

It's Mine!

In this activity, learners simulate Bitcoin mining using playing cards as hashes and vocabulary words as transactions. Teams flip cards to find matching pairs. When they find two identical cards, they say “It’s mine.” A valid pair gives them access to the mempool, where they collect one Bitcoin vocabulary word. Words are grouped into blocks and only count after confirmation. The number of cards in the mining pool represents difficulty and is adjusted between rounds. Final scores are calculated by counting the total number of letters in confirmed words stored in each team’s wallet.

 **ACTIVITY TYPE**
Simulation · Game

 **DURATION**
45 min

 **PARTICIPATION**
Whole class · Small groups

OBJECTIVES

By the end of this activity, learners will:

- Explain that mining requires repeated attempts
- Describe how difficulty can increase or decrease
- Understand that transactions are grouped into blocks
- Recognize that confirmation comes before ownership
- Connect effort to reward

MATERIALS

- 1–2 decks of playing cards
- 40–60 Bitcoin vocabulary word cards (See Appendix A)
- 1 envelope per team labeled WALLET
- 1 large envelope labeled BLOCK
- Signs labeled MEMPOOL and MINING POOL
- Stickers or stamps for confirmation, Whiteboard for recording scores (*nice to have*)
- Timer
- Table or floor space for laying out cards
- Bell or signal sound for block completion (*nice to have*)

PROCEDURE

OPENING

1. Review key terms briefly: hash, mine, block, wallet, difficulty.
2. Keep explanations short and concrete.
3. Explain that today they must “prove work” before earning words.

PRE-ACTIVITY

5 minutes

1. Lay out 20 playing cards face down in a grid. Explain: Two identical cards = valid hash.
2. When you find a match, say clearly: “It’s mine.”
3. Demonstrate flipping two cards and replacing them if they do not match.

Objective In Student’s Words

- “I find a matching pair and say ‘It’s mine’ to earn a word for my wallet.”

ACTIVITY

30 minutes

Setup

1. Divide students into teams of 3–4.
2. Give each team one WALLET envelope.
3. Place all word cards face down in the MEMPOOL area.
4. Place the BLOCK envelope at the front.

Carry Out

1. Use 20 cards in the mining pool.
2. Teams take turns flipping two cards.
3. If they match, they say “It’s mine.”
4. They collect one word from the mempool.
5. They must read it correctly to keep it temporarily.
6. After 6–8 minutes, stop the round.
7. If too many words were mined, increase difficulty by adding more cards. If too few were mined, decrease difficulty by removing cards.
8. State simply: “When mining is too fast, we make it harder. When mining is too slow, we make it easier.”

Carry Out

1. At the end of each round, collect all earned words into the BLOCK envelope.
2. Announce “Block complete.”
3. Return confirmed words to each team’s wallet.
4. Only confirmed words count.

FOLLOW-UP

4 minutes

- What happened when we added more cards?
- Was it harder to find pairs?
- Did you earn fewer words?
- Did longer words give higher scores?
- Did everyone follow the same rules?

CLOSE

- Collect and count all playing cards and return them to full decks.
- Gather all word cards, empty wallets and the block envelope, and restack neatly.
- Clear the mining area, erase the board, and check for loose cards under tables and chairs.

NOTES

Classroom management

- Only one team flips at a time
- No touching cards out of turn
- Words must be read aloud clearly
- Cards must be returned neatly if unmatched

Extensions & Sponge Activities

- Introduce a halving event: after a set time, each valid hash earns only every second word
- Require red card pairs only for valid hashes
- Add a bonus if a team mines three pairs in one round

Differentiation

- Younger students: Using the word cards directly in the mining pool may make things easier.
- ELL/Accessibility: Add picture support to vocabulary cards. Allow peer reading assistance.
- Safety: Clear space around the mining pool. No running