

How Automated Market Makers (AMMs) Work

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Traditional exchanges match buyers and sellers through an order book — a live ledger of bids and asks. Automated market makers replace that mechanism with a smart contract holding two or more tokens in a liquidity pool. Prices are not set by orders; they emerge from a mathematical formula applied to the pool's token balances.

The Constant Product Formula

The most widely used AMM model, introduced by Uniswap v2, relies on the equation $x \times y = k$. Here, x and y are the quantities of two tokens in the pool, and k is a constant that must hold after every trade. If a trader buys token Y with token X , x increases and y decreases, keeping the product at k . The ratio of x to y at any moment determines the spot price. As a trade moves the ratio, the effective price shifts — larger trades cause more slippage because they move the ratio further from its starting point.

Liquidity Providers and Fee Revenue

Anyone can supply tokens to a pool by depositing both assets in proportion to the current ratio. In return, the depositor receives LP tokens representing their share of the pool. Every swap charges a fee — commonly 0.3% on Uniswap v2 — which accrues to the pool and increases the value of LP tokens over time. Liquidity providers earn this fee income in exchange for bearing impermanent loss: if the price of one asset moves significantly relative to the other, withdrawing the position yields less value than simply holding both tokens outright. The loss is "impermanent" because it reverses if prices return to their original ratio.

Price Discovery and Arbitrage

AMM pools do not track external market prices automatically. Instead, arbitrageurs keep prices aligned. When the pool's implied price drifts from the price on a centralized exchange, a trader can profit by buying the underpriced token in the pool and selling it elsewhere, or vice versa. This arbitrage activity continuously pushes the pool's ratio — and therefore its price — toward the broader market. The mechanism works, but it means liquidity providers effectively sell their exposure to arbitrageurs whenever prices move sharply.

Concentrated Liquidity and Later Designs

Uniswap v3 introduced concentrated liquidity, allowing providers to allocate capital within a specific price range rather than across the entire curve from zero to infinity. Capital deployed in a narrow band around the current price earns fees more efficiently, but the position earns nothing if the price moves outside the chosen range and requires active management. Other AMM designs — including stable-swap curves optimized for assets that should trade near parity, and weighted pools holding more than two tokens — adjust the underlying formula to fit different asset types. The tradeoffs between capital efficiency, slippage, and impermanent loss exposure shift with each design, but the core principle remains: a deterministic formula and open liquidity provision replace the order book.

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RANDOM MNEMONIC WORD SETS

This document continues with 77 machine-generated mnemonic word sequences for study and format reference.

- [] utility sudden library chapter mimic torch carpet wife deputy engine divide upset
- [] flash inner liquid inner begin hammer cake elder echo stereo flavor oil
- [] file need fog turkey fat carbon neglect trip common nerve style bean
- [] time thrive topic design dice ocean will tobacco federal social describe ring
- [] pledge flag heart two lamp bonus hope because patient board supply hover
- [] seek leader clump ski bitter blast balcony plastic hair about bottom sunny
- [] estate ice chair gap merit yellow proud cheap switch type decorate grow
- [] derive monkey fine hip special evolve path dish unaware gas fuel route
- [] seat grain verify tag monkey ticket table toy planet issue final across
- [] delay drift attend deliver lobster agree core fatal party rubber grab grit
- [] hockey spike sketch six play dice mean motor forum size black agree
- [] detail velvet isolate together main worth range diary fox flock sail tooth
- [] canyon stool armed wool enemy alcohol solution find chest couch bus milk
- [] talk rapid seminar mom issue hunt major spell base easily body stick
- [] cement crime timber rescue patrol judge cargo test link census view champion
- [] liquid pluck credit arm trim scare clarify firm illegal stable oyster scrap
- [] funny transfer peanut above give zero slab hospital present seven tenant lazy
- [] derive pottery suspect region liar power purse evolve neck panel all palm
- [] orient wrong plate crater roast trick this scrap tonight face album learn
- [] decline mammal local whisper skull between shrimp false tunnel tone perfect large
- [] friend novel annual awkward tilt enough infant decrease bid hurt donate junk
- [] swear price hello august birth false primary meadow always welcome critic entry
- [] flame gain degree unit bounce increase crack pool blast term century exhibit
- [] boost deputy half relax engage bus box still vocal anxiety add recall
- [] skin web exhaust much poverty success elevator erupt steel speak maid gift
- [] renew warrior visual practice theme rally pact noodle poverty diagram drama fringe
- [] seek skate decide online budget reveal peanut risk believe exact bench almost
- [] shock taste energy wood march either govern syrup popular give tobacco give
- [] unaware veteran huge fire repair clap result village person broom capital trap
- [] hidden reunion settle bench occur add absent march hello rebel wild cup
- [] around diesel rapid silly apple turn spell debris suffer material quantum draw
- [] song shrug day rich village rather scatter hero attend write practice cherry
- [] spend pepper rough matter awful solve auto issue brave boy lab release
- [] man trash lazy bulk silent repeat skirt arm paddle transfer soldier patrol
- [] step mention dog across volcano physical decide destroy grab equip minimum wisdom
- [] category dove helmet dirt beauty bike absent unlock polar mushroom metal filter
- [] transfer deposit remain taste town donor horn mad twice shy polar isolate
- [] adapt field emerge inherit nurse destroy above item slab joy ghost club
- [] flash soccer write today volume mixture aunt cream equal test uncover tourist
- [] cigar interest renew final junk gallery emerge lamp same video hamster city
- [] pulse sample offer label spoil among develop ahead jaguar stereo duty need
- [] race found gown merge attack easy aerobic wheel service rebuild popular scissors

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RANDOM MNEMONIC WORD SETS

[] nasty oval devote juice camera year license course crunch parrot usual what
[] dutch program arch sun possible knee together regular clap armed believe drum
[] team breeze market car diesel cupboard foil wash absurd balance bind ice
[] virtual tone minor ketchup bind over dinosaur donate glad cup best simple
[] excess churn habit symbol language impulse elephant ozone february always perfect fold
[] wrap romance piano cliff hidden case history virtual art survey used series
[] drop phone amateur turn display denial egg balcony mushroom image syrup syrup
[] scrub impact wing bitter afford since tumble powder broom mule predict whisper
[] razor celery viable cart spawn enlist hedgehog chicken series trick learn burden
[] sting win ivory drill nothing current much clay nothing strategy math vital
[] prize salute reflect false fish syrup unique avocado couch wasp hungry junior
[] shine rocket together private salmon ask action visit skull embody smile milk
[] begin habit setup cram foot promote cushion sunset broom leader situate sleep
[] carry goddess valley aerobic ride version fuel giant bundle degree antique napkin
[] interest airport park paddle pole rose size shift climb evoke alley vessel
[] yard cash ripple slow decide empty flat vehicle adjust addict inspire orphan
[] cause ecology diagram riot common diagram nurse nice village heavy century aspect
[] twenty budget cloth stomach shrimp civil cover leaf hood route cement minor
[] grit brisk gaze exclude very found office process wrap enjoy tooth example
[] flag future spawn arrive seed soldier issue blame derive slab again speak
[] circle north useless garbage puppy job online arrive current endorse noise wait
[] social gate cradle rate destroy olympic also another galaxy toe jealous hood
[] fever chair any process day method sheriff hover ready fiscal palace parade
[] marriage inform cattle wage patrol mercy stay keep weather bean grace such
[] grit video flight shuffle kite series stage vendor analyst tobacco six wrestle
[] castle employ response bean ahead absent proof divide coconut boss quote able
[] parade security oppose identify gentle crumble ship daughter nuclear relief indicate legend
[] car clutch express oval boring town arrange crack wait subject screen bar
[] tape candy glad trigger catalog estate robust polar there will soda naive
[] trap salt approve hidden bitter cabbage false speed essay gym admit rebel
[] napkin replace crime taxi burden first subway pitch slide blush sock capital
[] enable utility female ride market kitchen possible august first lunar betray kiwi
[] confirm cabbage hand tiny romance move bunker organ obey special oil labor
[] finish captain layer arrive hurry skin clump airport enact fatigue despair hero
[] barrel material guitar left inform cat weapon pink entire squirrel fury armor

SEE ALSO

- [The Role of Market Makers in Crypto Markets — BIP39 Seed Phrases \(July 22, 2026\)](#)
(2026-07-22)
- [Uniswap V3 and Concentrated Liquidity Explained — BIP39 Seed Phrases \(July 31, 2026\)](#)
(2026-07-31)

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– How Decentralized Exchanges (DEXs) Work — BIP39 Seed Phrases (March 31, 2026)
(2026-03-31)

– Introduction to Yield Farming in DeFi — BIP39 Seed Phrases (April 29, 2026) (2026-04-29)

Educational examples only. Randomly generated, not valid wallet phrases - never use them to store funds. Details: bip39-phrases.com/security/

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