

*Ordinals*



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# Introduction

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The aim of this report is to understand a few critical points about Ordinals that many NFT enthusiasts might not know and help evaluate the possible opportunities and risks that comes along with this new class of digital collectibles.

## What Are Ordinals?

Ordinals launched on Bitcoin mainnet by developer [Casey Rodarmor](#) on January 20, 2023. For the first time data such as images and videos could be stored directly on-chain by inscribing a satoshi (100 million “sats” make up 1 Bitcoin) and assigning a unique number (based on the order of mining), which follows an arbitrary but logical ordering system called ordinal theory.

While ordinal NFTs were truly unlocked through the conceptualization of ordinal theory, ordinal NFTs as they exist today were made possible by the Segregated Witness (SegWit) and Taproot updates to the Bitcoin Protocol, which took place in 2017 and 2021, respectively. These updates were not made for the specific purpose of enabling these new types of NFTs, but since each update enlarged the amount of arbitrary data able to be stored on-chain within a block—meaning there was now space for images, videos, and even games—Ordinal NFTs were unintentionally made possible as a result of their deployment.

It’s important to note that Bitcoin NFTs aren’t a new concept, with layer-2 networks on top of Bitcoin such as Counterparty (the creators of the Rare Pepe NFT collection) and Stacks, already enabling Bitcoin-based NFTs. Ordinals were simply the first ones being completely Bitcoin-native.

## How Do Bitcoin NFTs Work?

Bitcoin is fungible, which means there’s no way to differentiate one bitcoin from another. That’s where ordinal theory comes in, giving satoshis individual identities and allowing them to be tracked, transferred and imbued with meaning.

In ordinal theory, individual satoshis are numbered in the order that they are mined. The first ordinal is the first satoshi ever minted, dating back all the way to 2008. When a satoshi is transferred, the order is preserved through a first-in, first-out system based on the order of transactions.

Ordinal theory does not violate the nature of Bitcoin fungibility. The Bitcoin protocol does not formally recognize this novel ordering of satoshis. Rather, a community of ordinal enthusiasts have simply decided to collectively ascribe significance to this numbering system and build tools that honor it.



To inscribe a specific satoshi with data, and create an ordinal NFT, users must send a transaction of an individual satoshi to a Taproot-compatible wallet and attach the desired metadata as part of the transaction. They must also be mindful of the transaction's ordering to ensure the desired satoshi is not used as a network fee. Tools that automate this process help remove these risks and make the process much easier for non-technical users.

### **How Are Bitcoin Ordinals Different from NFTs?**

Compared to many ethereum NFTs which often point to off-chain data on the Interplanetary File System (IPFS) — a decentralized file storage system — Ordinals have all the data inscribed directly on-chain. That's why Rodarmor refers to them as digital artifacts, not Bitcoin NFTs. Moreover, NFTs often have creator royalties attached to them, whereas digital artifacts do not.

Another key difference between Bitcoin ordinals and more standard NFT types is their fluid nature. Because the Bitcoin protocol does not formally recognize ordinal theory, an ordinal can either be fungible or non-fungible. For example, if a Bitcoin user does not recognize or care about an ordinal or the data attached to it, it can simply be used like any other Bitcoin. Ordinals are fungible in this way—they can be used to pay for network fees or sent as payment, though the arbitrary data will still stay attached. The same is not true of an Ethereum NFT. An Ethereum NFT is completely different from an Ethereum coin, and it's impossible to mix up a fungible token with an NFT because the Ethereum Network treats each token type differently.

The way rarity is derived and how pricing is done is also very different. With traditional Ethereum-based NFTs, the attributes of the art typically define the rarity of the NFT and, subsequently, its price. However, with Bitcoin ordinals, pricing would be defined by key moments that a Bitcoin block would represent. Obviously the first [1,000](#) or [10,000](#) ordinals inscribed might be treasured by collectors, but in general the first satoshi of every new block would be rarer than the other satoxis of the same the block and the first satoshi of each halving (every 4 years) or adjustment period (every 24 years) would add another level of rarity.

### **How to mine Bitcoin ordinals?**

Unlike minting NFTs on the Ethereum blockchain, which is a relatively matured process, mining Bitcoin ordinals is a technically complex process and lacks intuitive tools.

Bitcoin ordinals, in the initial days, could only be mined by those tech-savvy users who ran a Bitcoin node. However, no-code ordinal mining applications like the Gamma or the Ordinals Bot help facilitate the process. In any case the tools around Bitcoin ordinals are still at a very early stage. As demand from ordinary users and followers increases, the ecosystem and the tooling should start maturing with more user-friendly journeys.

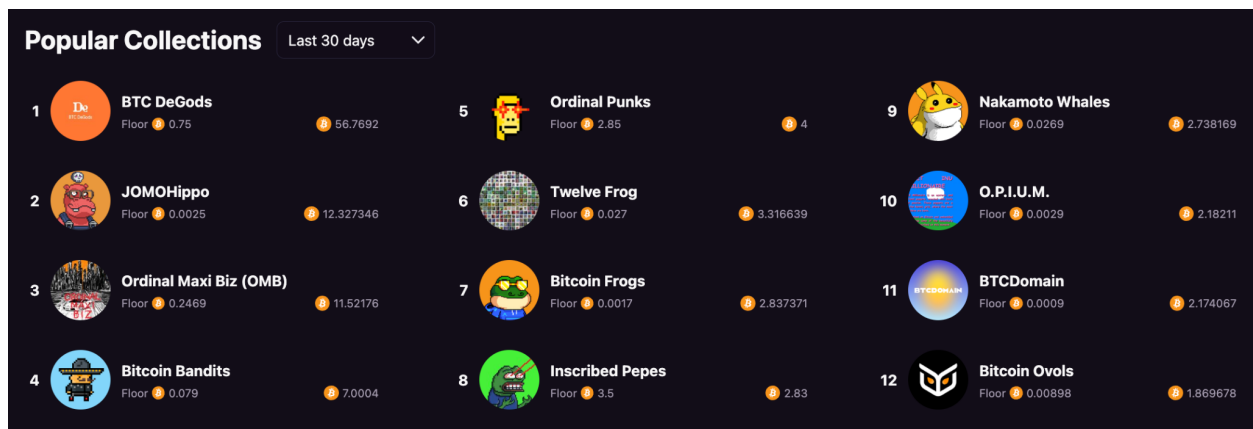


## How to buy, sell and trade ordinals

Much like the process of minting Bitcoin ordinals, the trading process took time to improve in fact collections such as “[Planetary Ordinals](#)” and “[Bitcoin Punks](#)”, among the first 1,000 inscriptions, were transacted mostly over-the-counter, without any marketplace.

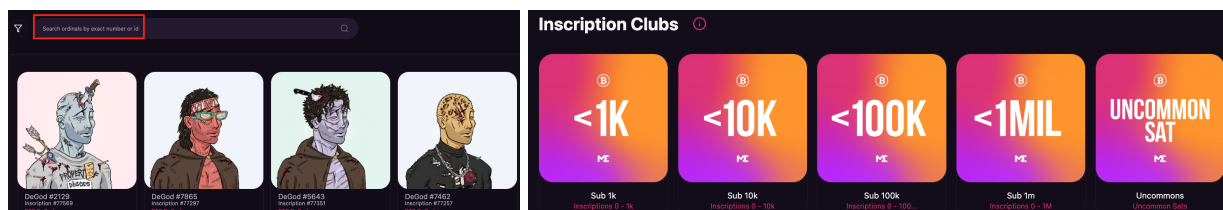
As Bitcoin ordinals grow in popularity, that lack of Web3 infrastructure has rapidly begun to change, i.e. wallets announcing Bitcoin Ordinals-supported functionality ([Ordinals Wallet](#), [Xverse](#), [Hiro Wallet](#), [Sparrow](#)) or marketplaces like [Gamma](#) and [Magic Eden](#) with their ordinal dedicated section.

Let’s look at <https://magiceden.io/ordinals> as an example.



On the main page you can see a list of the most popular collections sorted by volume. This could be useful to understand which collections have the highest trading activity and have a quick look at their entry price (if you are used to ETH price remember that BTC is worth 15x more, as of writing).

As stated before the inscription number is a very important factor to consider when buying an ordinal. You can either choose a specific collection and filter by inscription number or go to the inscription club section where you can look for ordinals below a specific inscription number regardless of what collection they belong to.



Obviously not all the inscriptions are listed on marketplaces, especially the lower numbers. In that case you might have to go to their discord and make a deal over the counter. As always proceed with extreme caution in those cases.

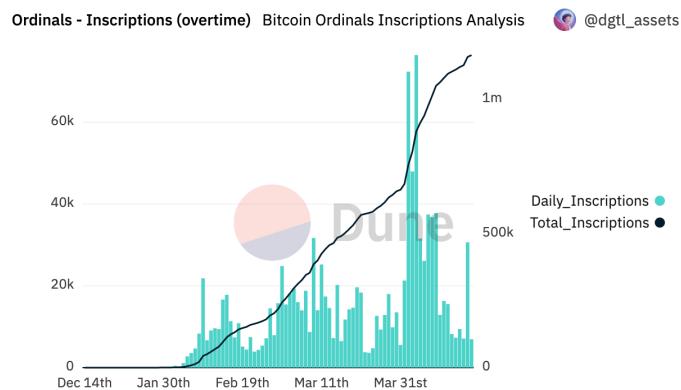


## The Debate Around Ordinal NFTs

The rise of ordinal NFTs has sparked discussions within the Bitcoin community about the fundamental role and ethos of Bitcoin.

Some argue that Bitcoin should be used for secure financial transactions, that the meme-fueled rise of ordinal inscriptions is needlessly filling up Bitcoin's blockspace and driving up transaction fees. Others are excited about the memetic/cultural value that ordinal NFTs can bring to the Bitcoin blockchain, moving the narrative from a pure "store of value" to something more utilitarian.

Bitcoin ordinals have certainly seen a hype that potentially peaked sometime in March/April 2023, based on inscription data. However, the hype around the application tier on the Bitcoin blockchain is just getting started.



However, there are downsides to the way ordinals have been designed. As the inscribed content is all on-chain with ordinals unlike with most Ethereum-based NFTs, the size of the blockchain would increase. As new applications emerge and network utilization and transactions increase, so will the cost of transactions.

The other potential impact of Bitcoin ordinals is whether it will affect the fungibility of satoshis. So far, satoshis have been exchanged with one being valued the same as another. With various applications of ordinals, this may not be true in the future. A satoshi with a Bitcoin Punk inscribed in it could be priced differently. Nonetheless, it would be interesting to see how this narrative evolves over the next few months and years.



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## Notable Ordinals inscriptions

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The rise of Ordinals didn't take long. Just weeks after going live, fascinating collections and eye-popping sales took shape, with some individual pieces selling for hundreds of thousands of dollars. Let's look at some of the Bitcoin NFT collections that emerged as favorites in the early days of the Ordinals NFTs market.

### [Bitcoin Shrooms](#)



Bitcoin Shrooms is one of the first Bitcoin Ordinals NFT collections to be created. The first shroom was [Inscription 19](#), created by an unknown group of people, which alludes to the mystery and anonymity of the Bitcoin blockchain.

Currently, only 210 Bitcoin Shrooms are inscribed into the Bitcoin blockchain, which are referred to as 'Digital Artifacts' on their site. The collection is yet to be auctioned or sold and many collectors are excited for when the Shrooms finally go on sale.

### [Ordinal Punks](#)



Ordinal Punks is one of the most notable projects to emerge in these early days. Paying homage to CryptoPunks, Ordinal Punks is a set of 100 Bitcoin NFTs minted within the first 650 Inscriptions on the Bitcoin chain — the first Inscription in the collection takes up spot [407](#).

Currently, the collection, created by an anonymous person known as FlowStay, has a floor price of 2.95 BTC but as of now only 2 sales happened for a total volume of 4 BTC (it's important to note that as a general rule it is very hard to verify whether these sales are legitimate, given the low numbers and volume).

## Taproot Wizards



The Taproot Wizards are a hand-drawn collection of 2101 Wizards created by the developer Udi Wertheimer in cooperation with Luxor, one of the biggest Bitcoin mining companies. This collection is known for the biggest transaction ever processed on the Bitcoin network, with the first inscription, [inscription 652](#), occupying a space of 4MB.

Taproot Wizards are currently being shared, with some of the collection's followers having received their wizards through tweeting corresponding to the 4MB block inscription.

## Ordinal Loops



The Ordinal Loops project is a Bitcoin Inscription collection that aims to have Bitcoin Artifacts representing the philosophy and ethos of Bitcoin and how the network brings change to the world.

The Ordinals team, whose members are unknown, has created two chapters in the project. The first is known as the 'Do Not Fiat' series, which begins with [inscription 452](#). It depicts Bitcoin's role in working against the major Fiat currencies. The second series is the 'Roots of Immutability' which pays homage to the seven hashes which have significantly impacted the Bitcoin network. The third collection is yet to be released.

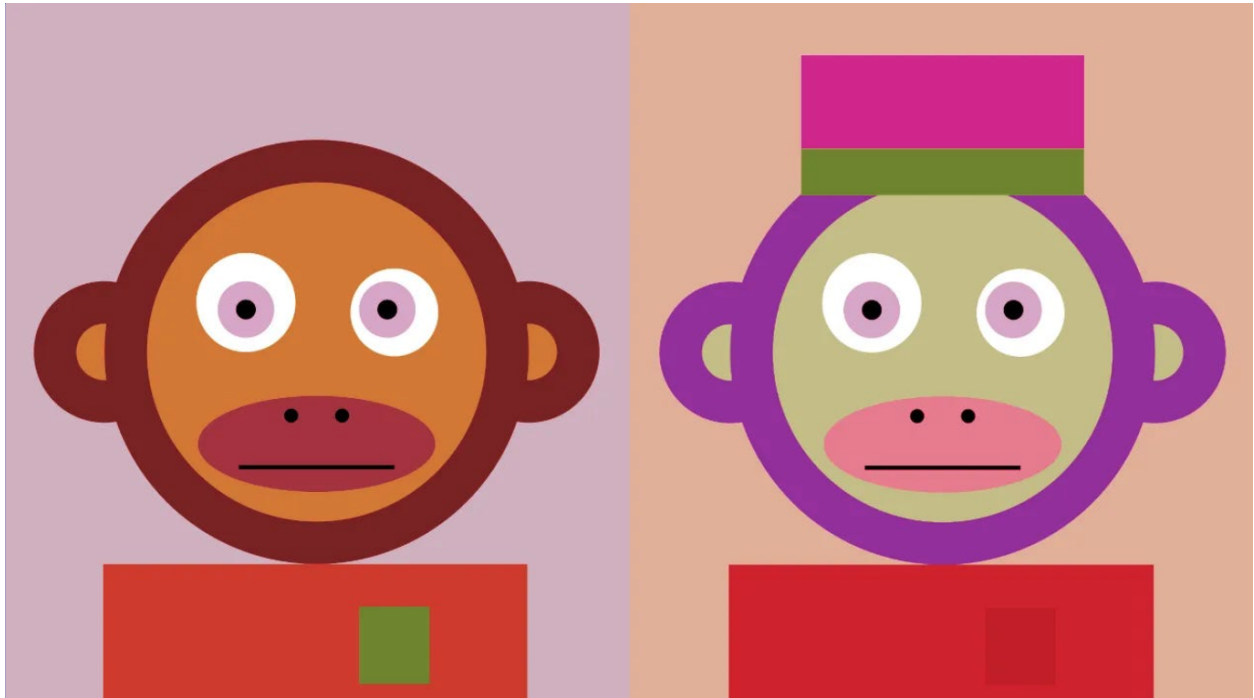
The objects in the collection go on sale on the project's Discord group. Parts of their earnings are donated to Bitcoin-based projects.





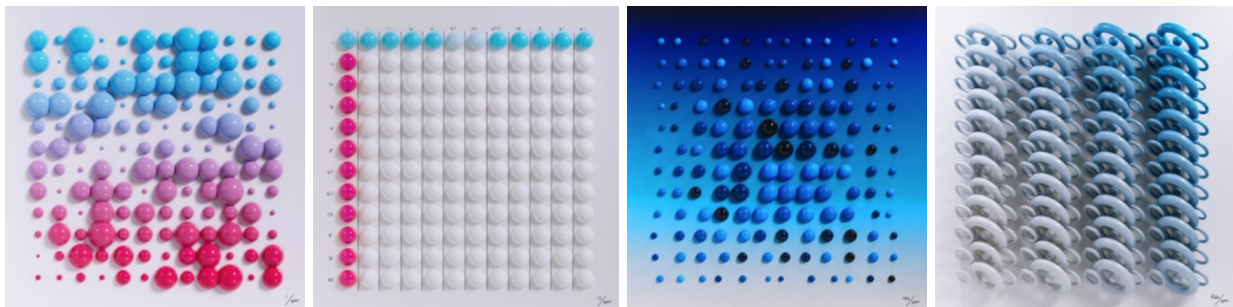
## [OnChainMonkey](#)

On the other side of the coin is the Ethereum-based collection OnChainMonkey (OCM). With [Inscription 20,219](#), the team minted 10,000 Ordinals into a single Inscription, making it one of the [first 10k collections on Bitcoin](#).



The OCM team notes that the size of the Inscription is less than 20,000 bytes, making their method a scalable model for other collections to use to create NFTs on Bitcoin without clogging the network.

## [TwelveFold](#)



Yuga Labs recently launched its own Ordinals collection, titled “TwelveFold.” In total, 288 of the 300 pieces were for auction, with the lowest bid being 2.25 BTC and the highest 7.11 BTC. Yuga held back 12 for contributors, donations, and philanthropic efforts. The pieces, resembling dots, that make up the collection were crafted in-house by Yuga Labs’ art team using 3D modeling, algorithmic construction, and high-end rendering tools.



## [Bitcoin Rocks](#)



Bitcoin Rocks have been created by Ordrocks and pay tribute to the famous 'Ether Rocks' collection, which was amongst the most prolific NFT collections on Ethereum. The collection holds one of the earliest inscriptions on the Bitcoin blockchain, with the first rock being [inscription 71](#). Ordrocks has inscribed 100 Bitcoin Rocks since then.

Despite not having a website, the Bitcoin Rocks Ordinals have an active Discord group and a Twitter account that keeps people updated on the collection. The highest bid for a Bitcoin Rock is currently 1000 BTC, although it is hard to ascertain whether it is genuine.

## [Degods](#)

Then, there's Degods on Bitcoin — currently, number one in 30-days volume on Bitcoin, with the collection itself surpassing every other Ordinals project combined, and a total of 56.769 BTC of total volume and a floor price of 0.74 BTC.



The DeGods community, initially a dominant player within the Solana ecosystem, is cementing its impact across multiple blockchain networks. DeGods on Bitcoin was minted on March 17 and its inscriptions range from #77236 to #77770. These 535 DeGods were burned over 1 year ago when the original collection on Solana did not mint out and now have been forever inscribed on Bitcoin.



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## Report Analysis

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It is undeniable how ordinals have brought awareness that bitcoin could be much more than just a blockchain for financial transactions and a store of value.

While some Bitcoiners are worried it could affect Bitcoin's mission of becoming the best money we've ever had, others believe this would be a net positive for Bitcoin adoption. With more Bitcoin Ordinals collections popping up every day, it will be interesting to see what impact Ordinals will have on the Bitcoin network and the wider NFT collector community.

Having said that, whether ordinals will remain relevant in the future is a whole different matter.

First of all the Bitcoin protocol does not formally recognize ordinal theory. While ordinals are fully valid in today's Bitcoin software, it's ultimately up to the Bitcoin community to collectively decide whether or not ordinals are here to stay. In fact, they could theoretically vote to remove the ability to create ordinal inscriptions by updating the Bitcoin protocol.

Another major problem of ordinals is how they are conceived. Since, unlike ethereum NFTs, ordinals are inscribed on satoshi, there is the real risk of involuntarily using them to pay transactions or as gas fees. Users have to be mindful of what they are doing, adding another layer of stress.

Last thing is that the market of Ordinals is still growing and the volume is very low. If you have any intention of buying an ordinal, be prepared to hold it for quite a long of time but be sure that if you get your hand on a lower inscription it will become quite a flex in the years to come, and possibly a very lucrative deal.



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# Resources

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Below you can find the list of sources, divided by sections, that have been used to compile the report:

**Introduction:**

<https://blog.chain.link/ordinals-bitcoin-nfts>

<https://cointelegraph.com/explained/what-are-bitcoin-ordinals>

<https://nftnow.com/guides/bitcoin-nfts-ordinals-inscriptions-explained-finding-buying-more/>

**Notable Ordinals inscriptions:**

<https://cryptonews.com/exclusives/bitcoin-ordinals-nft-collections.htm>

<https://nftnow.com/guides/bitcoin-nfts-ordinals-inscriptions-explained-finding-buying-more/>

**Report Analysis:**

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