

Brain Workout Activity Kit

PASSWORD MASTERMIND



Age: 5+

Time: 40–60 minutes for a guided session. The game can be repeated with new passwords and increased challenge levels, allowing for 2–3 hours of total play over one or multiple sessions.

Materials (for 6 teams of 4 players)

6 Password Station Boards (with Velcro)

6 Guessing Station Boards

6 sets of Password Cards (with Velcro)

6 sets of Guessing Cards

In Password Mastermind, players work in pairs to create and crack a secret password. One pair chooses a three-card password, and the other pair uses feedback clues to guess it. With each guess, players use logic, memory, teamwork, and evidence to improve their next move. The activity introduces important ideas about problem-solving and password safety in a playful, hands-on way.

1. Set Up the Teams

For 24 players, create 6 teams of 4.

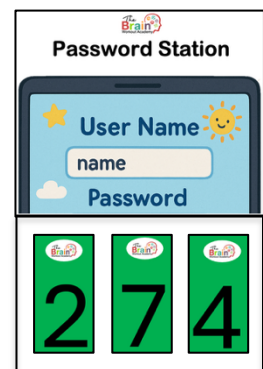
Each team is divided into two pairs:

- One pair begins as the **Password Team**.
- One pair begins as the **Guessing Team**.

After one round, the pairs switch roles.

2. Play Round 1: Number Only

- Distribute Materials:
 - Password Team receives a Password Station Board + bag of cards (board and cards have Velcro).
 - Guessing Team receives a Guessing Station Board + bag of cards.
- Guessing Team turns away or puts heads down on table so Password Team can choose three **Number** cards.
- Password Team places three Number cards in Password Station (e.g., 274) and the rest of their cards stay in the bag out of sight.
- Guessing Team lays out all Number Cards face up and sets the other cards aside.
- Guessing Team places their guess in Guessing Station (first guess is a wild guess, e.g., 245).
- Password Team provides feedback to Guessing Team on each card they placed, from left to right, using these



Feedback Clues:

Keep 😊 = the card is correct and in the correct space.

Move ↔ = the card is part of the password, but it is in the wrong space.

Out ✖ = the card is not in the password.

For example, if the password is 274 and the guess is 245, the feedback is **Keep** (2 is correct and in the right place), **Move** (4 is correct, but needs to be moved to another box), **Out** (5 is incorrect).

- Guessing Team listens to the feedback and responds by placing their next guess in the Guessing Station.
- Repeat until the password is cracked (Keep, Keep, Keep).
- Switch roles: Guessing Teams becomes Password Teams and vice versa.

3. Add Challenge Levels

- Add **Letter** cards: **A, B, C**. Repeat the game with a combination of numbers and letters: Password Team places three cards using any combination of letters and numbers; Guessing Team uses the Letter and Number cards to guess.
- Discuss: Was cracking the code easier or more difficult? using both letters and numbers? Why?
- Add **Special Character** cards: **@, &, %, !**. Repeat the game with all the cards in the bag: Password Team places three cards using any combination of letters, numbers and special characters; Guessing Team uses the Letter, Number and Special Character cards to guess.

4. Discuss Password Safety

- Ask players:
 - Was the password easier to guess when it used only numbers?
 - Was it harder when we added letters?
 - What changed when we added symbols?
 - What would happen if the password had 4, 5, or more characters?
 - Why are longer passwords usually harder to guess?
 - Why should we avoid using birthdays, names, or the same password for many accounts?
- Summarize: Strong passwords are usually long, unique, and hard to guess. A mix of letters, numbers, and symbols can help, but length and uniqueness are especially important.

TIPS FOR SUCCESS

Play with partners. Although this game can be played by individuals, playing as part of a small team has cognitive and social-emotional benefits. Playing with a partner encourages sense making, listening to each other and making arguments. Partner format provides opportunities to experience supportive relationships and increases sense of belonging.

Demonstrate the game with the whole group first. You can be the Password Team and the whole group can be the Guessing Team. The game can be played on the board. Demonstrate a few rounds until all Players understand it.

Increase complexity when Players are ready. This game can be played several times with numbers before including additional characters. With younger players, don't rush to introduce letters and special characters. With continued play, Players become skilled and more confident in drawing conclusions.

Encourage players to try to crack the code with the fewest number of guesses. Ask players to reason and justify their move so they make educated guesses based on reasoning, not random guessing.

Increase number of characters. After playing a few times, the code length can be increased to include 4 characters. Discuss if 4 characters are easier or harder to crack and connect to strong password length to safeguard logins in their apps.
