



HEX

VARIANT LIBRARY

Connect your two edges across a diamond of hexagons

8 VARIANTS	2 PLAYERS	8+ AGE
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OVERVIEW

Hex is a two-player connection game played on a rhombus-shaped board of hexagonal cells. Each player is assigned two opposite edges of the board and takes turns placing a stone of their colour on any empty cell. The first player to form a connected chain of their stones linking their two edges wins. A draw is impossible due to the board's topology.

Independently invented by Piet Hein (1942) and John Nash (1948). The game has deep mathematical properties and was one of the earliest games proven to have a first-player winning strategy (by strategy-stealing argument), though no efficient strategy is known.

VARIANTS

- ♦ [Y](#) — Triangular hex board. Win by connecting all three edges with a single chain.

ATTRIBUTION

Hex. Invented independently by Piet Hein (1942, Denmark) and John Nash (1948, Princeton). Public domain. Rules confirmed from Wikipedia and BGG.



Printed 22 July 2026

V0.1.0

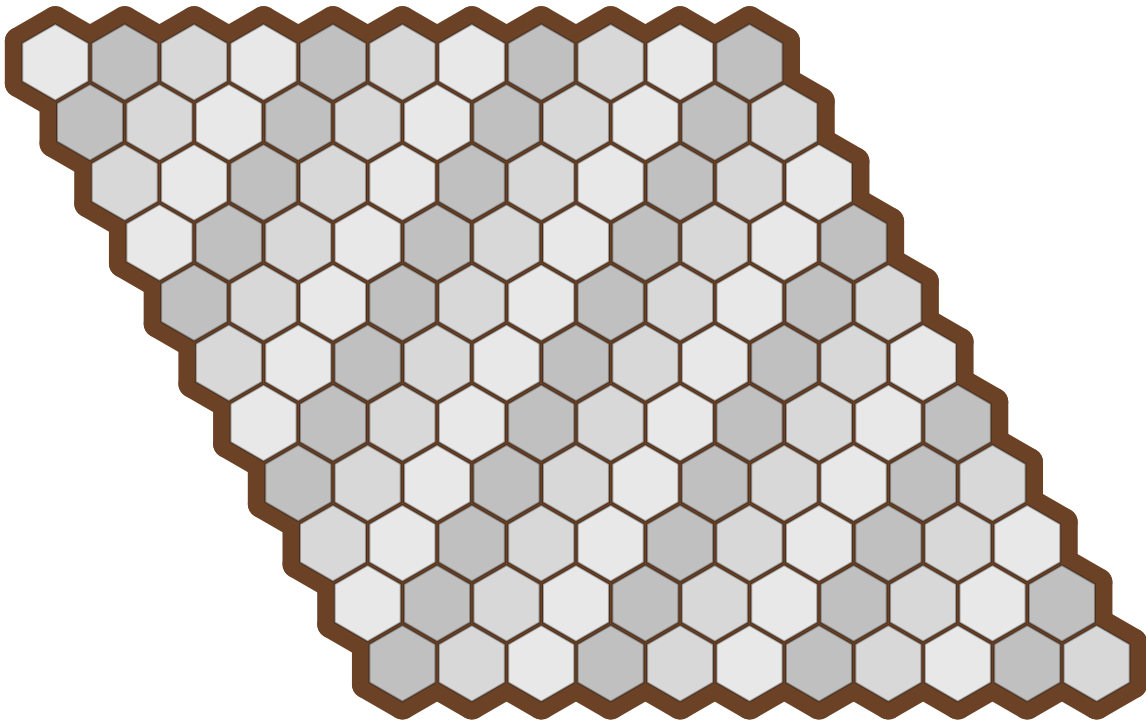
HEX · VARIANT 1 OF 8

Hex (11×11)

11×11 rhombus
BOARD

2
PLAYERS

HEX (11×11)



Hex (11×11) — standard tournament board

<https://engine.moddable.games/play/?game=hex&variant=standard>

The standard tournament size for Hex, used in all major competitions and online play. The 11×11 board provides 121 cells, offering enough depth for strategic play while keeping games to a manageable length (typically 20-40 minutes for experienced players).

RULES

Two players (Black and White) alternate turns placing one stone of their colour on any empty hexagonal cell. Black connects the top-left and bottom-right edges; White connects the top-right and bottom-left edges. The first player to complete an unbroken chain of their stones linking their two assigned edges wins.

A draw is mathematically impossible: every completed board has exactly one winner (proven by the hex theorem).

SWAP RULE

To offset the proven first-player advantage, the swap rule (also called the pie rule) is standard. After Black's first move, White may choose to either play normally (place a White stone) or swap colours, taking ownership of Black's opening stone. This discourages Black from opening with an obviously strong move.

STRATEGY NOTES

Centre cells are strongest. The acute corners (where your two edges are closest) are critical defensive positions. Ladder formations, bridges (two stones one apart that cannot both be blocked), and edge templates are fundamental tactical tools.

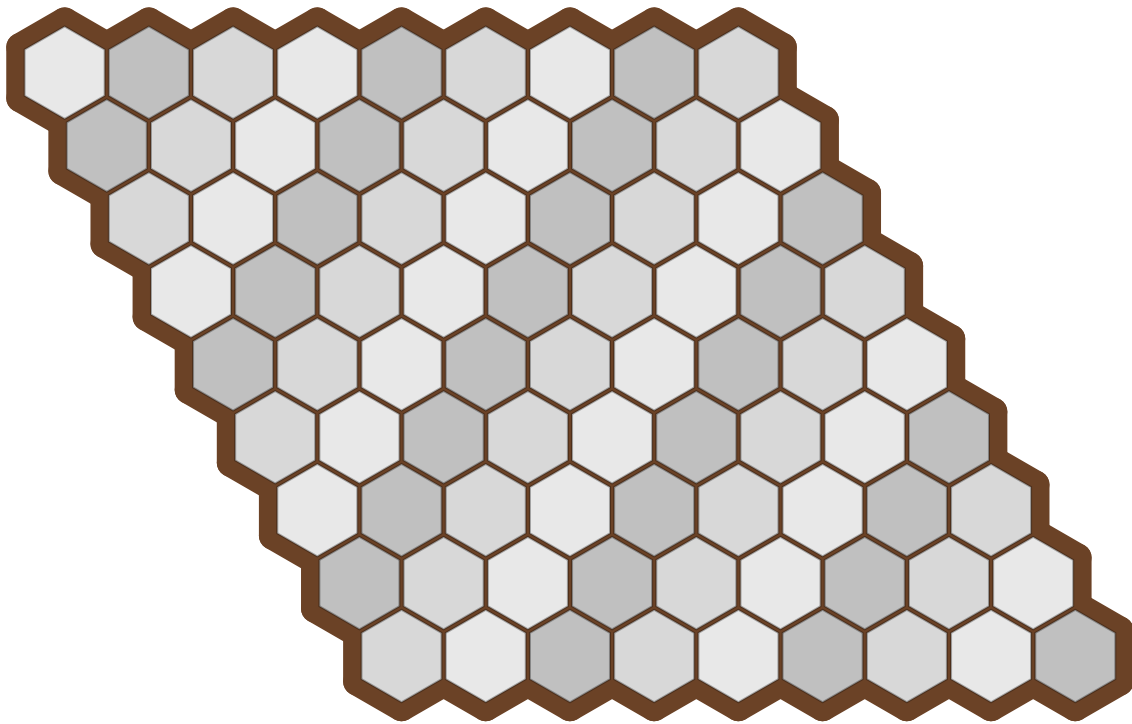
HEX · VARIANT 2 OF 8

Hex (9×9)

9×9 rhombus
BOARD

2
PLAYERS

HEX (9×9)



Hex (9×9) — compact board

<https://engine.moddable.games/play/?game=hex&variant=9x9>

A smaller board for quicker games. With 81 cells, games are more tactical than strategic and typically finish in 10-20 minutes. Popular for teaching Hex fundamentals and for rapid-play formats.

DIFFERENCES FROM STANDARD

Same rules as 11×11 Hex. The reduced board size means that first-player advantage is more pronounced, making the swap rule especially important. Edge templates and ladders are shorter, so positional errors are punished more quickly.

Commonly used on online platforms as a “blitz” format and recommended for beginners learning connection game fundamentals.

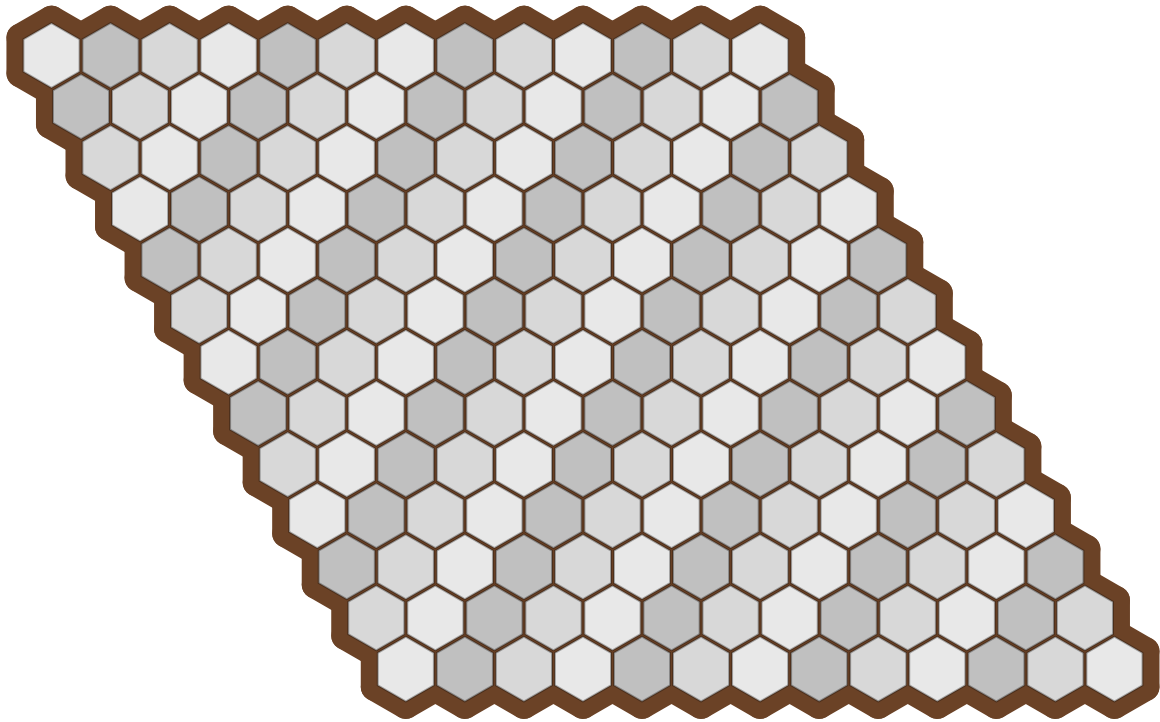
HEX · VARIANT 3 OF 8

Hex (13×13)

13×13 rhombus
BOARD

2
PLAYERS

HEX (13×13)



Hex (13×13) — large board

<https://engine.moddable.games/play/?game=hex&variant=13x13>

A larger board for deeper strategic play. With 169 cells, multiple independent fronts can develop simultaneously, making defensive play more viable and rewarding long-term positional thinking.

DIFFERENCES FROM STANDARD

Same rules as 11×11 Hex (including swap rule). The additional space allows ladder fights to extend further before reaching an edge, and reduces the proportion of the board that edge templates can cover. First-player advantage is slightly reduced. Games typically run 30-60 minutes. Popular on online platforms as the next step up from tournament standard.

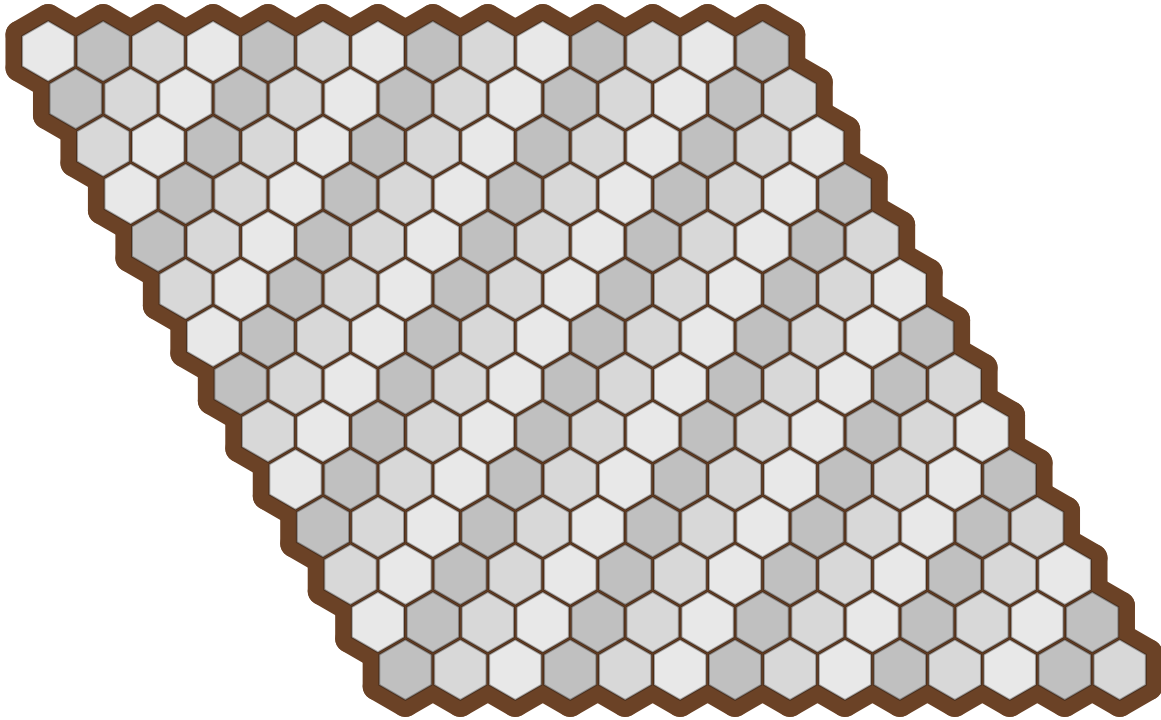
HEX · VARIANT 4 OF 8

Hex (14×14)

14×14 rhombus
BOARD

2
PLAYERS

HEX (14×14)



Hex (14×14)

<https://engine.moddable.games/play/?game=hex&variant=14x14>

Alternative large-board format with 196 cells. Used in some international tournament settings as a compromise between the standard 11×11 and the marathon 19×19.

DIFFERENCES FROM STANDARD

Same rules as 11×11 Hex (including swap rule). The even-numbered board size means neither player has an exact centre cell available, which subtly affects opening theory. Similar strategic depth to 13×13 with slightly longer games.

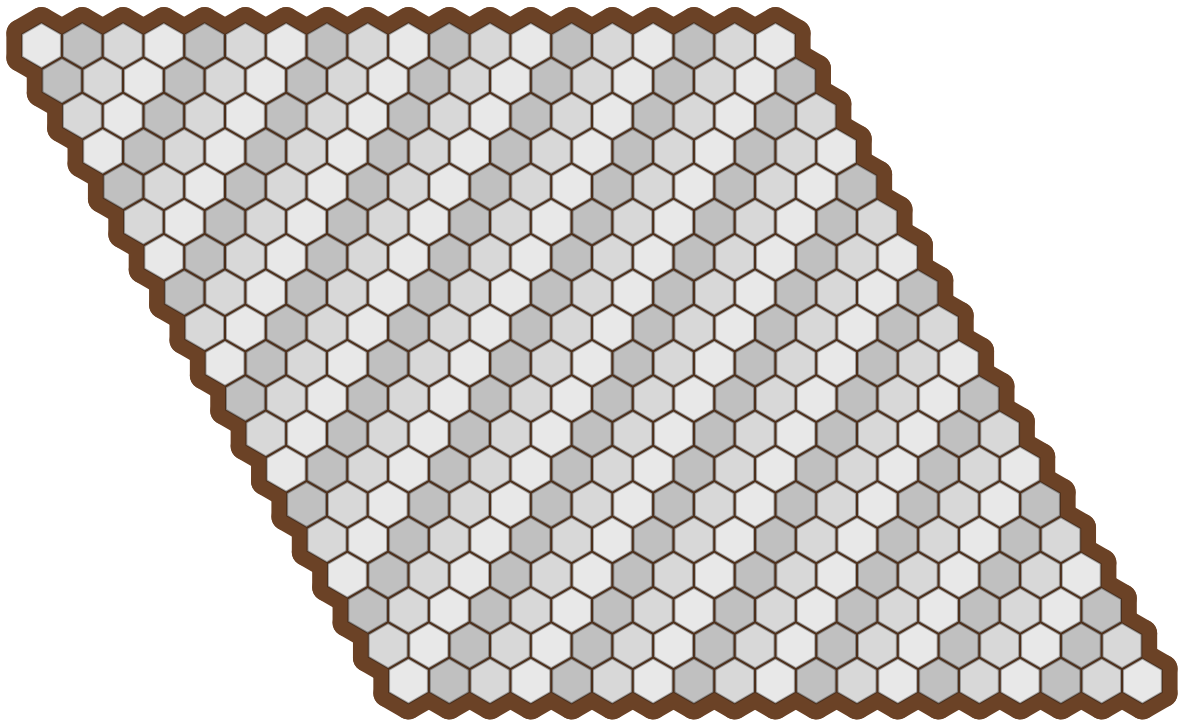
HEX · VARIANT 5 OF 8

Hex (19×19)

19×19 rhombus
BOARD

2
PLAYERS

HEX (19×19)



Hex (19×19) — maximum standard size

<https://engine.moddable.games/play/?game=hex&variant=19x19>

The largest standard board size with 361 cells (matching Go's 19×19 intersection count). Games can run well over an hour and develop extraordinary complexity. Rarely used in competitive play due to time constraints, but available for those seeking maximum strategic depth.

DIFFERENCES FROM STANDARD

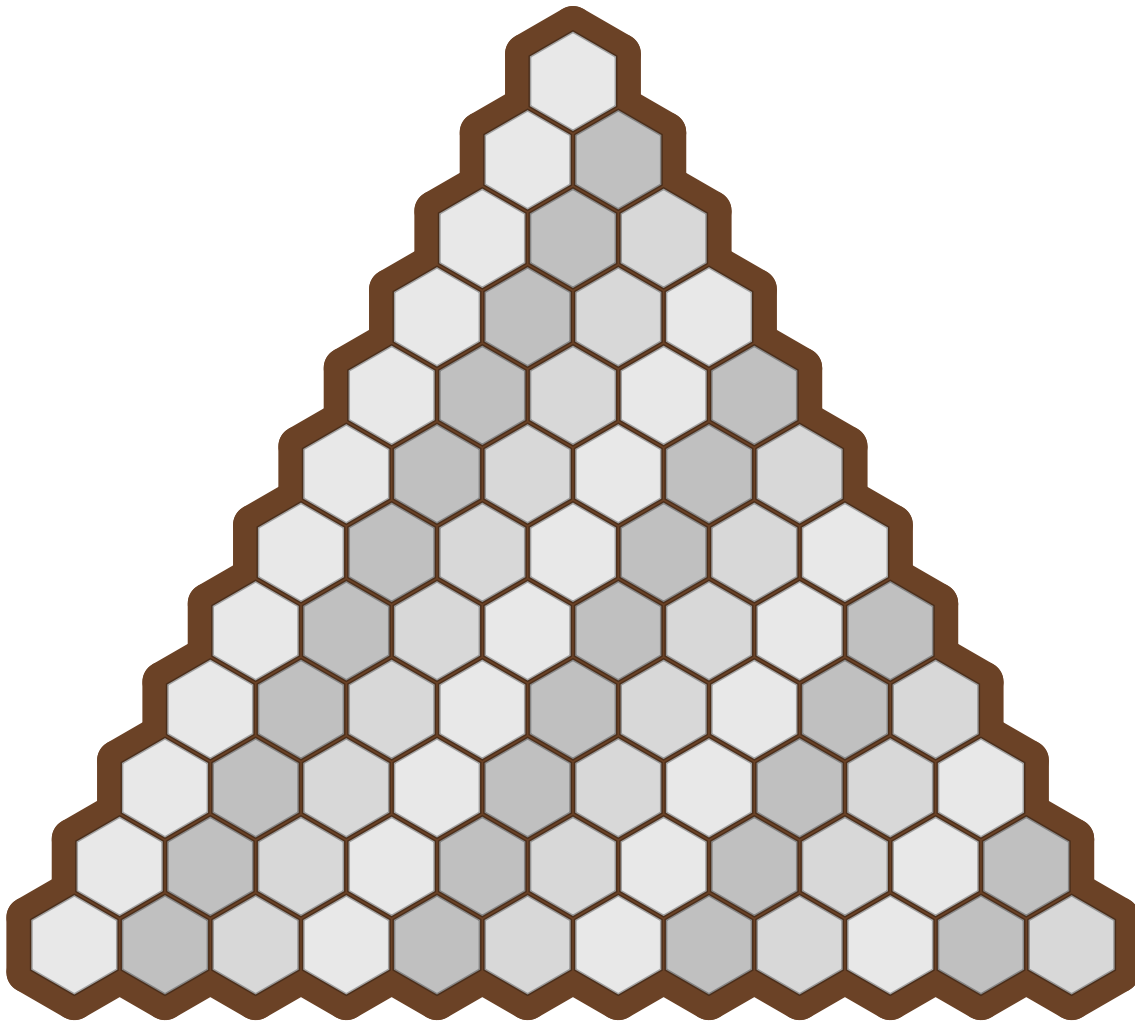
Same rules as 11×11 Hex (including swap rule). At this scale, local fights can be completely independent of each other for long stretches, and whole-board reading becomes impractical without deep experience. The swap rule is less decisive since even strong-looking openings leave vast unexplored territory.

HEX · VARIANT 6 OF 8

Y

triangular hex
BOARD

2
PLAYERS



Y — starting position

<https://engine.moddable.games/play/?game=hex&variant=y-game>

Invented by Claude Shannon and Craige Schensted in the 1950s. Played on a triangular board of hexagonal cells. Two players alternate placing stones. The first player to form a connected group touching all three edges of the triangle wins.

BOARD

A triangular grid of hexagonal cells. Standard sizes range from side-length 9 to 15. Each edge of the triangle is one “side” — there are three sides total.

Corner cells touch two edges simultaneously.

SETUP

The board starts empty. Black plays first.

RULES

- 1 Players alternate placing one stone of their colour on any empty cell
- 2 Stones never move or are captured once placed
- 3 The first player to form a single connected group of their stones that touches all three edges wins
- 4 The swap rule applies: after Black's first move, White may choose to swap colours instead of placing a stone

KEY DIFFERENCES FROM HEX

CONCEPT	HEX	Y
Board shape	Rhombus/parallelogram	Equilateral triangle
Edges	4 (2 per player)	3 (shared)
Win condition	Connect YOUR 2 opposite edges	Connect ALL 3 edges
Corner ownership	Corners belong to one player's edges	Corners touch 2 edges (valuable)
Draw possibility	Impossible (Hex property)	Impossible (same topological guarantee)

WHY THIS TESTS THE ENGINE

Y generalises the connection-win mechanic from “2 edges, each owned by a player” to “3 edges, first to touch all three”. The engine’s `hasPath()` traversal needs to detect multi-target connectivity — not just “does a path exist from edge A to edge B” but “does a single group touch edges A AND B AND C”.

The topology must support a triangular hex grid (not just hexagonal or rhombus). The win-detection rule must be parametric over edge count, not hardcoded to 2.

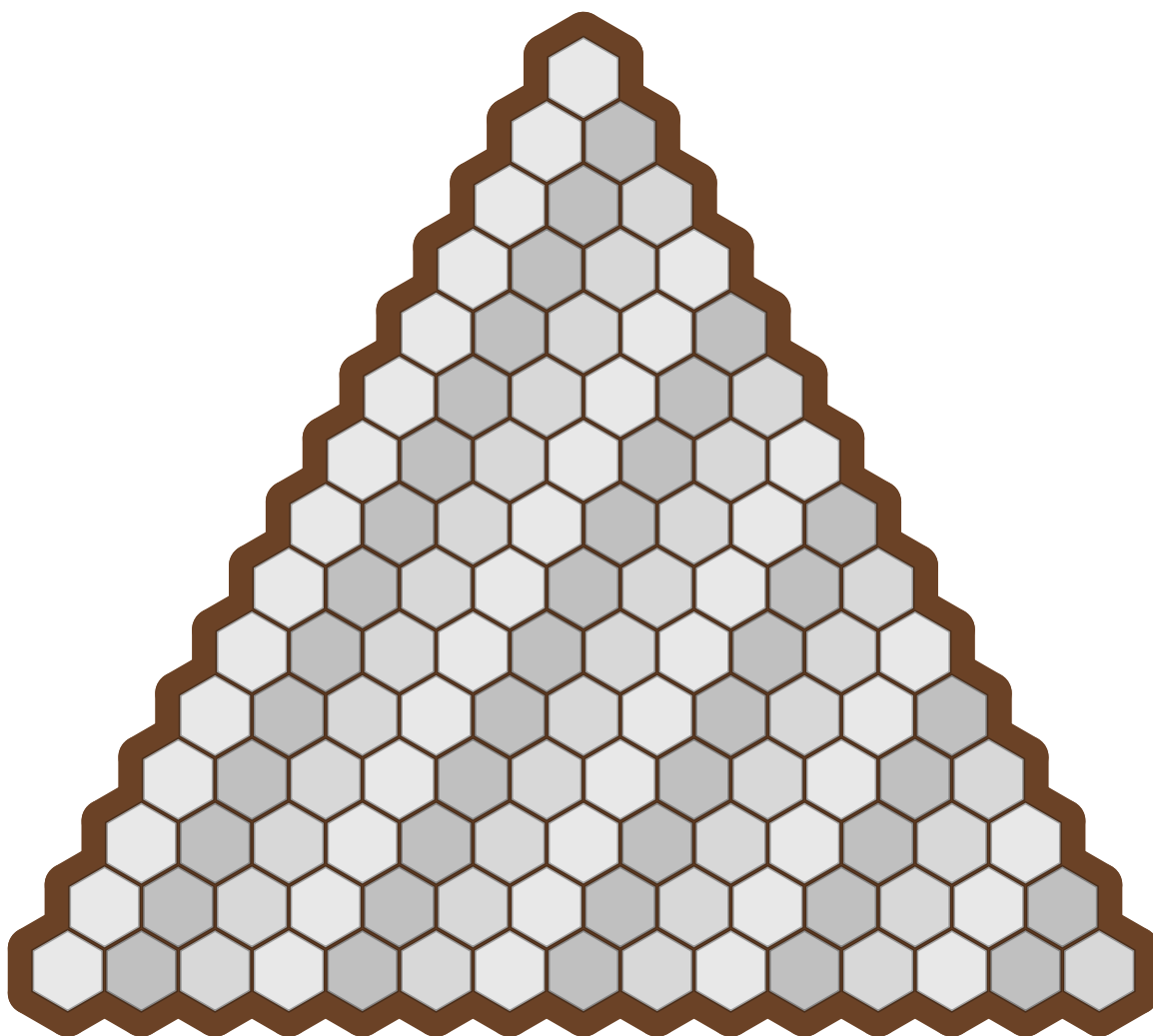
HEX · VARIANT 7 OF 8

Y (Large — 15)

triangular hex (side 15)
BOARD

2
PLAYERS

Y (LARGE)



Y — side-length 15 triangular board

<https://engine.moddable.games/play/?game=hex&variant=y-large>

Y on a side-length 15 triangular board. With significantly more cells than the standard size, games develop greater strategic depth and allow more complex multi-edge threats.

RULES

Same as standard Y: two players alternate placing stones on empty cells of a triangular hex board. The first player to form a connected group touching all three edges wins. The swap rule applies.

DIFFERENCES FROM STANDARD Y

The larger board means single-edge contact is easy to achieve, but completing the three-edge connection requires sustained positional pressure. Defensive play is more viable at this scale. Games run considerably longer.

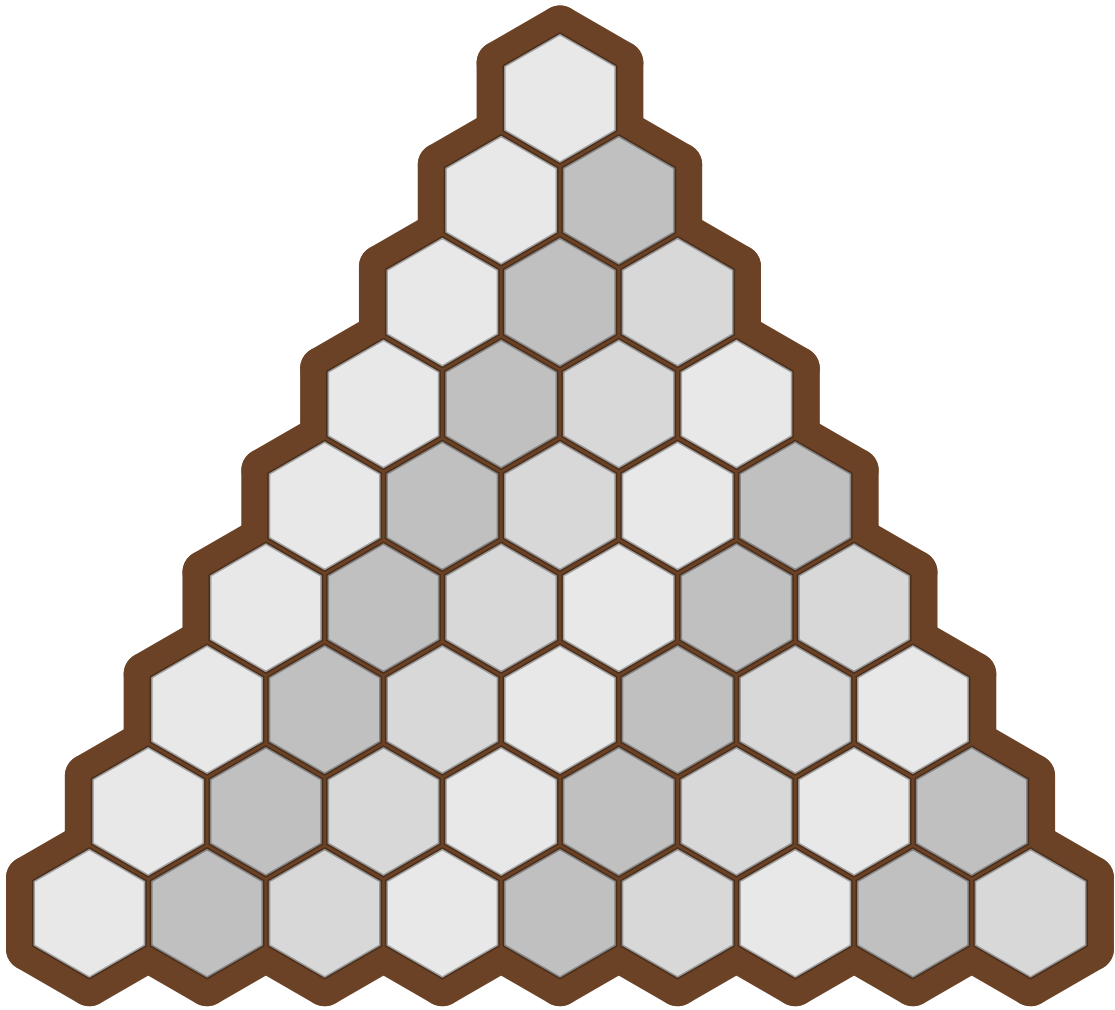
HEX · VARIANT 8 OF 8

Y (Small — 9)

triangular hex (side 9)
BOARD

2
PLAYERS

Y (SMALL)



Y — side-length 9 triangular board

<https://engine.moddable.games/play/?game=hex&variant=y-small>

Compact Y variant for quicker games. The smaller triangular board makes three-edge connections achievable in fewer moves, putting more emphasis on tactical reading than long-range planning.

RULES

Same as standard Y: two players alternate placing stones on empty cells of a triangular hex board. The first player to form a connected group touching all three edges wins. The swap rule applies.

DIFFERENCES FROM STANDARD Y

With fewer cells, most moves are within reach of at least one edge, making early contact inevitable. Games are decided by which player can efficiently connect their scattered edge contacts through the interior. Ideal for teaching Y fundamentals or rapid-play formats.