

Ecomon: A Sustainable Battle Game

Overview

Ecomon is a sustainability-focused, multi-platform game where players join a team. Being **Reduce, Reuse, and Recycle** - to battle for control over recycling bins. The game incorporates real-world sustainability initiatives through QR codes and GPS locations to encourage recycling and sustainability.

Gyms = Bins throughout the document.

Gameplay Mechanics

Core Concept

- Every day, **Team Fossil Fuel** takes over all recycling bins.
- Players **battle to win and defend gyms (recycling bins)** by scanning QR codes or using GPS locations.
- Battles use **cards** with attack & self-heal moves and sustainability facts.
- Players earn new packs and rewards based on their gameplay.
- The game promotes real-world sustainability initiatives through educational facts and baked in sustainability features.

Game Features

Teams

Players join one of three teams:

1. **Reduce**
2. **Reuse**
3. **Recycle**

Recycling Bins (Gyms)

- Physical bins have **QR codes** and **GPS locations** for scanning and battling.
- Bins can be **captured and defended**.
- Admins generate bins via an **admin panel**.

Players

- **Authentication required** (username, password, email).
- Players belong to a team and can own gyms.
- Players collect cards.

Cards

- Players collect and use **cards** in battles.
- They have two moves, first being attack and the second being self-healing or more damage attacking.
- Every card has a sustainability fact
- Each card has a type
 - Plastic card, high use count
 - Recycle: Medium use count
 - Plant: Short use count
 - Card prevent white-labelling the game as sustainability is baked in

Player Cards (Link Between Players and Cards)

- Tracks which cards belong to each player.
- **Composite Key:** (Player ID + Card ID)
- Status of the card (in deck, in gym, available for battle, etc.)

Decks

- A deck consists of **three cards used in battles**.
- Players select their deck from their collection before battling.
- This is not stored in the database.

Battles

- Players battle for control of gyms.
- Mechanics:
 - **Each player brings 3 cards** (1 main, 2 backups).
 - **Turn-based combat (similar to Top Trumps).**
 - **Random first move.**
 - **Available actions:**
 - **Attack** (uses Move 1 or Move 2)
 - **Swap** (switch to another card in the deck)
 - **~Heal** (small recovery for a chosen card)
 - **Simulated AI versions** of other players' decks available for battles.

Packs

- Players earn 1 card packs for logging in daily and winning gyms.
- Randomly generated cards from different rarity pools.
- When opened, cards are added to the collection.
- Packs are not stored in the database (only their contents are).

Sustainability Initiatives

- **Green campus resources:** Rewards for using real-world recycling/energy-saving initiatives.
- **Educational content:** Sustainability facts included in card descriptions.
- **Decomposition education:** Cards break down & disappear over time.
- **Recycling:** There is a maximum wrapper count before the user can open any more backs. The user disposes their packs by visiting a bin.

Admin Panel Features

- **Gym Management:** Generate and modify QR codes and GPS locations.
- **Card Management:** Create and update card attributes.
- **Player Monitoring:** Track active players, wrappers, and unopened packs.
- **Game Balancing:** Adjust attack stats, HP, and move effectiveness.

Conclusion

Ecomon merges sustainability education with engaging, real-world interactions, encouraging players to actively participate in eco-friendly behaviors while battling for dominance. The game's structure ensures a balance of **strategy, competition, and sustainability awareness**.