



[Home](#) › [For teachers](#) › Bitcoin Basics

NOTES FOR TEACHERS

The Problem Bitcoin Solves

Students learn why digital money can't simply be copied, how banks stop the same money being spent twice by keeping the record, and the different fix bitcoin proposed in 2008, with its trade-offs.

Grades 9–12

1:31 video

Saving 12-3b

Free to use, no sign-up

STEP 1

Before watching

You can copy a photo or a song as many times as you like. What would happen if you could do the same with the money in a bank account?

STEP 2

Watch the episode

Bitcoin Basics, 1:31: thesteadyblock.com/episodes/problem-bitcoin-solves/ (also on YouTube, @TheSteadyBlock)

STEP 3

Discussion questions

1. What is double spending, and why would digital money be worthless if anyone could do it?
2. How does your bank stop you from spending the same money twice? What do you gain from having one record keeper, and what is the risk?
3. Supporters of bitcoin say a record kept by computers around the world removes the need to trust one middleman; critics, such as the Bank for International Settlements, say such a system is slow, costly and hard to scale, and that there is no bank to call when something goes wrong. For everyday payments, which trade-off matters more to you, and why?

STEP 4

Exit quiz

1. What is double spending?

- A. Paying with the same money twice
- B. Paying a bill late
- C. Paying two people the same amount
- D. Paying with cash and a card at once

2. In today's banking system, what stops double spending?

- A. The shop you pay checks your wallet
- B. Your bank keeps the record and marks money as spent
- C. The person you pay remembers
- D. Nothing; it can't happen

3. What did Satoshi Nakamoto propose in 2008?

- A. A new kind of bank
- B. Printing more paper money
- C. Announcing every payment to everyone and letting computers around the world keep the record together
- D. Banning digital payments

4. If the same bitcoin is spent twice, which payment counts?

- A. The larger one
- B. The second one
- C. Both of them
- D. The first one

5. Which of these is a trade-off of bitcoin's approach mentioned in the episode?

- A. Payments are instant and free
- B. There's no bank to call, and mistakes are hard to undo
- C. Every payment is completely private
- D. Any payment can be reversed on request

Key terms

Double spending	Paying with the same money twice.
Middleman	A trusted go-between, such as a bank, that keeps the record of who paid whom.
Record (ledger)	A list of payments that shows who paid whom and what is already spent.
Shared record	A record of payments that many computers keep and check together, instead of one bank.

National standard

MAIN STANDARD • SAVING 12-3B

Compare and contrast the features of mobile payment accounts, cryptocurrency accounts, and checking/savings accounts.

Part of standard Saving 12-3: “Unless offered by insured financial institutions, mobile payment accounts and cryptocurrency accounts are not federally insured and usually do not pay interest to depositors.”

SPENDING 8-4C

Summarize the advantages, disadvantages, risks, and protections of various payment methods.

ECONOMICS STANDARD 11, GRADE 12, BENCHMARK 1

The basic money supply in the United States consists of currency, coins, and checking account deposits.

The episode compares two ways of keeping money's record, a bank and a shared network, and ends on the trade-offs (no bank to call, minutes to settle, public records, hard to undo): Saving 12-3b's comparison and Spending 8-4c's risks and protections. Its opening line, that most money is numbers on a screen, is the economics benchmark.

From the National Standards for Personal Financial Education (Council for Economic Education and Jump\$tart Coalition, 2021), Saving grade 12, p. 23; Spending grade 8, p. 17; Voluntary National Content Standards in Economics (Council for Economic Education, 2nd edition, 2010), Standard 11, p. 27.

Numbers in this episode

As of October 2026

- ≈ 9 in 10: Most US dollars are bank balances, not cash: cash was about 10% of the \$23.34 trillion M2 money supply in August 2026 (Federal Reserve H.6).
- 2008: On October 31, 2008, Satoshi Nakamoto posted the paper “Bitcoin: A Peer-to-Peer Electronic Cash System” to a cryptography mailing list. The creator’s identity is still unknown.

- 1st spend: The paper's rule: payments are announced to everyone, and when two spend the same coin, the earliest one counts.
- ~10 min: New blocks of payments are added about every 10 minutes on average, so a payment takes minutes to settle; many services wait for several blocks.
- 25,800: Publicly reachable computers (nodes) keeping and checking bitcoin's record on October 10, 2026, according to btcnodes.io; many more run without being reachable.

Where each number comes from is listed on the [episode page](#).

Further reading

For students or teachers who want to go deeper.

FOR STUDENTS

What To Know About Cryptocurrency and Scams (<https://consumer.ftc.gov/articles/what-know-about-cryptocurrency-and-scams>)

US Federal Trade Commission

Its section on paying with cryptocurrency explains in plain words why crypto payments lack the legal protections of card payments and usually can't be reversed.

FOR TEACHERS

Bitcoin: A Peer-to-Peer Electronic Cash System (<https://nakamotoinstitute.org/library/bitcoin/>)

Satoshi Nakamoto (2008), Satoshi Nakamoto Institute copy

Section 2, "Transactions", is the original description of the double-spending problem and of the fix the episode shows; short and readable.

FOR TEACHERS

Annual Economic Report 2018, chapter V: Cryptocurrencies: looking beyond the hype (<https://www.bis.org/publ/arpdf/ar2018e.pdf>)

Bank for International Settlements

A central-bank view critical of cryptocurrencies, arguing that a shared record is slow, costly and hard to scale; background for discussion question 3.

Links checked October 2026.

Free to use in class. Educational content only, not financial or investment advice.

Answer key: The Problem Bitcoin Solves

1. **A. Paying with the same money twice**

Double spending means using the same money for two payments, which digital copies would make easy.

2. **B. Your bank keeps the record and marks money as spent**

The bank keeps the record, checks each payment and marks money as spent.

3. **C. Announcing every payment to everyone and letting computers around the world keep the record together**

The bitcoin paper proposed a shared record kept by many computers instead of one middleman.

4. **D. The first one**

The first spend counts and the copy is rejected.

5. **B. There's no bank to call, and mistakes are hard to undo**

The episode lists the trade-offs: no bank to call, minutes to settle, public records, and mistakes that are hard to undo.

Educational content only, not financial or investment advice.

Episode narration uses a synthetic voice.