

# DeFi: The Visual Guide

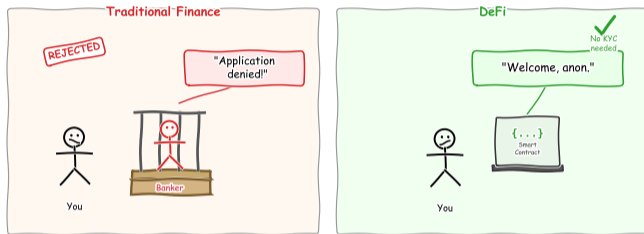
No Formulas, No Jargon — A Story in Pictures

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BSc Blockchain, Crypto Economy & NFTs

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## Bank vs DeFi



*Traditional finance asks for permission. DeFi asks for a wallet.*

**This lecture tells the story of how code replaces bankers — with zero formulas and lots of pictures.**

## What Will You Understand After This?

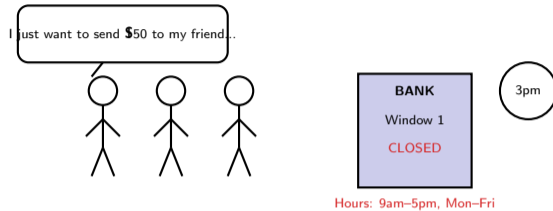
1. **Why** people want financial services without banks
2. **How** swaps, pools, and lending work — in pictures
3. **When** to use DeFi and when to be careful

*No formulas. No code. Just the ideas.*

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**This is a complement to the full DeFi lecture, not a replacement. Go deeper after you understand the story.**

# Have You Ever Felt Like This?



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**Banks have opening hours, long queues, fees, and paperwork. DeFi asks: what if code did all of this, 24/7?**

# Why Does Your Bank Close at 5pm?

## Three frustrations:

1. **Slow** — international transfers take 1–3 days
2. **Expensive** — fees for every transaction, account, and wire
3. **Gatekept** — 1.4 billion adults worldwide have no bank account

## The core question:

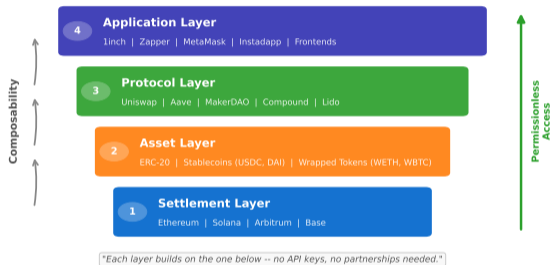
*“What if a computer program could do everything a banker does — but faster, cheaper, and open to everyone?”*

That program is called a **smart contract**.  
That world is called **DeFi**.

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DeFi = Decentralized Finance. Financial services built on blockchain code instead of bank infrastructure.

## The DeFi Stack



- Layer 1 (bottom): The blockchain — the foundation
- Layer 2–3: Tokens and protocols — the building blocks
- Layer 4 (top): Apps you actually use — like Uniswap

Each layer builds on the one below, like Lego bricks. This is why DeFi is called “composable.”

# What If You Could Trade Without a Broker?

## Traditional trading:

1. Open an account (passport, proof of address)
2. Deposit money (wait 1–2 days)
3. Place an order (the exchange matches you with a seller)
4. Pay fees to the exchange

The exchange holds your money the entire time.

## DeFi trading:

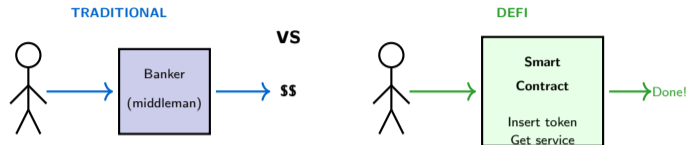
1. Connect your wallet (10 seconds)
2. Pick tokens to swap
3. Confirm (30 seconds)
4. Done — tokens in your wallet

You never give up control of your funds.

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On a DEX (decentralized exchange), a smart contract handles the trade. No account, no waiting, no middleman.

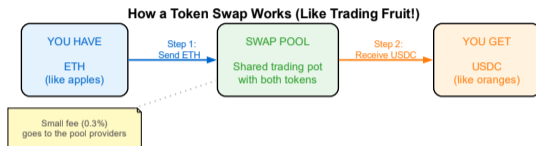
# Think of It Like a Vending Machine



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**A smart contract is like a vending machine: insert your input, get your output. No cashier needed, no negotiation.**

# How Does a Token Swap Actually Work?



**You send one token to a pool, the pool sends you another. The price adjusts automatically based on supply and demand.**

## But Who Fills the Pool with Tokens?

### On a traditional exchange:

- The company provides the liquidity
- They use “market makers” (professionals)
- You need their permission to trade

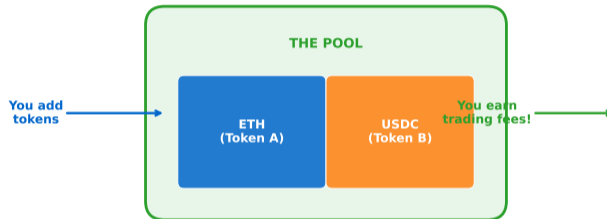
### In DeFi:

- **Anyone** can deposit tokens into the pool
- You become a **Liquidity Provider** (LP)
- Every time someone swaps, you earn a small fee
- It is like renting out your tokens and getting paid for it

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This is the key innovation: regular people provide the liquidity that makes trading possible, and earn fees for doing it.

## Liquidity Pool = Shared Trading Pot



*Traders swap tokens from this pool and pay a small fee.*

**You get a share of those fees for providing your tokens.**

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The pool always contains two tokens in balance. Every swap slightly changes the ratio, which is how prices are set.

# What If You Could Be the Bank?

## **Banks make money by:**

1. Taking your deposits
2. Lending them to borrowers
3. Charging interest
4. Keeping the profit

*You get 0.01% interest.  
The bank keeps the rest.*

## **In DeFi lending:**

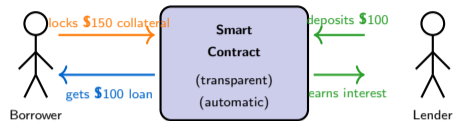
1. You deposit tokens directly
2. Smart contract lends them
3. Borrowers pay interest
4. **You** keep the profit

*No bank in the middle.  
The interest goes to you.*

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**DeFi lending protocols like Aave and Compound let anyone be a lender or borrower, with no application or credit check.**

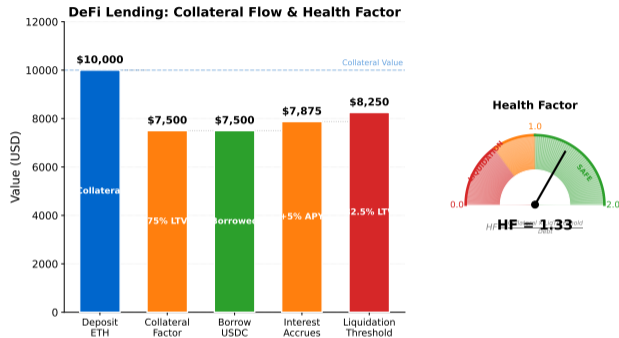
# DeFi Lending = A Transparent Pawn Shop



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To borrow \$100, you lock \$150 in collateral. If you do not repay, the contract sells your collateral automatically.

# How Does Collateralized Lending Work?



The “health factor” tells you how safe your loan is. If it drops below 1, the protocol sells your collateral to repay the debt.

### The problem:

- Bitcoin can move 10% in a day
- How do you price a coffee in ETH if ETH changes every hour?
- Lenders need stable collateral values

*DeFi needs "calm" money.*

### The solution: Stablecoins

- Tokens designed to always equal \$1
- Three different approaches to keeping the peg
- They are the "cash" of DeFi
- Over \$150 billion in stablecoins exist today

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Without stablecoins, DeFi lending and saving would be impractical. They bridge the gap between volatile crypto and stable value.

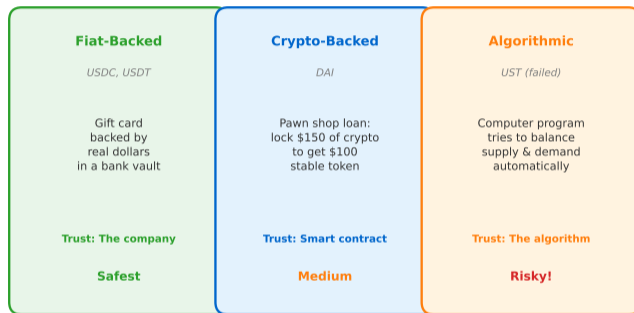
# Where Do People Trade Today?



**CEX = centralized exchange (Coinbase, Binance). DEX = decentralized exchange (Uniswap, Curve). Most beginners start on a CEX.**

# Three Ways to Keep a Token Worth \$1

## How to Keep a Token Worth \$1



**USDC (fiat-backed) is the safest for beginners. Algorithmic stablecoins like UST have failed catastrophically.**

## Three real risks:

1. **Smart contract bugs** — if the code has a flaw, hackers can steal funds (over \$3B lost in DeFi hacks since 2020)
2. **Rug pulls** — anonymous teams launch a project, attract deposits, then disappear with the money
3. **Stablecoin collapse** — Terra/UST crashed from \$1 to near \$0 in May 2022, wiping out \$40 billion

## The tradeoff:

Banks protect you *from yourself*.  
DeFi gives you *full control* — including the freedom to make mistakes.

*With great power comes great responsibility.*

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DeFi is not “better” than TradFi in every way. It is a different set of tradeoffs: more freedom, more risk, more responsibility.

## Rule 1

### **Start on a testnet.**

Practice with fake money first. Sepolia testnet is free and risk-free.

## Rule 2

### **Check the audit.**

Use only protocols with professional security audits. If there is no audit, run.

## Rule 3

### **Guard your keys.**

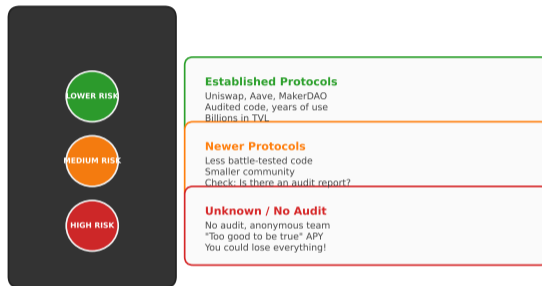
Never share your private key or seed phrase. Not with websites, not with “support.”

*If the returns sound too good to be true, they are.*

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The most common beginner mistake is clicking a phishing link. Always bookmark official sites and double-check URLs.

## DeFi Risk Guide: Know Before You Go



Green = battle-tested for years. Yellow = promising but newer. Red = proceed with extreme caution or avoid entirely.

## When Should You Use DeFi vs Traditional Finance?

	<b>Traditional Finance</b>	<b>DeFi</b>
<b>Access</b>	Need account + ID	Just a wallet
<b>Hours</b>	Business hours only	24/7/365
<b>Control</b>	Bank holds your money	You hold your keys
<b>Protection</b>	Government insurance	Your own diligence
<b>Speed</b>	1–3 days (international)	15 seconds

*Neither is “better” — they solve different problems for different situations.*

Many people use BOTH: a bank for salary and bills, DeFi for trading, lending, and earning yield on crypto assets.

## Three steps to your first DeFi trade:

1. **Install MetaMask** — free browser extension, takes 2 minutes
2. **Switch to Sepolia testnet** — click the network selector, choose Sepolia
3. **Get free test ETH** — Google “Sepolia faucet,” paste your address, click send

## Then try:

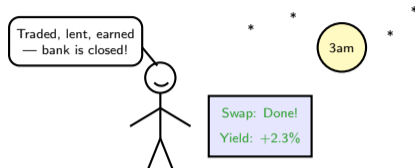
- Go to **app.uniswap.org**
- Connect your MetaMask wallet
- Swap test ETH for another token
- Watch the transaction on **Etherscan**

*Total cost: \$0. Total risk: \$0.*

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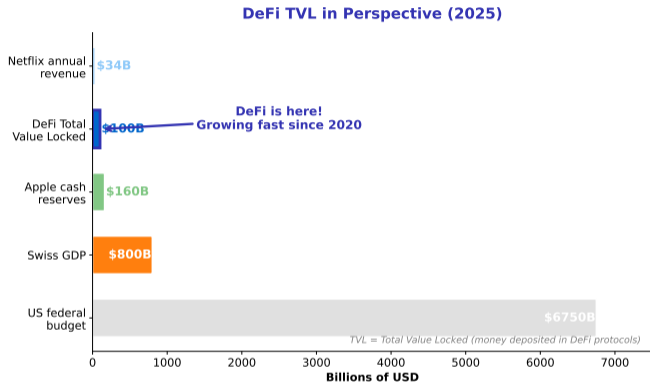
Everything on a testnet uses fake money. You cannot lose real funds. This is the safest way to learn.

## Meanwhile, at 3am...



The same person from Slide 4, no longer stuck in line. DeFi works when you want, where you want, at any hour.

# How Big Is DeFi Today?

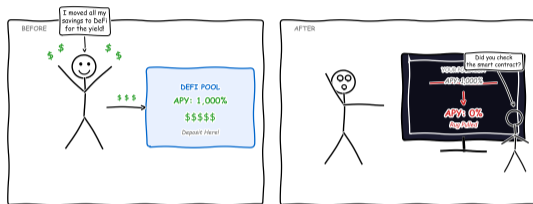


DeFi grew from near zero in 2019 to over \$100 billion. Still small compared to traditional finance, but growing fast.

# The Story in Five Sentences

1. **DeFi** replaces banks with smart contracts — code that runs 24/7
2. **Swaps** let you trade without a broker, using liquidity pools
3. **Lending** lets you earn interest directly, no bank in the middle
4. **Stablecoins** provide calm money in a volatile crypto world
5. **Risks are real** — start on a testnet, check audits, guard your keys

DeFi Yield Farming: A Cautionary Tale



"In DeFi, if you don't understand where the yield comes from, you ARE the yield."

You now understand the story of DeFi. For the math, mechanics, and deeper analysis, see the full DeFi Ecosystem lecture.