**How mining works: The Nonce**

Basically, a block is a part of segments

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| --- |
| Block: #3 |
| Data:  Hello: hadelin 50hadcoins  Hi : paypal 10 hadcoins |
| Prev Hash :000GSRWIRT365BSH |
| Hash : 4578SDR4ERYHNML2 |

A block stores not only a single transaction, it stores multiple transactions.

* Mining transactions are validated digitally on the bitcoin network you use and add to the blockchain ledger. It is done by solving complex cryptographic hash puzzles to verify blocks of transactions updated on the decentralized blockchain ledger.
* Blockchain "mining" is a metaphor for the computational work that nodes in the network undertake in hopes of earning new tokens. In reality, miners are essentially getting paid for their work as auditors. They are doing the work of verifying the legitimacy of Bitcoin transactions.
* Image result for mining in blockchain technology in simple
* Mining is the process that Bitcoin and several other cryptocurrencies use to generate new coins and verify new transactions. It involves vast, decentralized networks of computers around the world that verify and secure blockchains – the virtual ledgers that document cryptocurrency transactions
* Mining rig: A mining rig is a heavy duty computer system that allows cryptocurrency network programmers to verify transactions over their chosen network. Once these individuals have completed a string or certain “blocks” of verifications, they can mint or mine new cryptocurrency tokens in the process
* The mining of a blockchain's cryptocurrency is a method to assist in securing a blockchain network from attacks, while financially incentivizing the miners of that network to collaborate in securing it. Mining setups — known colloquially as rigs — can vary in price, size, scale, performance, and efficiency.

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Nonce is the another field of the block. It is just a number.

Nonce stands for “number used only once”

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| --- |
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What gives the hash?

The contents like block no, nonce, data, prev hash all put in hashing algorithm

And we get the HASH

The nonce gives extra flexibility.

We can change the hash number by nonce value.

As block no and prev hash are permanent by using nonce we can change the hash value without disturbing the block no.

If we change the block no the entire blockchain will be disturbed

As the nonce changing the hash also changes