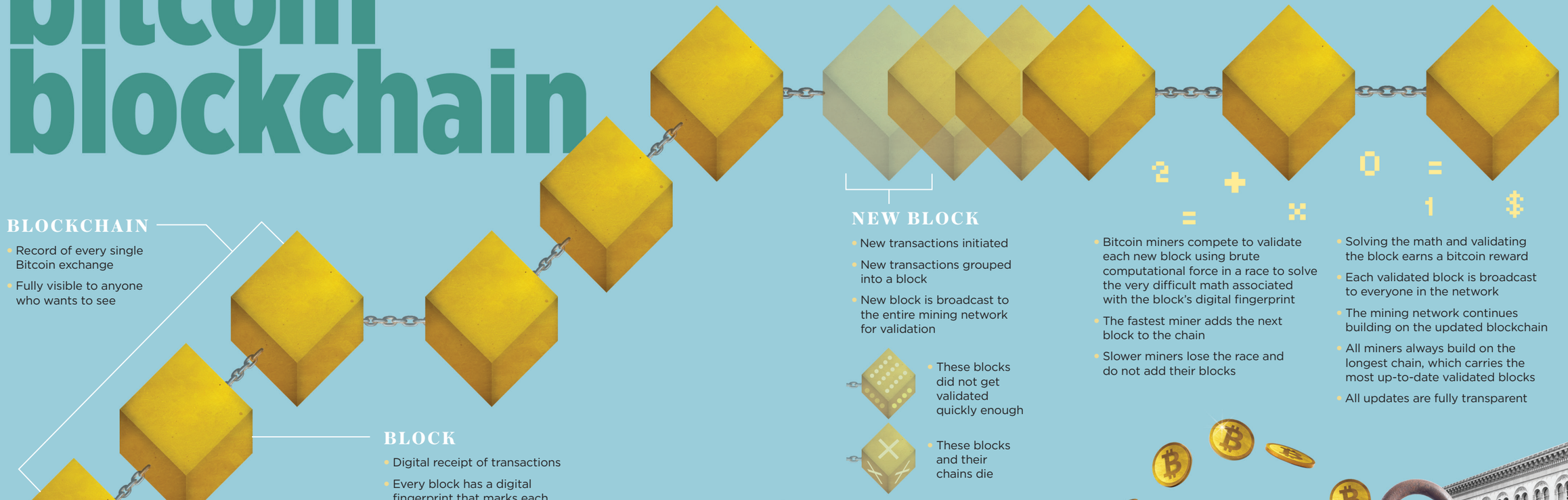
Maintaining the bitcoin blockchain



BLOCKCHAIN

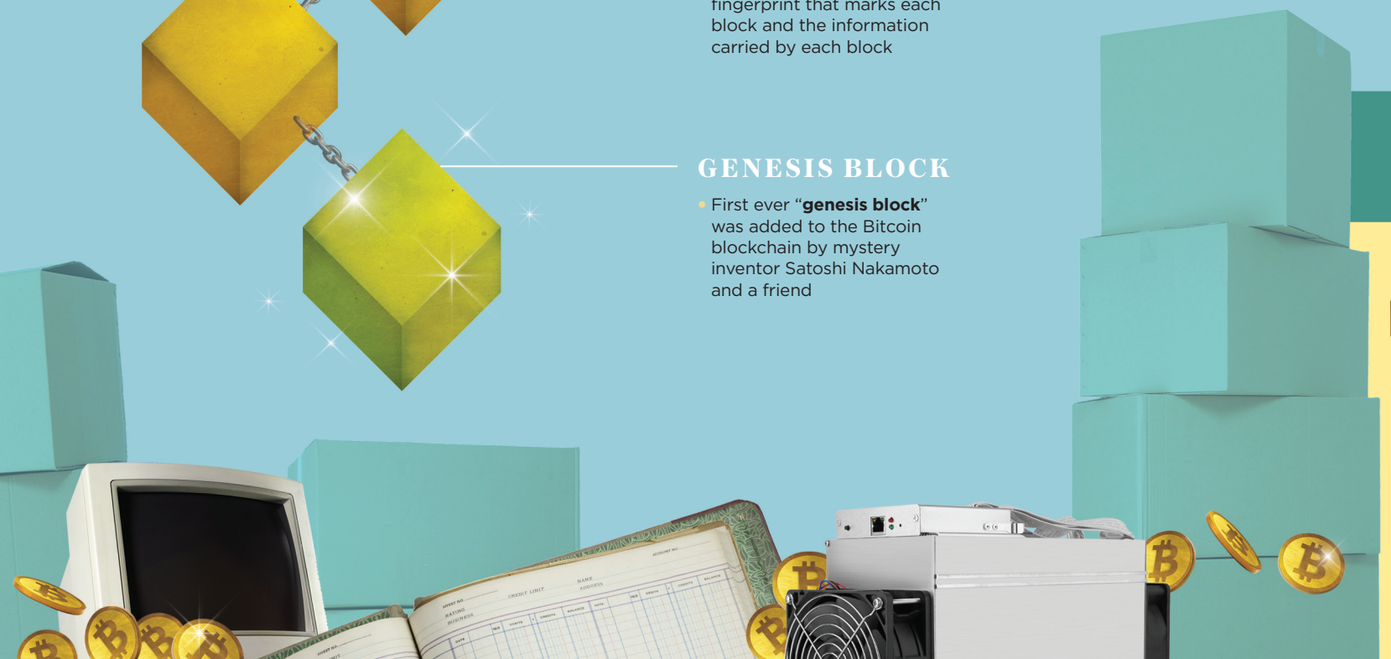
- Record of every single Bitcoin exchange
- Fully visible to anyone who wants to see

BLOCK

- Digital receipt of transactions
- Every block has a digital fingerprint that marks each block and the information carried by each block

GENESIS BLOCK

- First ever "**genesis block**" was added to the Bitcoin blockchain by mystery inventor Satoshi Nakamoto and a friend



1 NEW BLOCK

- New transactions initiated
- New transactions grouped into a block
- New block is broadcast to the entire mining network for validation

- These blocks did not get validated quickly enough
- These blocks and their chains die

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- Bitcoin miners compete to validate each new block using brute computational force in a race to solve the very difficult math associated with the block's digital fingerprint
- The fastest miner adds the next block to the chain
- Slower miners lose the race and do not add their blocks

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- Solving the math and validating the block earns a bitcoin reward
- Each validated block is broadcast to everyone in the network
- The mining network continues building on the updated blockchain
- All miners always build on the longest chain, which carries the most up-to-date validated blocks
- All updates are fully transparent

The blockchain resists fraud.

If a hacker tampers with the transaction record in one block, every subsequent block breaks

- Built into the Bitcoin blockchain design are incentives that keep miners honest.
- Miners get bitcoin payouts for accurately validating new blocks.
- Attempts to hack a long blockchain take too much time and computer power to be worthwhile.

- Long chains are extremely secure and hack resistant to date.
- The more blocks in the chain, the more work it takes to fake transactions.

- Easy for other miners in the network to spot the broken blocks.
- Easy to reject a broken blockchain.