MCP SERVER | NO CODE | CLOUD HOSTED

Card Draw Probability Calculator MCP for AI Agents

Mastering TCG and CCG Card Draw Odds Calculation

Card Draw Probability Calculator helps TCG players figure out the math behind drawing specific cards. It uses hypergeometric distribution to calculate exactly how likely you are to hit your targets in a deck, giving you an edge at the table.

A+ Quality Score 100/100

tcg | ccg | probability | mtg | yugioh | hypergeometric

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vinkius.com/mcp/card-draw-probability-calculator

SCAN TO VIEW

The connectivity layer between AI and the world's software.

Vinkius sits between AI and every application. All communication passes through Vinkius Cloud via the Model Context Protocol (MCP) — with governance, observability, and security at every layer.

Your AI Connections Run Through Vinkius Cloud

The world's largest managed MCP catalog

Vinkius is the connectivity layer where AI connects to the software your business already runs. We handle the hosting, the security, the credentials, the uptime — you get agents that actually do things.

We operate the world's largest managed MCP catalog. Major SaaS platforms, CRMs, databases, and cloud providers — running, monitored, production-ready. This MCP server is hosted and maintained by the Vinkius Cloud for AI Agents.

> *The agent doesn't manage credentials, doesn't manage uptime, doesn't manage security. Vinkius does.*
>
> — Architecture principle

Four Pillars of the Vinkius Runtime

01 — Security by design

Credentials stay encrypted at rest via AES-256. The AI agent never touches raw keys — they're injected into a sandboxed V8 isolate at runtime. Actions are logged, and connections have an emergency kill switch.

02 — Built on MCP Fusion

This MCP server was built with **MCP Fusion**, the open-source framework (Apache 2.0) that powers the entire Vinkius catalog. Schema-as-firewall strips undeclared fields, compiled PII redaction runs at zero overhead, and cryptographic lockfiles produce git-diffable audit trails.

03 — Deterministic observability

Eight immutable metrics per endpoint: request volume, p95 latency, error rate, active connections, cost attribution. A live payload feed logs every tool call with mutation detection.

04 — Autonomous operations

Servers are deployed, monitored, and patched autonomously. New capabilities and security patches ship weekly. Zero-downtime deployments ensure continuous availability across all managed MCP servers.

AES-256	Ed25519	24h TTL	V8 Isolate
Encryption at rest	PKI vault signatures	Ephemeral session keys	Sandboxed execution

One Token. Instant Access.

Every MCP server on Vinkius is accessed through a **Connection Token**. Tokens are generated in the cloud dashboard and produce a unique MCP endpoint URL. Paste this URL into any MCP-compatible client — no SDK required.

A single token can serve **multiple AI clients simultaneously**, or you can issue separate tokens per client for granular access control. Each token tracks its own request count, last activity timestamp, and can be individually enabled or revoked.

MCP ENDPOINT

```
https://edge.vinkius.com/{token}/mcp
```

Claude · Cursor · VS Code · Windsurf · Grok · Gemini

Security Is the Architecture

Security in Vinkius is not a feature — it's the foundation of the runtime. The gateway enforces multiple independent protection layers between AI agents and third-party APIs.

01 — Ed25519 PKI Vault

Every workspace has an Ed25519 Master Key. Session keys are generated ephemerally (24h TTL) and signed by the Master Key. Credentials never leave the vault boundary.

02 — V8 Isolate Sandboxing

Tool code runs inside isolated-vm V8 isolates with 64 MB memory caps and per-request timeouts. No filesystem access, no network access except through the SSRF-guarded fetch bridge.

03 — SSRF Guard

All outbound HTTP requests are DNS-resolved and validated before execution. Private IP ranges (10.x, 172.16-31.x, 192.168.x, AWS metadata 169.254.x) are blocked at the network layer.

04 — DLP & PII Redaction

A ResponseGuard pipeline intercepts every tool response. Configurable redaction patterns strip sensitive fields (emails, SSNs, card numbers) before data reaches the AI agent.

05 — Cryptographic Audit Trail

Every request is signed into a SHA-256 hash chain with Ed25519 signatures. Events form a tamper-proof, SIEM-exportable forensic record.

06 — Honeytoken Trap System

Phantom credentials are injected into isolated environments. If a honeytoken is used outside Vinkius infrastructure, the server is quarantined instantly.

Emergency Kill Switch

EU AI Act Art. 14(1) Compliant

The kill switch is an **emergency halt** mechanism — not a simple toggle. When triggered, it executes three actions atomically:

01 — Server deactivated

The MCP server is immediately taken offline across the entire cluster.

02 — All tokens revoked

Every connection token is invalidated. Total lockout — reconnection blocked until new tokens are issued.

03 — WebSocket connections killed

Active connections terminated via Redis pubsub broadcast. Propagates to every runtime node in the cluster.

Full Visibility. Zero Guesswork.

The Vinkius cloud dashboard includes a full MCP Governance suite — real-time analytics and security controls for production AI operations.

Control Plane

KPI dashboard with request volume, latency, success rate, token consumption, and AI-generated operational briefings.

Agent Activity

Which AI clients are connecting, how often, and what they're doing — real-time session tracking.

FinOps

Cost tracking per tool, payload compression savings, budget optimization signals, and consumption trends.

Tool Health

Slowest and most error-prone tools, with actionable root-cause insights and performance baselines.

Firewall & DLP

PII redaction activity, sensitive data protection counters, and security event timeline.

Incident Log

Error trends, failure rates, status-code breakdowns, and forensic audit trail access.

> Get started at **cloud.vinkius.com** — connect your AI agent in under 60 seconds.

Card Draw Probability Calculator MCP

4 tools available
Cloud-hosted on Vinkius

This MCP gives deep statistical analysis to competitive card game players. Instead of guessing or relying on gut feelings about draw rates, you get precise mathematical probabilities for every scenario. You can use it to calculate the likelihood of drawing key cards over several turns, which is critical when building a decklist or strategizing a mulligan.

Core Capabilities

01 — Calculate card draw chances

Determine the probability of pulling specific target cards from your remaining deck pool.

02 — Generate full distribution tables

See a complete breakdown of all possible drawing outcomes, from zero targets to maximum targets.

03 — Evaluate hand retention decisions

Get an objective recommendation on whether you should keep your current opening hand or take the mulligan based on expected quality.

04 — Update deck state after effects

Track changes to your card pool when effects like scrying or thinning remove cards from the draw pile.

One Click on Vinkius — From Prompt to Execution

Available at **vinkius.com/mcp/card-draw-probability-calculator** — connect your AI agent in three steps.

01 You input the parameters: how many total cards are in the deck, how many target cards you need, and how many draws you plan.

02 The MCP runs the hypergeometric distribution calculation against those numbers to find the mathematical odds of success.

03 Your agent returns a precise percentage or probability range, telling you exactly what chance you have.

The bottom line is that it replaces complex manual combinatorial math with one simple command.

Built For

Any competitive player who treats card games like science. If you spend hours analyzing deck archetypes or debating optimal opening hands, this MCP belongs in your toolkit.

Competitive TCG Player

Uses the calculator to model ideal draw scenarios before tournaments, ensuring their deck composition maximizes target card chances.

Deck Builder/Analyst

Tests different card ratios and inclusion rates by running probability simulations. They use it to verify if a new strategy is statistically viable across various draw counts.

Game Theory Enthusiast

Applies advanced probability models to understand the deep mathematical balance of card game mechanics, especially when evaluating opening-hand decisions or resource scarcity.

What Changes When You Connect

01 Know the real odds before you play. Instead of hoping, use `calculate_draw_probability` to get a precise percentage chance of hitting your key cards.

02 Improve your opening hands immediately. Let the `evaluate_mulligan_decision` tool tell you if that gut feeling about mulligans is statistically sound.

03 Understand every single outcome. The `get_distribution_table` gives you a full breakdown, letting you see how unlikely it is to draw nothing or too much.

04 Adapt mid-game. After effects like scrying change your pool; use `track_deck_progression` to keep your deck's math accurate throughout the match.

05 Stop guessing at board state. By modeling draw rates, you can build strategies that are mathematically guaranteed to perform better than luck alone.

Real-World Applications

Did I include enough rare cards in my deck?

A deck builder wants to know if running 4 copies of a powerful land is worth the slot. They ask their agent to run `calculate_draw_probability` using their target card count and desired draws, getting an immediate, quantifiable answer on the viability of the ratio.

Should I pass up this mulligan?

A player gets a suboptimal opening hand. Instead of tossing it immediately, they prompt their agent to run `evaluate_mulligan_decision` with specific penalty parameters, receiving an objective recommendation that saves them from a costly mistake.

How does thinning affect my draw chance?

During a match, the opponent uses a card effect that thins your deck. The player immediately calls `track_deck_progression` to update their resource pool and recalculates their odds for the next turn, preventing an underestimation of risk.

I need to know my worst-case draw scenario.

A strategist wants a full picture of potential outcomes. They use `get_distribution_table` to see not just the average chance, but the exact percentage breakdown for drawing 0 targets versus drawing 3 or more.

Patterns to Avoid

Relying on memory

✗ AVOID

Guessing card draw rates based on how many times you've seen them in previous games, which leads to inaccurate deck planning and missed opportunities.

✓ INSTEAD

Instead of guessing, use `calculate_draw_probability` to input your exact parameters. This provides a verifiable percentage chance that accounts for the entire remaining card pool.

Ignoring game state changes

✗ AVOID

Calculating probabilities based on an initial deck size, even after powerful effects like scrying or removal have permanently altered the available cards.

✓ INSTEAD

Always run `track_deck_progression` first. This ensures your calculation engine is using the current, accurate card pool count, leading to reliable odds.

Treating mulligan decisions as instinct

✗ AVOID

Tossing a hand because it 'feels bad,' without knowing if the expected quality of the second hand actually improves your win rate.

✓ INSTEAD

Let `evaluate_mulligan_decision` do the heavy lifting. It objectively compares your current score to the anticipated score, providing actionable data.

The Right Fit

Use this MCP if you need rigorous, verifiable statistics for card game strategy. Specifically, use it when your decisions hinge on quantifiable risk assessment: Should I draw three cards or five? Is my opening hand worth keeping? When building a deck, do these rare lands actually hit hard enough to justify the cost? If you are primarily concerned with optimizing meta-game theory or cross-referencing probabilities across multiple card types, this is your tool. Don't use it if you just need general advice on which cards are 'good.' For simple recommendations ('play blue magic'), stick to a basic guide; you need the mathematical rigor provided by `calculate_draw_probability` and `evaluate_mulligan_decision` to truly optimize.

Card Draw Probability Calculator for TCG Decklist Analysis

Manually calculating card draw probability is a nightmare. You're clicking through deck builder tabs, consulting forums, and trying to mentally track hypergeometric distribution formulas just to figure out if running four copies of a specific land is actually worth the slot in your 60-card main deck. It takes hours of tedious math that you'd rather spend playing.

With this MCP, you simply tell your agent your target card count and draw size. The system instantly returns the probability, so you know exactly what odds you're facing without needing a spreadsheet or a physics degree. You get immediate, actionable statistical certainty.

Card Draw Probability Calculator for TCG Mulligan Optimization

Before this MCP, deciding whether to keep your opening hand felt like a gamble. You'd compare your current hand against vague 'feelings' or anecdotal advice from friends online. This guesswork leads to throwing away viable games because you couldn't prove the mathematical worth of keeping that initial draw.

Now, you prompt for an evaluation, and the system instantly gives you a score comparing what you have versus what you should expect after taking a mulligan. You stop gambling on 'feelings'; you start winning with data.

4 Card Draw Probability Tools for TCG Deck Analysis

These tools let you calculate complex draw probabilities, evaluate hand retention, and track deck changes in any competitive card game.

#	TOOL	DESCRIPTION
01	`track_deck_progression`	Updates your available card pool state after effects like scrying or thinning have altered the deck composition.
02	`get_distribution_table`	Generates a full, detailed table showing the probability for every possible number of target cards you might draw.
03	`calculate_draw_probability`	Outputs the specific percentage chance of drawing at least one or more designated target cards in your next set of draws.
04	`evaluate_mulligan_decision`	Compares your current hand's quality against expected post-mulligan quality to recommend if you should keep your starting hand.

See It in Action

Real prompts you can use once this MCP is connected to your AI agent through Vinkius Cloud.

U What are my chances of drawing at least 2 lands in my next 7 cards if I have 24 lands in a 60-card deck?

Draw Probability Report

The probability of drawing at least 2 lands is approximately **85.3%**.

This calculation assumes:
- Total Deck Size: 60 cards
- Target Cards (Lands): 24
- Cards Drawn: 7

You're highly likely to hit your land count, suggesting a solid foundation for the current turn.

U Should I mulligan my current hand? My hand quality score is 0.5, the penalty is 1, initial size was 7, deck is 60 with 10 targets, and success threshold is 0.6.

MULLIGAN RECOMMENDED

Your expected card quality after taking a mulligan (approx. 0.72) is significantly higher than your current hand score of 0.5.

- **Action:** Mulligan
- **Reasoning:** The potential gain outweighs the penalty cost, increasing overall game stability.

U Show me the full probability distribution for drawing targets from a 40-card deck with 4 copies of a card in my next 5 draws.

Full Distribution Table (Targets)

TARGETS DRAWN	PROBABILITY
0	56.5%
1	35.7%
2	7.2%
3	0.6%
4	0.01%

This table shows the likelihood of every outcome, helping you plan for both low-target and high-target scenarios.

Frequently Asked Questions

01 **How does the calculator handle mulligans?**

The `evaluate_mulligan_decision` tool compares your current hand's quality score against the statistical expectation of a new hand, accounting for the reduction in hand size caused by the `mulliganPenalty`.

02 **Can I track changes to my deck after scrying?**

Yes, use the `track_deck_progression` tool to update your `currentDeckSize` and `currentTargetCount` after seeing cards via scry or removing cards through deck thinning.

03 **What mathematical model is used for these calculations?**

The server uses the hypergeometric distribution, which is the standard model for sampling without replacement from a finite population, making it perfect for card games.

Go Live in 60 Seconds

Get your connection token from **cloud.vinkius.com**, then paste the endpoint URL into any MCP-compatible client.

YOUR MCP ENDPOINT

```
https://edge.vinkius.com/[TOKEN]/mcp
```

CLIENT	WHERE TO CONFIGURE
Claude AI	Profile → Customize → Connectors → "+" → Add custom connector → Paste endpoint
Cursor	Settings → Features → MCP Servers → "+ Add New MCP Server" → Type: SSE → Paste endpoint
VS Code	Ctrl/Cmd+Shift+P → "MCP: Add Server" → add `"card-draw-probability-calculator": { "url": "…" }`
Windsurf	MCP Settings → `mcp_settings.json` → Add endpoint URL
ChatGPT	Settings → Tools & plugins → Add MCP server → Paste endpoint
Gemini	Extensions → Add MCP Server → Paste endpoint URL

ASK AN AI ABOUT THIS

Let your preferred AI explain this MCP server

- Ask ChatGPT
- Ask Claude
- Ask Perplexity
- Ask Gemini
- Ask Grok

READY TO CONNECT

Card Draw Probability Calculator is live on Vinkius Cloud.

Get your connection token, paste it into your AI agent, and start building. No SDK. No deployment. Just results.

Start at cloud.vinkius.com →

vinkius.com · support@vinkius.com

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DOCUMENT INFORMATION

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Endpoint	`https://edge.vinkius.com/{token}/mcp`

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