetric capture is especially important in this context, otherwise a free-for-all slaughter would ensue.

On the other hand, capture can offer significant benefits, as the removal and possible recycling of pieces is one way to extend games longer than the typical 15 or 30 moves. Dynamic piece exchange is one route to deeper games.

The few known Shibumi games that involve capture use various constraints to limit capturing potential. The helps produce balanced games, and one of these – Spargo – is the deepest known Shibumi game.

Spoing

渋

Stephen Tavener (2011)



2



3

Spoing is one of the few Shibumi games to not use stacking.

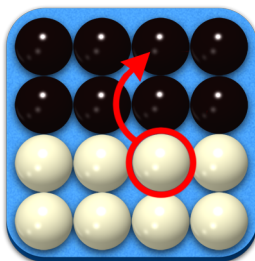
Start: Start as shown.

Play: Players take turns moving either a ball of their colour or a neutral red ball, to jump over an adjacent ball of a different colour and land on a ball beyond it. The ball landed on is removed, and the ball jumped over is converted to the colour that is not the jumper or the jumpee. Jumps can be diagonal.



End: The game ends when a player cannot move, and is won by the player with the most balls on the board.

Consider the following move by White. The white ball jumps over a black ball to capture the black ball beyond it, while the ball jumped over is converted to the absent colour (red).



Players can not move if there are not three balls in a row.

Spargo



Cameron Browne (2006-2011)



2-3



5

Spargo is a 3D extension of Go, in which pinned pieces remain active in the game as zombies following capture.

Start: The board starts empty.

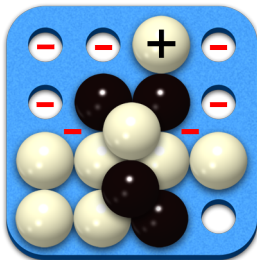
Play: Players take turns adding a ball of their colour to a playable point. The ball must have *freedom* (i.e. it must be visibly connected to at least one empty board hole by a chain of touching same-coloured balls) following the move.

Enemy groups with no freedom are captured after each move, except that balls supporting one or more enemy pieces are not removed. Such balls survive capture and remain active in the game as *zombies*.

Passing is not allowed. Overpasses cut underpasses. The [ko rule](#) applies.

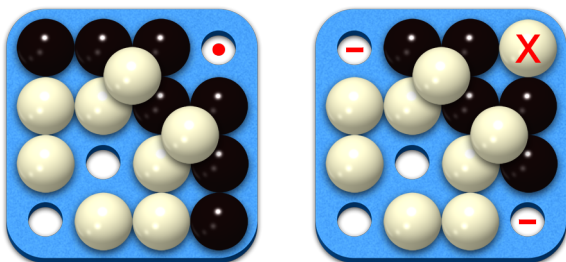
End: The game ends when the current player has no legal moves. The player with the most balls in play wins.

Consider the following position, with White to play.



White's move + removes the final freedom from the large black group, capturing seven of its nine members. The two black balls supporting the white ball survive capture and remain active in the game as zombies.

Zombies can have a devastating impact on a game, as shown in the following example. First, consider if it is Black's turn to play. Black is not able to play at any board hole, as any such placement would have no freedom afterwards.



Now, consider if it is White's turn to play. White would like to capture the black group by filling in its single remaining freedom (dotted). However, this move would only capture two black balls and leave the other five behind as zombies, leaving the white ball no freedom after the move (right). White therefore can not make this move either. Zombies protect that eye, and the black group is (temporarily) safe.

This position is interesting as the next player to move will lose, regardless of who that next player is! Spargo is surprisingly difficult to analyse even on the small 4x4 board, and is probably the deepest known Shibumi game.

Spargo is the 4x4 version of the designer's earlier game Margo (2006). See the [6x6 Games](#) section for details. It was originally tested at the smaller size on a whim, but the 4x4 games soon revealed its own unique character.

Three-Player Version: Spargo can be played with three players using the same rules as above. If you thought the two-player version was tricky...

Counting

Counting games typically involve some form of scoring or voting, with the winner being the player to satisfy some specified condition the most often.

It makes things easier to only count the visible balls. For a fully stacked pyramid there are 25 visible balls with 60 visible ball-to-ball connections to consider.

Scoring should be sufficiently intuitive that counting does not become a chore, and ideally only needs to be applied once at the end rather than after every move. Splink is an example of a game in which scoring is so intuitive that players can usually judge whether a move is good or bad without performing an exact count on it, and need only score the game once, at the end.

Spindizzy



Dieter Stein (2011)



3



4

Spindizzy is a mind-boggling game for three players.

Start: The board starts empty.

Each player takes 10 balls of their colour, passes 3 to their left neighbour, and 2 to their right neighbour. These balls remain hidden in the players' hands from this point on.

A player is selected to be the *Master* of the first turn.

Play: On each turn, players secretly select a ball from their hand and hold it out in their closed hand. The balls are then revealed simultaneously.

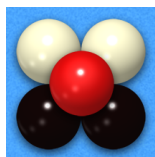
Starting with the player whose colour was selected by the Master, players then take turns placing their selected ball at any playable point.

Whenever a small 5-ball pyramid is formed, the player whose colour represents the majority (or the topmost ball if none) scores 1 point.

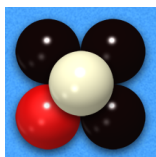
The last player of the turn becomes Master for the next turn.

End: The game ends when the pyramid is completed, and is won by the player with the most points. In case of a two-way tie, the player coming third wins.

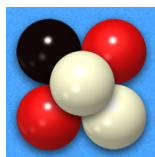
The following examples demonstrate the scoring rule.



1 point for Red.



1 point for Black.



1 point for White.

Spirit (of Shibumi)

渋

Néstor Romeral Andrés (2012)



2-3



2

Spirit is a minimalist game designed to distill the essence of *shibui* for two or three players. Spirit is all about freedom!

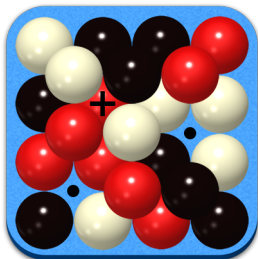
Start: The board starts empty.

Play: Players take turns either:

- 1) placing a ball of their colour at any playable point, such that no other free balls of the same colour lie on the same orthogonal line, or
- 2) passing.

End: The game ends when all players pass in succession. The game is won by the player with the most balls in play.

White has no moves in the position shown on the left, as every playable point is in line with a free white ball.



However, White can play at + on the right for significant gain. The two white support balls would no longer be free, allowing White to play at the points marked • but not Black or Red.

Ties are possible but rare.

Spodd



Giacomo Galimberti



2



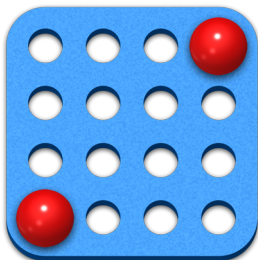
2

Spodd is a mathematically elegant voting game.

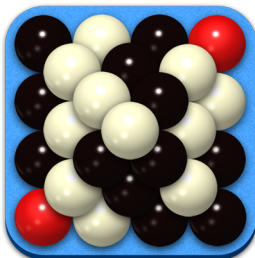
Start: Start as shown.

Play: Players take turns placing two touching balls, one white and one black, on any playable points. One can support the other.

End: The game ends when the board is full. Visible balls are counted along each board diagonal, and the player with the highest count wins each diagonal. The player who wins the most diagonal wins the game.



The following game has been won by White. The winners of each diagonal are: *White* (2-1), *Black* (4-1), *White* (4-3), *Black* (3-2) and *White* (2 -1): White wins by 3 diagonals to 2.



The game has an odd number of diagonals, each consisting of an odd number of balls. Ties are not possible.

Splink



Cameron Browne and Néstor R. Andrés (2011)



2



3

Splink is a connection game for one player (the *Attractor*) and an anti-connection game for the other (the *Repulsor*). Players share a common pool of 16 x white and 16 x red balls, and are not distinguished by colour but by their roles.

Preparation: Splink has two modes of play.

- 1) **Duel:** Two games are played, with roles switched.
The player with the highest Attractor score wins.
- 2) **Bid:** Players bid on how many points the Attractor will score. Whoever passes becomes the Repulsor.
The Attractor must achieve that score to win.

Each game is played as follows.

Start: The board starts empty. The Attractor plays first.

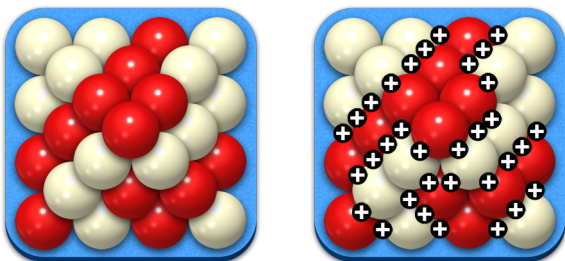
Play: Player take turns either:

- 1) placing one white ball and one red ball from the pool at any two playable points, or
- 2) removing a ball and placing it elsewhere (including on balls that have dropped due to the removal) and placing a ball of the other colour at any playable point.*

End: The game ends when the pyramid has been completed. The Attractor's score is the number of places that white and red balls visibly touch.

* Note that move 2) can only be made if the pool contains at least one ball of the colour that is *not* being removed.

For example, the Attractor scores 33 points in the following games. Each white-red pair is indicated on the right.

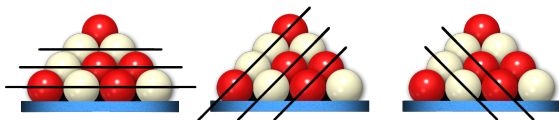


The Repulsor should also check the score as it is easy to overlook some of the 60 possible connections.

Splink emerged during a search for the simplest game to involve piece recycling, to maximise shibusu. It works at an intuitive level since spotting colour mismatches is second nature, but unfortunately the scoring is rather tedious.

An easier way to count colour mismatches is to score each side of the pyramid in turn, then add these sub-totals to get the final result. This can even be fun for the Repulsor, who can score the opposite side at the same time.

The following figures show a methodical way to score each side. Count colour mismatches along each row (left), then along each right diagonal (middle) then along each left diagonal except the ridge (to avoid double counting, right).



Loops are possible, but since each move changes the total score, players will presumably break a loop when the score favours them. Leaving the responsibility with the players is neater than specifically forbidding loops in the rules.

Puzzles



1

This section contains solitaire puzzles that can be played with just you and your Shibumi set.

The Shibumi set is a good size for puzzles. It is complex enough to provide significant challenges, yet small enough that the entire set can be used effectively. The resulting puzzles are reasonably *tractable*, that is, we do not need a super-computer to check the best solution for them.

Spuzzle



Néstor Romeral Andrés (2011)



1



2

Spuzzle was the first solitaire puzzle for the Shibumi set.

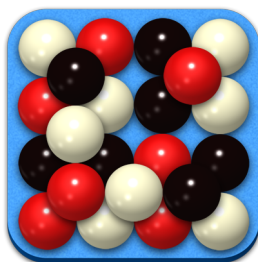
Start: The board starts empty.

Play: Continue placing a ball of any colour (white, black or red) at any playable point, such that no connected group of three or more same-coloured balls is formed.

Note that hidden connections count!

End: Your score is the total number of balls placed.

The following example shows a game with 22 balls placed.



This game is over as no more balls can be placed without forming a group of size three. Filling the board level is easy, but then things start to get tricky...

22 isn't a very good score. Can you do better?

What is the highest possible score?

Spin

渋

Enrique Blasco (2011)



1



2

Spin is a colour-flipping puzzle that does not involve stacking.

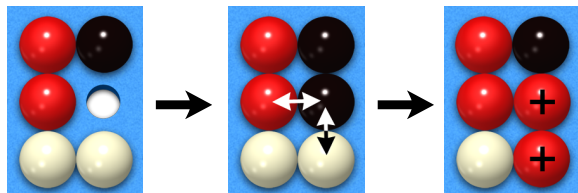
Start: The board starts empty. You start with a set number of balls of each colour in your hand (see the table below). Unused balls remain in the bag as a resource pool.

Play: Each turn, place a ball from your hand on an empty board hole. If the ball touches another ball of a different colour, then both are replaced with balls of the third colour, taken from the pool.

If the placement causes more than one colour mismatch, then you choose which mismatching pair to replace.

End: You win if every ball on the board is the same colour after the last ball has been placed from your hand.

Consider the following position. The black placement will cause two colour mismatches: black/red and black/white.

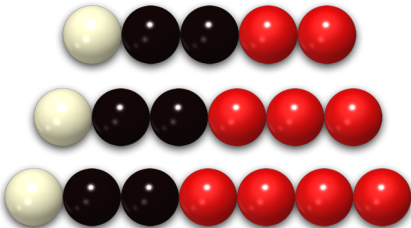


If the black/white pair is chosen, then the two offending balls are replaced from the pool (not the hand) with balls of the third colour, which in this case is red. This completes the turn.

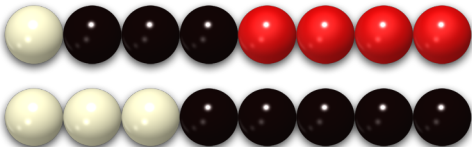
Interestingly, the two games in this book that do not involve stacking (Spin and Sporing) both involve colour flipping.

Starting Hands for Spin

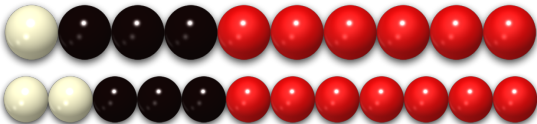
Very Easy



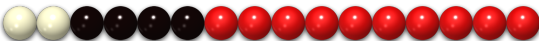
Easy



Medium



Hard



Spalone



Cameron Browne (2012)



1



2

Spalone is the solitaire version of Spanic.

Start: The board starts empty. Place 10 marbles of each colour (white, black and red) in a bag.

Play: Continue drawing a ball from the bag at random, and placing it on either:

- 1) an empty board hole, or
- 2) a platform containing at least two balls of that colour.

End: Win by completing the pyramid.

The following game has been lost as the player has drawn a white ball and cannot place it, since there are no board holes or platforms with at least two white balls.



Like Spuzzle, it is easy to complete the board level. But stacking is difficult and subject to the whim of the random draw, especially for the last few moves.

The random draw means that some games will be easy, but that some may not be solvable. Patience may be required.

Conclusion

6x6 Games



While the charm of Shibumi lies largely in its simplicity and the unexpected depth that can emerge from the small 4x4 board, it can be interesting to see how some of these games scale to larger boards. For example, Spargo uses exactly the same rules as its 6x6 counterpart Margo, but is quite different in character when played – if anything, the game is easier to learn on the larger 6x6 board!



6x6 Margo set

The Margo set from [nestorgames](http://nestorgames.com) is the ideal way to play Shibumi games on a 6x6 board. Both sets use the same manufacturing process and components, and all parts are interchangeable between them.

Néstor can supply custom boards for any required size. Bearing in mind the degree of complexity that pyramidal stacking adds to even a 4x4 board, imagine the depth achievable with an 8x8 or even 10x10 pyramid. Attempting such games would take a lot of balls.

Afterword



This book highlights the diverse range of games possible with the Shibumi set. The set was released in October 2011, only a few months before the first edition of this rule book, and there are already enough games to keep any player occupied for a long time.

If you come up with new games, or improvements on old ones, please don't hesitate to contact us – your creations could make the next edition of this rule book. Designing new Shibumi games is a fascinating game in itself, and we believe that there are some masterpieces out there just waiting to be discovered.

We hope that you enjoy the games in this collection, and that it helps make good use of your Shibumi set. Meanwhile, stay tuned for the *Shibumi Rule Book Volume 2: Synthetic Games*, which will list new games automatically generated by computer, as they emerge.

Cameron and Néstor
London / Zaragoza
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