Cryptocurrencies Overview: Key Information

Cryptocurrencies are **digital assets powered by blockchain technology**. Digital assets are electronic representations of value that exist in a digital format and can be owned, transferred, or traded, enabling peer-to-peer transactions, online payments, and decentralized applications, meaning they enable transactions without intermediaries such as banks or governments.

	BITCOIN	**ETHEREUM (ETHER, ETH)**	**SOLANA (SOL)**	**XRP**
1st Use	2009	2015	2020	2012
Primary Uses	Digital Money, Store of Value	Decentralized Applications (DApps), Smart Contracts, Stablecoins	Decentralized Applications (DApps), Smart Contracts, Stablecoins	Cross-Border Payments, Settlements, Interoperability, & Stablecoins
Platform Enablement	Peer-to-peer alternative to traditional currency-- "digital cash/digital gold" that doesn't rely on banks	Send money and run programs that work automatically on the internet	Send money and run programs very quickly and at low cost automatically on the internet.	Financial institutions send money internationally quickly & cheaply
Blockchain Platform	Bitcoin Network, Verification Mechanism - Proof of Work	Ethereum, Verification Mechanism - Proof of Stake (PoS)	Solana, Verification Mechanisms - Proof of History & Proof of Stake	XRP Ledger, Verification Mechanism - Validator Based
Supply *as of 11/30/25*	**Current:** ~19.95 Million **Max:** 21 Million	Infinite Supply - burns a small portion of Ether when using the blockchain network to offset inflation	Infinite Supply - burns a very small portion of SOL when using the blockchain network to offset inflation	**Current:** ~60.25 Billion **Max:** 100 Billion
Common Commodity Comparison	Gold	Oil	Natural Gas	Copper
Real World Scenario:	A person or company buys Bitcoin to use as a store of value, meaning something that holds worth over time	Crowdfunding: A smart contract holds funds in escrow and releases them only if the campaign meets its goal; otherwise, contributors get refunds	A gaming platform uses Solana for in-game asset transactions, enabling thousands of microtransactions per second at low cost	A bank, financial institution, or individual sends money internationally, instantly and at a low cost

Commonly Used Terms and Examples

DApps
Decentralized Applications built on blockchain networks that operate without centralized control, often using smart contracts.

Playing a blockchain-based video game, where in-game assets are owned as NFTs (non-fungible tokens) and traded on-chain.

DeFi
Decentralized Finance refers to blockchain-based financial services that eliminate intermediaries, enabling peer-to-peer lending, trading, and asset management, often through smart contracts.

Instead of using a bank to borrow money, a user borrows XRP directly from a lending protocol on the XRP Ledger.

Smart contract
A self-executing program stored on a blockchain that automatically enforces the terms of an agreement when predefined conditions are met.

An Ether holder sends 1 ETH to a smart contract, and once the contract terms are met it automatically transfers a token to the holder without needing a third party.

Stablecoins
Digital currencies designed to maintain a stable value by pegging to assets like fiat currency or commodities.

USD Coin (USDC) is pegged 1:1 to the U.S. dollar, allowing users to make payments or trade crypto without worrying about price volatility.

Staking
The process of locking up cryptocurrency in a blockchain network to help validate transactions and secure the network, typically earning rewards in return.

A SOL holder stakes 10 SOL on the network to become a PoS Validator and earns additional SOL as rewards for helping secure the blockchain.

Tokenization
The process of representing real-world assets such as real estate, equities, and bonds as digital tokens on a blockchain, enabling easier transfer and trading.

A company tokenizes Bitcoin holdings into fractional tokens, allowing investors to buy and trade smaller portions of Bitcoin through a blockchain-based platform.

Blockchain Verification Mechanisms:
Proof of History (PoH) - A cryptographic method that timestamps transactions to create a verifiable sequence of events, improving efficiency and speed.
Proof of Stake (PoS)- A consensus mechanism where validators are chosen to create new blocks based on the amount of cryptocurrency they "stake" as collateral.
Proof of Work (PoW) - A consensus mechanism where miners solve complex mathematical puzzles to validate transactions and add new blocks to the blockchain.
Validator- A network participant responsible for verifying transactions and maintaining the blockchain, often by staking tokens in PoS systems.

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