

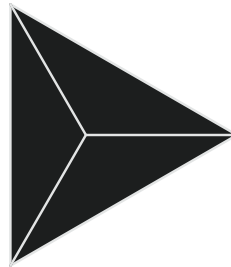
TRI

TRI is an abstract strategy game wherein two players compete to control two of three key territories. Players must carefully place and move pieces or rotate parts of the board to gain control of territory, accelerate their piece expansion, or capture their opponent's pieces. TRI combines the gradual coercion of Chess and the elegant surround-to-capture rules of Go with a visually compelling and strategically interesting board composed of triangular spaces atop mutable diamond-shaped pieces.

TRI

GAME DESIGN ONE
FALL 2015

Ben Sironko
Burgess Voshell
Chris Chung
Denver Coulson
Sam Von Ehren



OVERVIEW

TRI is an abstract strategy game which features a constantly reconfigurable board and unique geometry in a Go-like gameplay system.

RULES

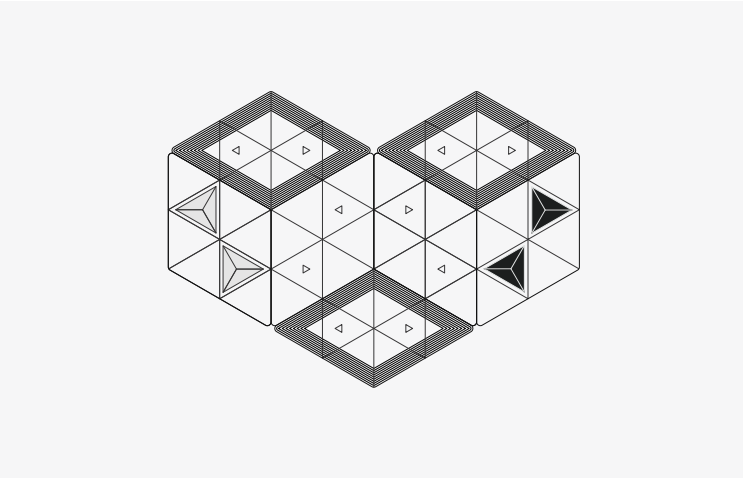
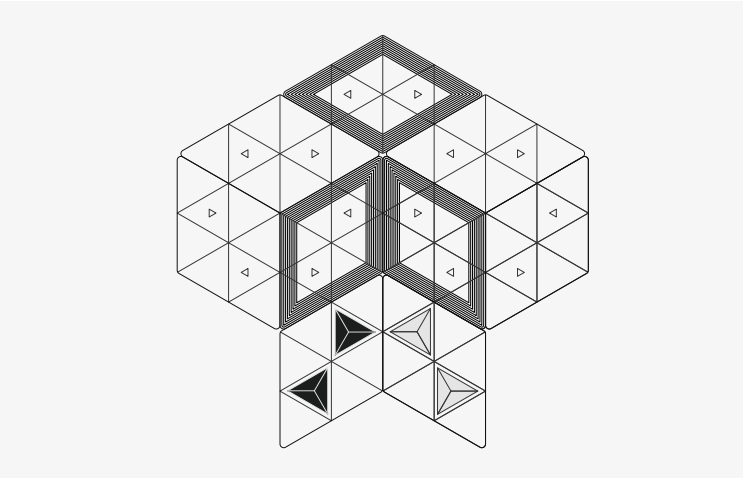
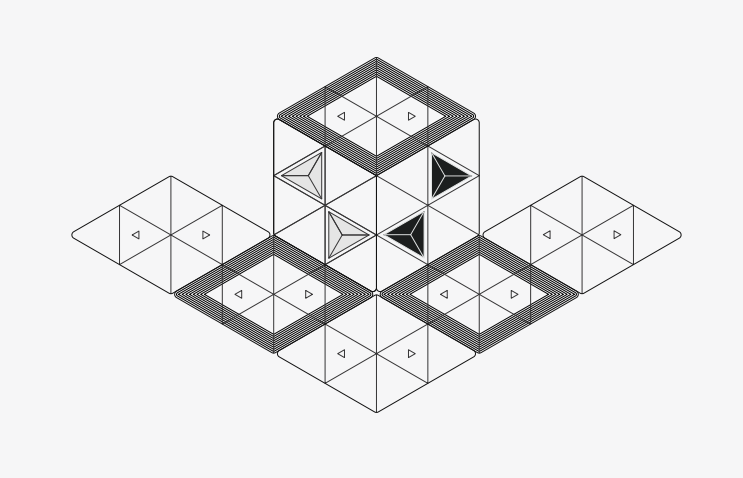
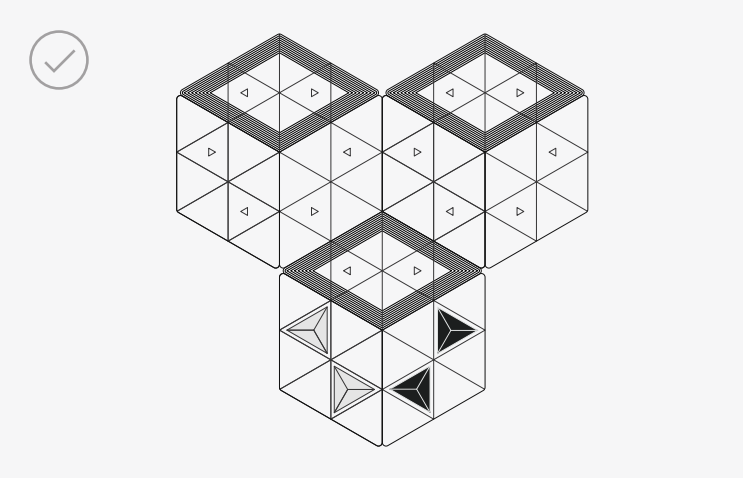
FOR TWO PLAYERS

MATERIALS

- 30 white pieces
- 30 black pieces
- 9 diamond shaped board tiles, called islands

SETUP

- Place islands in one of the formations shown here
- Place your pieces in the specified triangles



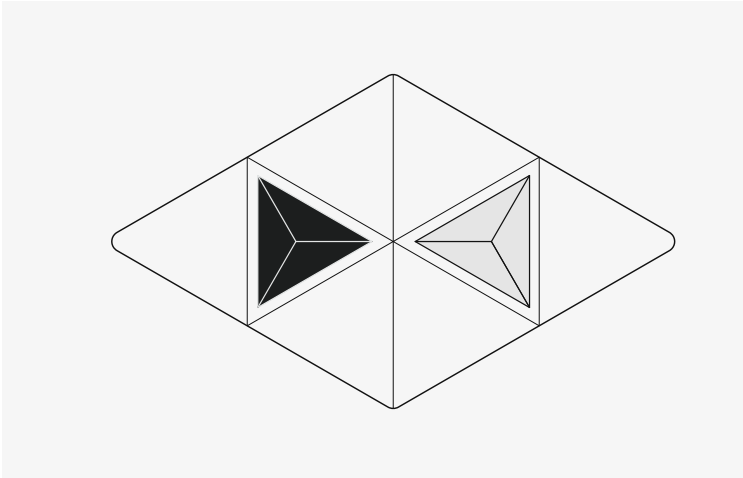
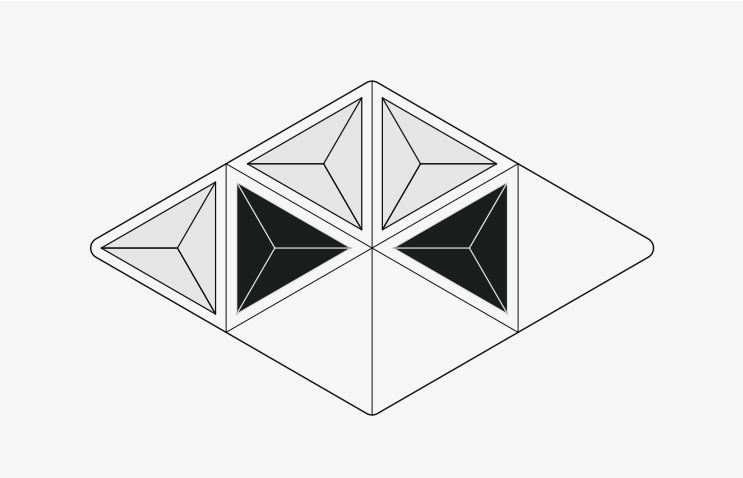
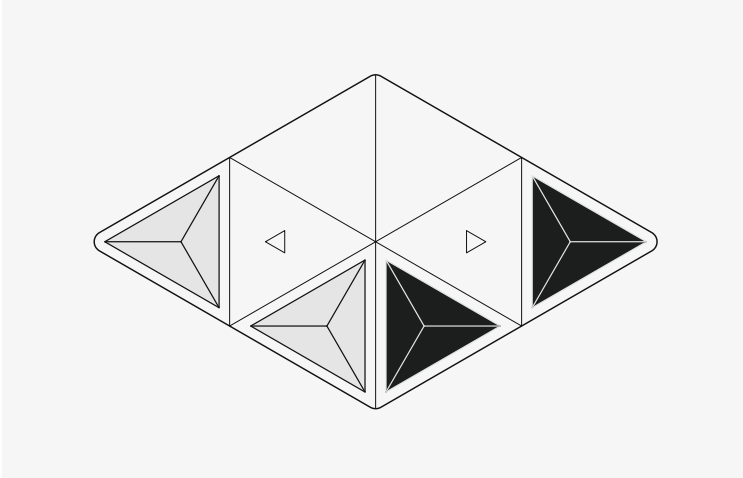
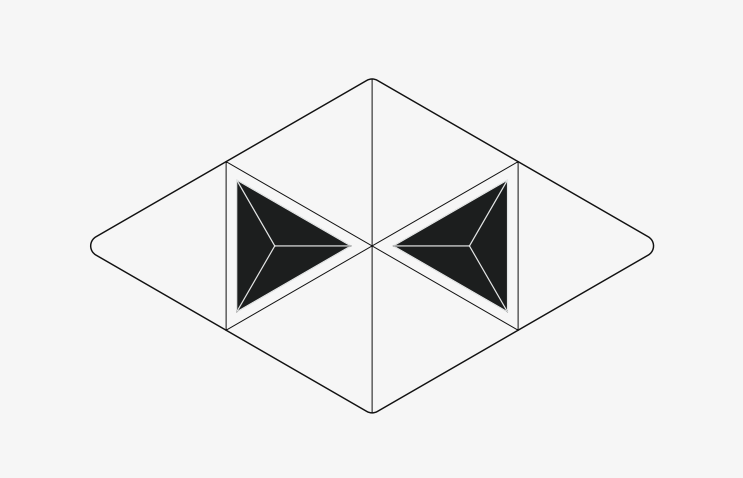
RULES

OBJECTIVE

Gain control of two key islands. Key islands are denoted by a lined border.

ISLAND CONTROL

An island is considered under your control if the you occupy the two center spaces of the island, marked with a small triangle.



Above column:
Black controls the island

Above column:
No one controls the island

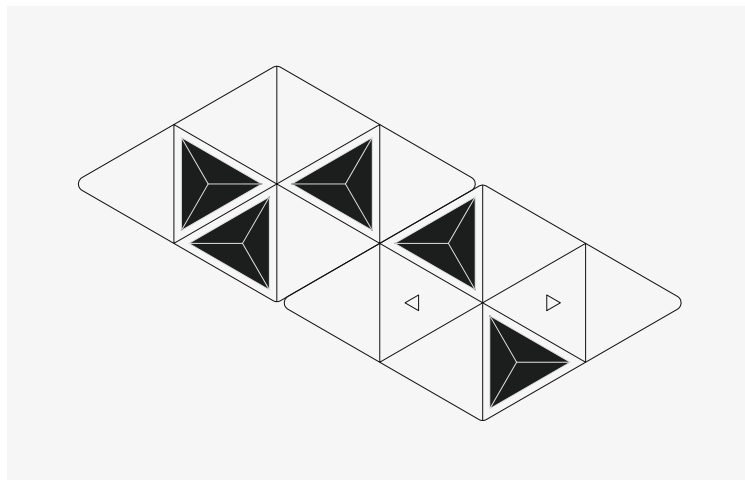
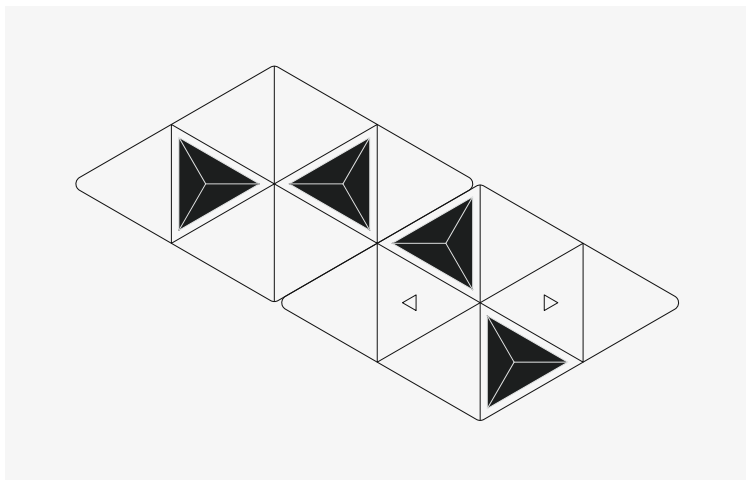
RULES

ANATOMY OF A TURN

EXPANSION

Turns are made up by two phases: **expansion** and **action**

The expansion phase requires you to place one of your game pieces on each island you control. If the island has no more spaces available after the expansion phase, then you lose the two center spaces of the island. This would cause you to lose control of that island. **Expansion does not occur on key islands.**



ACTION

In this phase, you gain a number of actions equal to $1 +$ the number of islands you control. For example: if you control two islands, you have 3 actions. Actions can be spent in two ways:

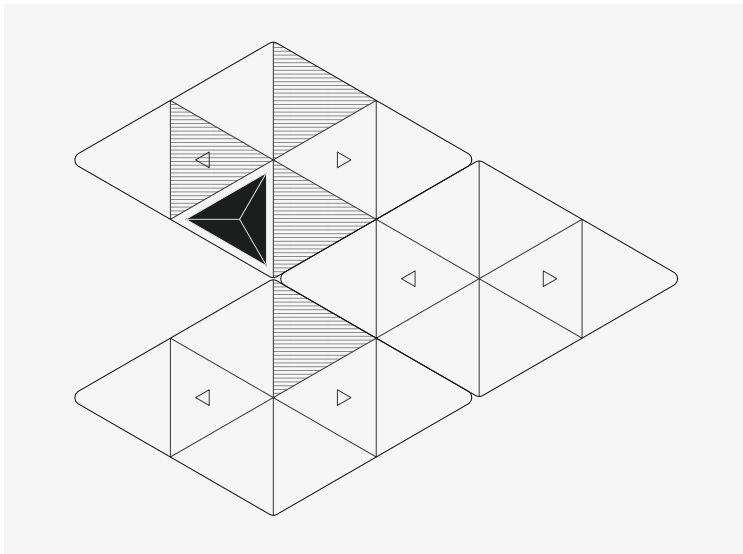
- Move a piece
- Rotate an island

You are required to use all of your actions each turn. Order of actions does not matter.

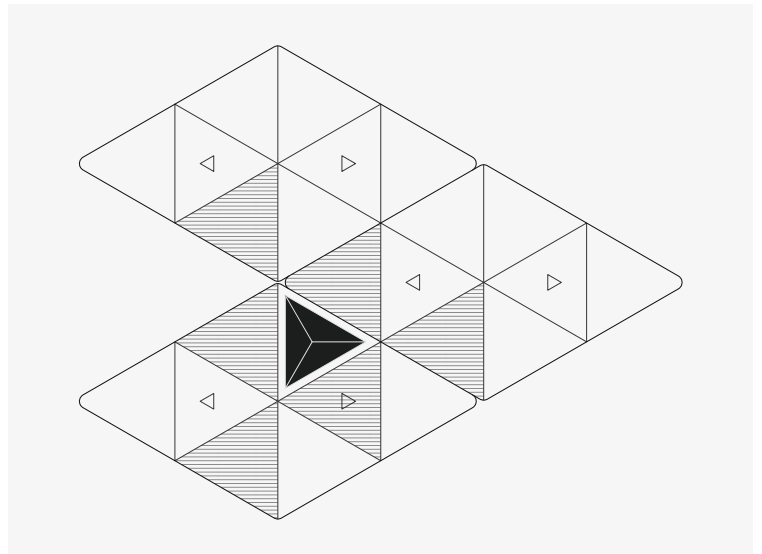
RULES

MOVEMENT

Pieces can be moved across the edges and points of triangles. Whenever a piece is moved, captures are immediately assessed. We will discuss this in depth under the *capturing* section.



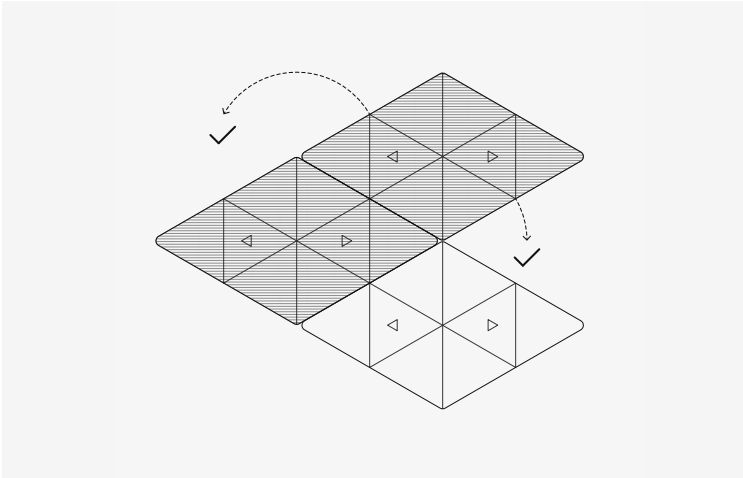
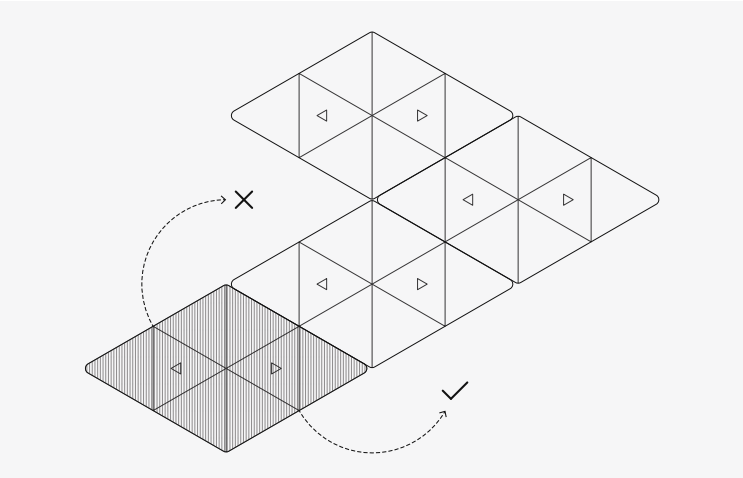
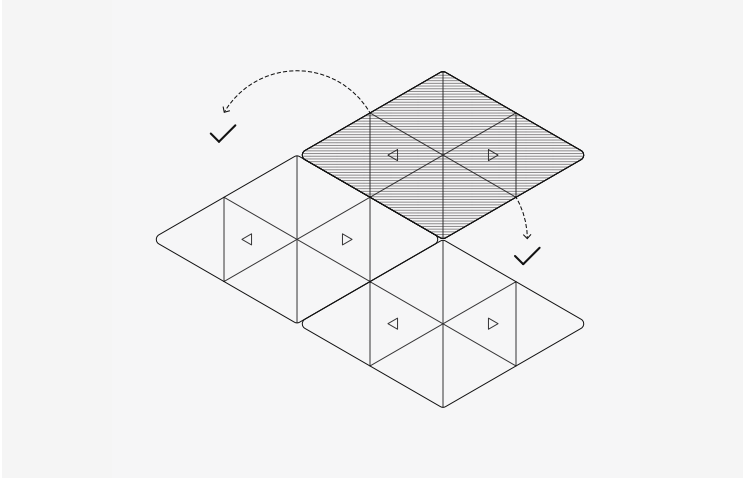
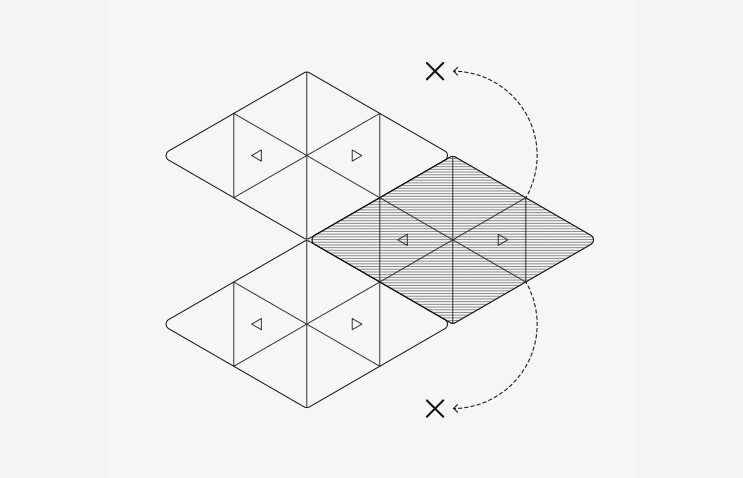
Available movements are shaded



RULES

ROTATION

An island may be rotated around any connecting joint. **You are not allowed to rotate islands that your opponent controls.** When rotating, the island must stop once it connects to another island along one edge. You may rotate multiple islands at once but each island counts as an action.

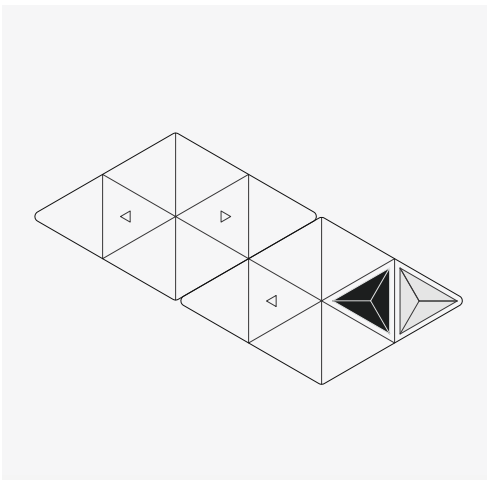
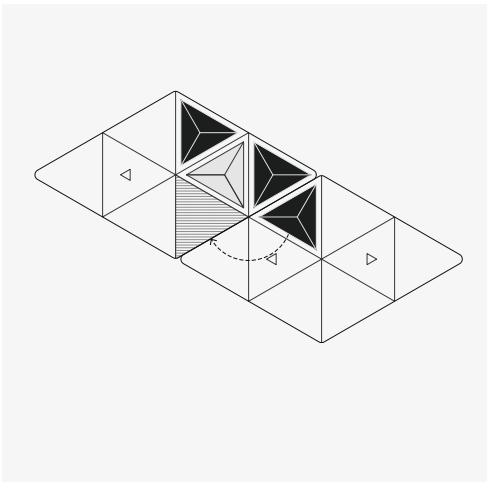


The tiles being rotated are shaded

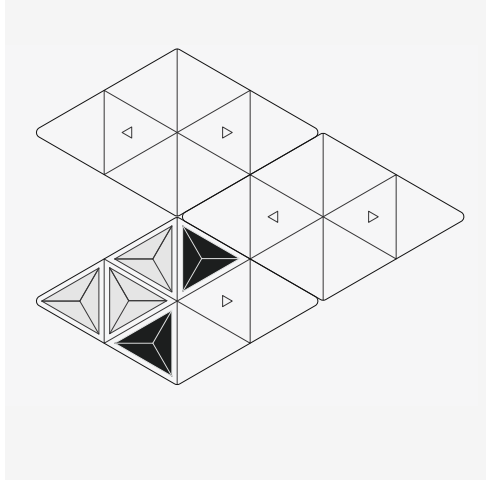
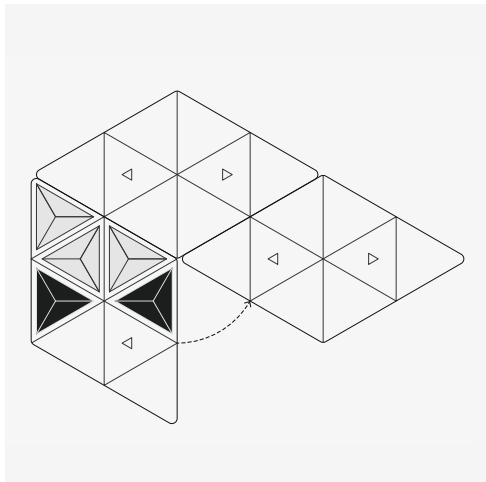
RULES

CAPTURING

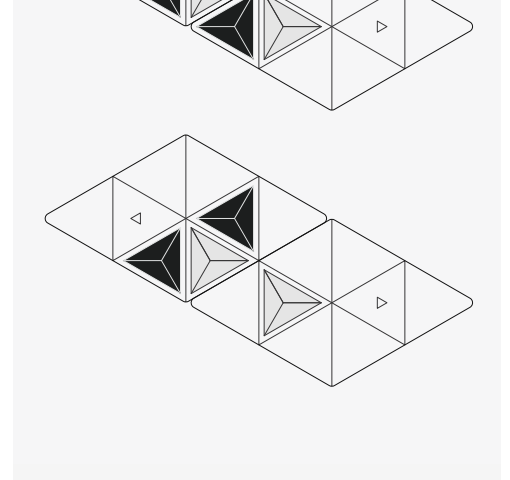
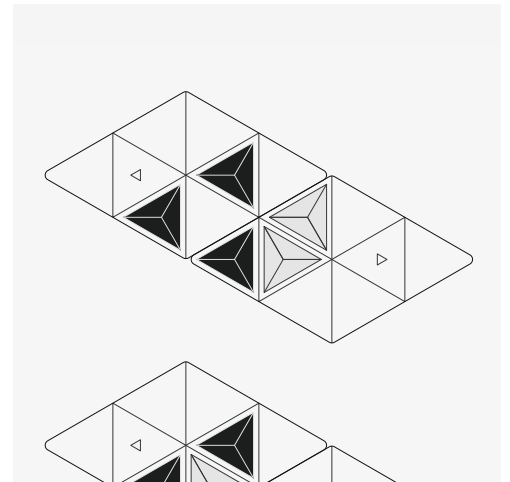
Capturing is an integral part of gaining control of the board. A piece is captured when it has no free edges or “liberties”. For a liberty to count, the edge must connect with another triangle; spaces along the sides of islands have fewer liberties if they are not connected to other islands. Between every movement and rotation you perform, capturing is possible. The captures against your opponent happen first. Once those captures are complete, if any of your pieces are still in a state of capture, they are taken.



Top diagram: white will be captured
Bottom diagram: white is captured



After rotation, white is captured



White captures first on their turn, then black

DESIGN STATEMENT

The design of TRI was a long, winding process of tuning and playtesting. Every decision regarding the game's mechanics dramatically affected the strategy, tactics, and feel of the game. At times it felt like practically any design choice created an entirely new game.

We started our design path with a few basic ideas. We wanted to create something with an atypical board design, an emphasis on strategy over tactics, and a heavy emphasis on growth. We also wanted the board to be more than a canvas for play, whether that meant it grew, folded, or rotated we wanted the player to constantly view it in new ways. We explored several different themes to fit these goals including black holes, spacetime, beehives, transportation, crystals, fire, and much more. After some deliberation, our design narrowed in on spacetime. Players could fold the board to change its spatiality, creating and destroying movement options in the process. We created triangular spaces on a hexagon cutout with normalized units as our initial prototype. The spatiality and uniformity of units seemed to lend itself to the capture and placement rules of Go, so we tried those out. Folding and capturing was interesting but the board quickly became unreadable. We tried to alleviate this with different asymmetrical shapes but found the board even harder to read. The triangle spaces seemed to work but board readability and the looming question of crafting the board deterred us from following that path.

At this point, we began to explore other verbs. We eventually decided to split the board into different "islands" that could be connected in different ways. Players had the ability to rotate and place on islands using "fliberties", a portmanteau of "Fold" and "Liberties". Fliberty was a way to judge how many placements and rotations you have on a given turn. A player starts each turn with 3 fliberties. A rotation cost one fliberty, and placement costs the number of liberties the piece would have at the given location. So placing along an edge cost one or two fliberties, placing in the center cost three fliberties if not blocked on any side.

Rotating the islands with these placement rules provided an interesting and dynamic game of capture. The midgame felt great but we found the game never ended. It turned out that defending territory would gradually introduce weaknesses in structures, allowing massive reversals. Capturing could not be the central goal.

We next tried shifting the game's goal to control of over 50% of the islands. Island control was done by controlling key positions on each island that were shaded darker. Each island had a different number of key positions at varying locations to create more dynamic strategies during play.

Unfortunately, this ruleset resulted in an extremely long game that also rarely ended. We also found the fliberty system

frequently caused analysis paralysis. Every choice felt ominous because of the difficulty in perceiving an opponent's next moves. Players had to assess every action and which actions were actually possible with the fliberties allotted. Additionally, we found that the rotation rules and island shape caused a lack of variation in shape of the board.

At this point, we made big changes to the game, iterating over each decision as we went. We switched island shapes from triangles to smaller diamonds simultaneously adding more islands to allow more variation in the game's layout. We likewise dropped fliberties and began to explore piece movement instead of placement. Placement appeared to undermine rotation, because it was usually much more powerful to place than rotate in a given turn. Movement on the other hand makes rotation necessary. Rotation gets you to new locations of the board quickly and allows you to circumvent walls of opponent pieces. With placement removed, we had to create a new way of generating pieces. We had noticed that the center triangles on a diamond were really hard to capture and usually meant effective control of an island, so we made this an official definition of control, and created a new rule whereby controlled islands would create pieces every turn.

The game was more interesting in the early and late game but seemed to drag in the middle. To push the game towards resolution, we simplified the player's goals and added some positive feedback. Players now only have to control 2 of 3 possible victory islands. This change directed play more and resolved the game before it got swing heavy. Additionally for every controlled island, players get an additional action per turn. This final change struck the perfect balance of assuring the game resolves without assuring the leading player a victory.

As can be seen, we went through numerous iterations of the game exhausting all mechanics, ideas, and tests we could. Many of these ideas we simply do not have the room to go into. We explored placement to adjacent pieces, various forms of movement, placement rules, rotation rules, and much more. Overall, we feel we came to a decent design that has a compelling balance of strategy, tactics, and growth that allows both players to progress and come to a timely conclusion.

