

MineScape Whitepaper Latest

MineScape: Sandbox World-Building Decentralized

Subtitle: Pioneering a Truly User-Owned and Community-Driven Sandbox World-Building Experience

Version: 0.3

Date: Dec 2025

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Abstract

MineScape is a decentralized sandbox protocol that empowers users to collaboratively create, own, and monetize virtual worlds, drawing inspiration from Minecraft's pioneering approach to world-building genre in video gaming. By leveraging Filecoin's decentralized storage network, MineScape ensures that all resources are anchored to real-world storage, preventing artificial inflation and fostering authenticity. The protocol introduces a novel asset class — blocks¹ and composable items² with inheritable attributes — driving an on-chain economy where builders, creators, and miners are incentivized to collaborate. MineScape operates without a native token, adopting a low-fee transaction model similar to OpenSea, ensuring accessibility and sustainability. Our vision is to establish MineScape as the foundational template for decentralized sandboxes, unleashing global creativity and redefining ownership in virtual ecosystems.

1. Introduction

The Problem

As the internet is transitioning to Web3 following the path of "read, write, own", frameworks that incentivize true ownership is what we find essentially fueling new innovations and accelerating adoption. The sandbox world-building, envisioned as a boundless digital universe, has been stifled by centralized platforms that prioritize profit over creativity. Existing sandboxes lack infrastructure for truly user-generated content (UGC), where creators retain ownership and are fairly rewarded. Centralized entities often pocket the majority of profits, discouraging

collaboration and limiting the growth of open, inclusive virtual worlds. Furthermore, many sandboxes rely on artificially created assets, undermining authenticity and economic stability.

The Solution

MineScape is a decentralized protocol built on Filecoin that redefines the sandbox through three core pillars:

1. **Collaborative Backbone:** A protocol incentivizing cooperation among builders, creators, and miners to construct vibrant, community-driven virtual worlds.
2. **Real-World Anchoring:** All resources (blocks, items, and realms³) are anchored to Filecoin's decentralized storage, ensuring authenticity and scarcity.
3. **Novel Asset Class:** A dynamic economy driven by blocks and items with inheritable attributes, enabling vibrant on-chain activities and driving the demand for "sectors"⁴, ie Filecoin storage.

Vision

MineScape aims to become the gold standard for decentralized sandbox, just as Minecraft pioneered sandbox simulation gaming. By providing an open, transparent, and community-governed platform, MineScape empowers anyone to create, own, and trade within a sandbox that reflects their imagination and rewards their contributions.



Concept Art (from MineCraft)

2. Core Features and Functionality

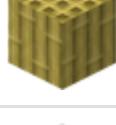
Blocks

Just like in Minecraft, blocks are the basic units in MineScape, each with specific attributes:

- **Dirt Block:** No attributes (the most common block across realms).

- **Copper Block, Silver Block, Gold Block:** With preciousness attribute attached to each and of value 1, 2, and 3 respectively.
- **Wood Block, Stone Block, Iron Block:** With toughness attribute attached to each and of value 1, 2, and 3 respectively.
- **Flax Block, Wool Block, Silk Block:** With comfortness attribute attached to each and of value 1, 2, and 3 respectively.

Future iterations may introduce additional block types based on community feedback.

Name	Concept	Attributes
Dirt		n/a
Copper		Preciousness: 1
Silver		Preciousness: 2
Gold		Preciousness: 3
Wood		Toughness: 1
Stone		Toughness: 2
Iron		Toughness: 3
Flax		Comfortness: 1
Wool		Comfortness: 2
Silk		Comfortness: 3

Recipes⁵

- **Definition:** A recipe specifies inputs (blocks or items) and an output (a new item to be minted). Attributes from inputs are transferred to and summed in the output item.
- **Creation of a Recipe:** Any user can create recipes as long as it holds source materials in MineScape and [x] of energy cubes from creator realms is supplied. User can also freely define the name, description and image of the minted item of the recipe.
- **Mechanics:** Inputs are consumed, and the new item is minted on-chain, which is tradeable or could be used as source materials for other mints.
- **Example:** Combining a Gold block (preciousness: 3) and Iron block (toughness: 3) with 5 energy cubes may create a “Golden Sword” with preciousness: 3 and toughness: 3. Source materials, gold block, iron block and energy cubes, will then be burned.

Realms

MineScape introduces a sandbox divided into three types of **realms**, pieces of "lands" where one's MineScape journey begins, each anchored to Filecoin's decentralized storage:

1. Mining Realms:

- **Purpose:** Users mine basic blocks, the foundational resources of MineScape.
- **Mechanism:** The community collectively chooses a live Filecoin mining node, and then its sectors are mapped to a variety of block types (e.g., dirt, gold, iron). Users interact with the realm to mine said blocks (a process like opening a mystery box) to potentially craft new items just like in MineCraft or to simply trade blocks with others.
- **Depletion:** Once a realm's resources are exhausted, it is declared "dead" and the said Filecoin node cannot be used again as a realm.

2. Creator Realms:

- **Purpose:** Enable users to craft recipes for new items.
- **Mechanism:** A Filecoin node is chosen (via community recommendations or node operator nominating their own nodes) and then its sectors mapped to “energy cubes”, which powers recipe creation and usage. For example, users combine blocks, items, and energy cubes to mint new items. Additionally, to access energy cubes, user would pay a small fee to the node operator (owner or beneficiary address of the node).
- **Depletion:** Similar to mining realms, creator realms become "dead" once energy cubes are depleted and the said Filecoin node cannot be used as a realm again.

3. Home Realms:

- **Purpose:** Spaces for users to store, showcase or tinker with their worlds.

- **Mechanism:** Users own home realms, which are also mapped to sectors of live Filecoin nodes, providing persistent storage for their worlds.



Concept Art (from MineCraft)

Roles

Users can be seen as to assume different roles in MineScape sandbox. We define them loosely as the following...

- **Builders:** Like in Minecraft, builders gather resources, sometimes trade blocks or items with others and use recipes to mint items which they like.
- **Creators:** Creators let their imagination run free and conceive new recipes by consuming energy cubes from creator realms.
- **Miners:** Fileocoin node operators are encouraged to nominate themselves to become a realm in MineScape.

User Flows

Some of the typical user flows one could expect to see happening in MineScape...

- **World-Building:** A user mines blocks in a mining realm, crafts items in a creator realm, and builds a castle in their home realm.
- **Trading:** A collector trades a rare “Silk Robe” (comfortness: 3) on the marketplace.
- **Collaboration:** Communities vote on new mining realms, fostering collective decision-making.

Incentive Considerations

The realm design tries to tie builders, creators and miners together through its incentive structure. Node operators could join MineScape and earn extra revenue without too much effort

invested. Through sector anchoring, MineScape innovates a way to mimic the real world, throttles abuses of centralized world building experience to just create things out of thin air and provide security framework to the virtual world order. Once a creator forges a recipe, it could then benefit from both fees of others using it and fees of others trading minted items. To creators, it will be like a NFT launch platform but the fact all are under a tangible "world rules" will add a twist to the items minted. Creative ways of hacking growth would likely to be the main driver for incentivizing builders to join MineScape. Overall, MineScape would help financialize sectors, mending the gap for market demand of buying a sector to a degree.

3. Tokenomics

MineScape operates without a native token, adopting a transaction-fee model similar to OpenSea. Key details:

- **Transaction Fees:** A low fee (e.g., 5 %) is charged on trades, recipe creation and usage, ensuring accessibility for users.
 - **Miner Fees:** A fee (e.g., 1 FIL) is charged on energy cubes uses, providing incentives for node operators to join MineScape as a realm. Though at the beginning it is likely be chosen by community.
 - **Creator Fees:** A percentage fee (e.g., 30 %) is charged on trades of minted item and recipe usage, providing incentives for creator's UGC activities.
 - **Revenue Distribution:** Transaction fees are allocated to protocol maintenance, community governance, and future development.
 - **No Token Launch:** MineScape prioritizes simplicity and avoids speculative tokenomics, focusing on user-driven value creation.
 - **Future Considerations:** The community may propose a governance token via the EIP-like process if needed for decentralization.
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4. Technical Overview

Choice of Blockchain: Filecoin.

MineScape is built on Filecoin, a decentralized storage network, for the following reasons:

- **Real-World Anchoring:** Filecoin's storage proofs ensure that all MineScape resources (blocks, items, realms) are tied to verifiable, real-world storage, preventing artificial creation.

- **Scalability:** Filecoin's decentralized storage and high capacity support the vision of massive cyber metaverse worlds.
- **Sustainability:** Filecoin's energy-efficient design aligns with MineScape's vision of a long-term, eco-conscious platform.

Architecture

MineScape's architecture consists of:

- **Smart Contracts:** Deployed on Filecoin's mainnet, handling realm creation, resource mining, item crafting, and transaction logics. Contracts will be written in Solidity and compatible with EVM wallets (e.g., MetaMask).
- **Frontend Interface:** A web portal (e.g., minescape.xyz) or third-party integrations allow users to interact with realms, manage assets, and trade items.
- **Off-Chain Components:** IPFS providers for storing metadata (e.g., item recipes, realm configurations) and oracles for fetching Filecoin node data.
- **Wallet Integration:** Supports EVM-compatible wallets for seamless user interaction.

Smart Contracts

- **Realm Management Contracts:** Governs the creation, mapping, and depletion of mining, creator, and home realms.
- **Resource Contracts:** Tracks block mining and attributes (e.g., preciousness, toughness).
- **Recipe Contracts:** Manages item creation, attribute transfer, and consumption of resources.
- **Marketplace Contracts:** Facilitates trading of blocks and items with a low transaction fee (e.g., [x] %).

5. Roadmap

- To be rolled out...
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6. Conclusion

MineScape reimagines the sandbox world-building as a decentralized, user-owned ecosystem where creativity and collaboration thrive. By anchoring foundational resources to Filecoin's real-world storage, introducing a novel asset class with inheritable attributes, and fostering community governance, MineScape sets a new standard for virtual worlds. We invite builders, creators, and miners to join us in shaping the future of the metaverse.

7. Appendices

Glossary

- [1]: **Block**: A fundamental resource with attributes (e.g., preciousness, toughness).
- [2]: **Item**: Product of combining blocks or items using a recipe.
- [3]: **Sector**: Basic storage unit in Filecoin, usually of 32 GiB or 64 GiB size.
- [4]: **Realm**: A virtual environment in MineScape (mining, creator, or home) mapped to a Filecoin node.
- [5]: **Recipe**: A user-defined formula for crafting items using blocks and energy cubes.

References

- Ancients Research: <https://ancientsresearch.xyz>
- Filecoin Documentation: <https://docs.filecoin.io>