

LOVE Zoo

Game Design Document & Player Guide · v1.0 (May 2026)

Educational, anti-CryptoZoo collectible game with Mendelian genetics, stud marketplace, and a 100% closed-loop economy powered by the Game Dev Fund.

Module	LOVE Zoo (/dashboard/love-zoo)
Currency	LOVE (priced in USDL via Quick Converter rate)
Egg cost	\$1.50 USDL
Daily reward cap	\$5 USDL per user (engagement)
Treasury	Game Dev Fund — 00000000-...-00000000de000
Public pages	/zoo/faq · /zoo/hall-of-fame · /zoo/lineage/:id · /zoo/breeder/:user
Phases shipped	23 (full feature set)

1. Vision & Design Pillars

LOVE Zoo exists to demonstrate that a sustainable, fair, and educational collectible game can thrive on top of a real economy — without unbacked yield, without P2E inflation, and without insider mints.

- **Closed-loop economy** — every reward originates from a real sink (egg sale, stud fee, marketplace fee).
- **Real ownership** — each animal is a unique AI-generated avatar tied to your account, transferable on the marketplace.
- **Mendelian genetics** — breeding is mathematically genuine, not RNG-skin reskinning.
- **Hard caps** — \$5/day USDL engagement reward per user prevents farming.
- **Transparency** — public Hall of Fame, lineage trees, and breeder reputation pages anyone can audit.

2. Core Game Loop

1. **Buy** an egg (\$1.50 USDL → LOVE).
2. **Wait** a few minutes for the hatch timer.
3. **Hatch** → AI-generated animal with rarity (Common → Mythic) and a unique 8-gene Mendelian genome.
4. **Engage** on Sparks/comments — your animals earn XP automatically.
5. **Breed** two animals (solo or co-op or via Stud Marketplace) to produce a Mendelian-inheritance egg.
6. **Trade** on the marketplace, climb the Hall of Fame, claim daily quests & bundles.

3. Genetics System (Phase 13D)

Every animal has 8 genes, each with 2 alleles (Dominant **D** / recessive **r**). Phenotype is calculated server-side and gives stat bonuses.

3.1 Inheritance

Each parent contributes one random allele per gene. ~3% of alleles mutate per breeding to keep the gene pool dynamic.

3.2 Phenotype Bonuses

Gene	DD effect	Dr effect	rr effect
XP Boost	+25% XP	+10% XP	—
Yield	+20% breeding yield	+8%	—

Luck	+15% rare egg chance	+5%	—
Sale Bonus	+30% marketplace floor	+10%	—
Stamina	−20% breed cooldown	−8%	—
Beauty	Cosmetic glow	Subtle glow	—
Rarity Boost	+1 rarity tier @ hatch	—	—
Shiny	All-D = Shiny (~1% wild)	—	—

4. Breeding & Stud Marketplace (Phases 13–17, 19)

Solo breed — pair two of your own animals (48h cooldown).

Co-op breed — invite a friend; both receive an egg.

Stud Marketplace — list one animal as a stud for \$0.50 – \$500 USDL.

- Stud fee split: **95%** → stud owner, **5%** → Game Dev Fund.
- Base breeding cost goes 100% to the Game Dev Fund.
- Both parents enter cooldown after stud breeding.
- After every stud breeding, the breeder may rate the owner 1–5 with a comment.
- **Verified Breeder** badge: ≥5 breedings AND ≥4.0 average; ranked first in browse.

5. Daily & Weekly Quests (Phases 20, 22, 23)

Six daily quests reset every UTC midnight. All rewards come from the Game Dev Fund.

Quest	Goal	Reward (USDL)
caretaker	Daily login	\$0.20
promoter	Share a Spark	\$0.20
breeder	Complete 1 breeding	\$0.30
hatcher2	Hatch 2 eggs	\$0.30
xp_grinder	Earn 1,000 XP	\$0.40
collector	1 marketplace purchase	\$0.25
Daily Bundle	All 6 above claimed	+\$1.00
Weekend Mega Bonus	Daily Bundle on ≥5/7 UTC days	+\$3.00 (1×/week)

6. Weekly Tournaments (Phase 13C)

Three categories run Mon → Mon UTC, each with a \$50 USDL prize pool.

- **xp_grind** — most XP earned this week.
- **breeder** — most breedings completed.
- **hatcher** — most eggs hatched.

Top-10 split: 1° 30% · 2°–3° each 15% · 4°–10° share 40% · auto-paid in LOVE on Monday 00:00 UTC.

7. Marketplace (Phase 14)

- Filter: rarity, stage, Find Shiny, 8 trait chips, search species/@seller.
- Each card shows generation, shiny ring, trait pills.
- Lineage tree dialog (3-gen recursive parent_a/parent_b view).
- Sale fee: 30% → Game Dev Fund · 70% → seller. Animal cooldown resets to 24h after sale.

8. Public Showcase Pages (Phases 16, 16b, 21)

- **/zoo/hall-of-fame** — Longest Lineages · Top Shiny Owners · Oldest Mythics (top 10 each).
- **/zoo/lineage/:animalId** — full 5-generation ancestry, shareable with dynamic OG meta.
- **/zoo/breeder/:username** — public profile with avatar, Verified badge, active studs, recent ratings.
- **/zoo/faq** — this guide, mobile-friendly.

9. Notifications (Phase 15)

- **zoo_egg_ready** — push when an egg is ready to hatch (5-min cron, idempotent).
- **coop_invite** — friend invites you to a co-op breed.
- **animal_sale** — your listing sold.
- **weekly_summary** — Monday 09:00 UTC digest with top XP, hatches, breedings, sales, shinies.

10. Economy & Sustainability

LOVE Zoo is a fully closed-loop economy. No fresh LOVE is minted for rewards.

- **Sources:** egg sales, breeding fees, marketplace fees, stud fees → Game Dev Fund.
- **Sinks:** daily/weekly quest payouts, tournament prize pools, AI image generation costs.
- **Hard cap:** \$5/day USDL per user from engagement XP.

- **Treasury wallet:** 00000000-0000-0000-0000-00000000de000 (publicly readable balance).
- **RPC:** `get_game_dev_fund_balance()` exposed read-only.

11. Fairness & Security

- All RPCs use SECURITY DEFINER + race-safe insert-first reservation pattern.
- Genome generated server-side and immutable after hatch.
- Marketplace transfers atomic — animal & LOVE swap in same transaction.
- No admin can mint animals or LOVE for themselves.
- Daily engagement reward cap enforced at the database level.

12. Future Roadmap

- Solana cNFT minting for animals (opt-in, Game-Dev-Fund-paid gas).
- Cosmetic skin shop (LOVE sink).
- Cross-game pet abilities (LOVE Snake, LOVE Kingdom integrations).
- Seasonal events with limited-edition genomes.

Appendix A — Glossary

- **Allele** — one of two copies of a gene (D dominant or r recessive).
- **Genome** — full 8-gene set defining stat bonuses & phenotype.
- **Shiny** — animal with all-DD genome on the Shiny gene; ~1% wild rate.
- **USDL** — internal 1:1 stablecoin used for USD pricing peg.
- **Quick Converter rate** — canonical LOVE/USD rate (Stellar DEX × XLM/USD).
- **Game Dev Fund** — shared treasury for all LOVE games (closed-loop).

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More: lovecoin.life · loveos.tech · </dashboard/love-zoo>