

* The Game Components, Physical Description & Rules *

Part 1: The Game Components & Physical Description

From Fragmented Waste to a Living Masterpiece "My Bravo Project is a Board Game called '**Circular Economy Simulator**' and represents 4 of the 17 United Nations Sustainable Development Goals (SDGs)."

This project is the result of creative brainstorming to bring a long-held vision to life, followed by intense research, physical work, and a huge amount of passion and time. With the exception of the cards, the entire project is made of crystal-clear Epoxy Resin. This resin is used as a "vessel" to "trap" the materials (inclusions) used for this project, serving as a permanent reminder of both our industrial waste and the precious fruits of our nature.

The game shows how we can take old, discarded items and give them a "Second Life" (Up-cycling). It is a powerful tool for learning because it lets you see and touch the importance of protecting our planet while you play.

The project aligns with the following goals:

- **Goal 12: Responsible Consumption and Production (The Core Goal):** By taking our "waste" (copper wire, plastic corks, aluminum foil, lithium button battery, steel spring...) and giving it a "Second Life," the game demonstrates the Circular Economy—the idea that nothing should ever be wasted.
- **Goal 4: Quality Education:** This goal is used as a tool for "Education for Sustainable Development," specifically designed as an educational game. By using a "Good vs. Bad" field system, it teaches players that sustainable choices lead to rewards, while environmental neglect leads to setbacks. It also allows players to learn remarkable and amazing things about our planet using the included cards called "DID YOU KNOW?"
- **Goal 14: Life Below Water:** Through the inclusion of shells and broken glass, the game discusses the beauty, health, and problems of aquatic ecosystems.
- **Goal 15: Life on Land:** The use of dry leaves, flowers, moss, and seeds connects the players to the protection and appreciation of terrestrial ecosystems.

The Game Board

1. The Foundation:

The Foundation is a high-durability, 64-field grid created using a silicone chess mold. It is cast in multiple layers of Crystal Clear Epoxy Resin, **patiently** poured in various colors with different types of inclusions. The board serves as a map of "Good & Bad," "Responsible and Irresponsible," as well as "Awards and Punishment" **of our planet**.

- **Durability:** Unlike cardboard games that tear or suffer water damage, a resin game lasts for decades. In the language of sustainability, longevity (making things that don't need replacing) is a key pillar of "Responsible Consumption" (Goal 12).
- **Safety:** Once fully cured (after 4–7 days), the resin is inert and solid, making it safe for students to handle and play!

2. The Inclusions:

The materials embedded within the resin are divided into four specific categories to represent the balance of the planet:

a) Industrial & Textile Waste (The BLACK Fields):

- **Technological Waste:** Copper wire extracted from old electronics, small gears, battery springs, screws, and silicon buttons from remote controls.
- **Hazardous Waste:** An old button battery serves as a powerful symbol of chemical energy that can leak and damage the ground.
- **Single-Use Pollution:** Polyethylene (PE) corks, aluminum foil, plastic bottle caps, and "The Plastic Imposer"—chewing gum.
- **Textile & Paper:** Scraps of up-cycled fabric, old newspaper, and candy wrappers.

b) Marine Elements (The WHITE Fields - Goal 14):

- **Natural Beauty:** Collected washed out by the sea empty sea shells to remind players of the ecosystems we must protect.

- **The Healed Planet:** Sea Glass (tempered glass). While originally human waste, its "washed" texture from the ocean symbolizes a planet in the process of healing.
- **The Inclusions:** The Playing Pions (Figurine Characters):

3. The Playing Pions (Figurine Characters) :

The materials embedded within the resin are divided into four specific categories to represent the balance of the planet: Five unique, handcrafted Epoxy Resin figurines representing different environmental roles.

Each pion is a great work of art, with inclusions placed into tiny, narrow chess molds. These require extreme precision, especially in the case of the dry flower inclusions.

Each figurine sits on a "Status Indicator Base" (in Red, Green, Black, White, or Blue color) to logically connect the character to its corresponding role on the board fields.

4. The "Nature's Piggy Bank" Awards:

- **Lucky Charms (Pendants):** Beautifully cast Epoxy Resin jewelry awarded for "taking care of our nature," containing the most delicate dry flowers, leaves, and sea shells.
- **Resin Coins:** Golden and silver color coins (Crown and Checkers) colored with hand-blended shimmery Mica pigment for the final "Planet Winner" calculation.

5. The Educational Card System:

- A complete physical deck of cards designed specifically for the purpose of this game to bridge "play" with deep environmental knowledge.

a) Call to Action & Surprise Cards: 18 color-coded cards providing immediate rewards or consequences.

b) "Did You Know?" Cards: Detailed A6 cards featuring images of the board's inclusions (seeds, tech parts, shells) to teach the real-world amazing facts behind every field inclusion.

c) BEE Cards: A6 format cards in Golden color providing high-importance educational messages about the miracle of the bees.

d) Awards Cards: The Award System, explaining the specific rules and value of the Golden and Silver coins, and the "Lucky Charms" pendants.

Part 2: The Game-play & "Circular" Rules

"RULES" OF THE GAME

Player Capacity & Teams

- **Individual Play:** This board game can be played by a maximum of 5 individual players.
- **Group Play:** It is also designed for schools "Play and Learn Days," where a maximum of 5 teams can play together.
- **Team Sizes:** Each team can include any number of players, though it is advised to have an uneven number of members.
- **Decision Making:** Uneven team numbers allow the group to settle choices through voting (e.g., 2:1 or 3:2) when faced with in-game decision making.

Choosing Figurines & Starting the Game

- **The Youngest Player Rule:** Both the selection of figurines and the first move are determined by the youngest player. This rule emphasizes that the future of our planet belongs to the next generation.
- **Starting the Journey:** Following the selection, the journey begins with the youngest player rolling the dice.
- **The Turn:** Play proceeds in a clockwise direction.
- **The Rule of 6:** If a player rolls a 6, they are granted a "Roll Again" bonus, symbolizing a surge of positive momentum in sustainable action. This action continues until the player rolls a 5 or less.

Movement Mechanics

- **The Path:** Players move their figurines across the 64-field grid based on the number rolled on the die.
- **Interactive Inclusions:** Every field is a learning moment; upon landing, a player must interact with the specific inclusion or image, which dictates if they receive a reward, a setback, or a "Call for Action."
- **Neutral Zones:** Fields without inclusions allow the player to "sit" on the grass or "swim" in clean waters while waiting for their next turn.

Field Consequences: "Good vs. Bad" Logic

- **The "Good" Fields (White, Blue, Green):** Landing here represents sustainable choices like planting trees or protecting clean water. Players may receive award bonuses, such as rolling again or jumping forward to a safe zone.
- **The Trap Warning:** Be careful—some "Good" color fields contain "Bad" inclusions acting as traps, where players will receive a "Call to Action" instead of a reward.

- **The "Surprise Card" Option:** There are 18 "Surprise Cards" (6 Good and 12 Bad). When a player steps on a "Bad" field, they have a choice: or accept direct punishment a "Call to Action" card or pick from the "Surprise Cards" pile. By picking from this pile, they hope nature will forgive them this time by being lucky and drawing a "Good" card instead of being directly punished for polluting the planet.

The Reward System

A: Lucky Charms

- **Earning Charms:** When a player lands on a "Good" field with a natural inclusion, they are awarded with a "Lucky Charm" Pendant. This represents the resilience we build when we take care of nature.
- **Redeeming for Freedom:** These charms can be used to skip forward to a neutral field or to escape from "Trapped Fields" by trading in 1 to 5 charms.

B: Resin Coins

- **Recycling for Rewards:** When landing on a "Bad" field (Black), players may face punishment but also have the option to travel back to a recycling station. By choosing to recycle, they earn a Golden or Silver Coin award.

Final Scoring:

Once everyone has finished, points are calculated based on the coins collected.

- **Golden Coins:** Worth 7 and 5 points.
- **Silver Coins:** Worth 3 and 1 points.

Instructional Cards: There are 3 extra cards—one with a Golden Coin image, one with a Silver Coin image, and one with a Lucky Charm image—explaining exactly how to use each reward.

The Educational "Did You Know?" Cards

- **The Setup:** The cards are placed on the table facing up with the question "Did You Know?". They are organized into five colors: Black, White, Red, Green, and Blue.
- **Voluntary Learning:** When players land on a field with an inclusion, they have the option to pick up the card with the same number of the field and educate themselves and their fellow players on real-world amazing facts.

The Final Goal: "The Planet Winner"

- **The Golden Finish:** The game ends at the Gold Bee Field, representing the "Most Important Living Being on Our Planet" and the miracle of life.

- **Calculating the Score:** While the first person to reach the Bee is the "Speed Winner," the game is only truly over when everyone finishes.
- **Points System:** Players count their collected Resin Coins:
 - Golden Coins: 7 and 5 points.
 - Silver Coins: 3 and 1 points.
- **The Golden BEE Cards:** There are total 12 (10+2) gold-colored cards featuring the BEE. Because bees have so much to tell us and are extremely important, these are placed on the table to be read at the end. When the first player finishes, he/she picks the card numbered "1 & 2" to read aloud. Since there are 5 players, there are 5×2 cards (2 for each player) to be read as a message upon each player finishing. At the end of the game there will be 2 left. This will be read by the "Planet Winner"

The Ultimate Title: The player with the highest total score is crowned *"The Planet Winner"* because their choices throughout the game helped the ecosystem the most.

3.TABLES OF ELEMENTS

Table 1: The Sustainability Logic Table

Game Element	Bravo Schools Sustainability Connection	Educational Message
The GOOD Fields	The SDGs in Action (Goal 4)	These represent sustainable choices like upcycling waste and protecting nature, teaching players "Education for Sustainable Development" through active play.
The BAD Fields	The Global Challenges (Goal 12, 14, 15)	These represent unsustainable actions, specifically plastic pollution in our oceans and land, showing the negative impact of a "Linear Economy."
The AWARDS	Resource Management & Resilience (Goal 15)	Nature provides a "safety buffer." These represent the rewards and resilience we build when we protect biodiversity and land ecosystems.
The WAIT / REVERSE Turns	Environmental Consequences	Being "trapped" or sent backward represents how environmental damage and pollution limit our progress and resources in the real world.
The RECYCLE STATIONS	Circular Economy Hubs (Goal 12)	Landing here allows players to "correct" a bad action by returning waste to the loop, demonstrating that nothing is truly "trash" if we choose to recycle it.

Table 2: The Color Coding Fields Strategy

Field Type	Fields Color	Symbolism for the Project
GOOD (Awards)	WHITE	Represents Zero Waste and Circular Economy (Goal 12). These fields contain food inclusions and pressed flowers, rewarding players with "Lucky Charms" for protecting nature's purity.
GOOD (Nature)	GREEN	Represents Life on Land (Goal 15). It symbolizes fresh growth, reforestation, and the "Lungs of the Earth" where players find safety and progress.
GOOD (Ocean)	BLUE	Represents Life Below Water (Goal 14). It symbolizes crystal-clear water and healthy marine ecosystems, offering extra rolls for "diving" into sustainable actions.
BAD (Waste)	BLACK	Represents the Carbon Footprint and Irresponsible Production (Goal 12). These fields contain textile and industrial waste, acting as the "shadow" of pollution that causes setbacks.
BAD (Toxic)	RED	Represents an Emergency Warning (Goal 12). These fields contain hazardous waste like batteries or wires, signaling urgent environmental danger and strict punishments.
GOLD (The Achievement of The Ultimate Balance)	GOLD	Represents the Bee and the success of the Circular Economy (Goal 12). It symbolizes the ultimate reward nature gives us back when we achieve a perfect, sustainable balance.

Table 3: The Chess Pions (Characters) Table

Shape/ Pion Description	Status	Status Indicator Base	Inclusions	The "Second Life" Narrative
King	GOOD	WHITE	Dry Flowers and Dry Leaves	The Nature King: A protector of the earth who reminds us to love and keep our forests and gardens green and healthy.
Castle (Rook)	GOOD	BLUE	Sea Shells	The Coastal Guardian: A silent guard of the beach, reminding us that shells belong on the sand, not trash.
Bishop	GOOD	GREEN	Sea Glass	The Ocean Spirit: A reminder of the natural beauty we protect when we keep our beaches clean and our oceans healthy.
Knight (Horse)	BAD	RED	G4 Halogen Bulb	The Fast Tech: Represents the rapid, jumping growth of electronics and the hidden danger of toxic E-waste in our environment.
Queen	BAD	BLACK	Copper Wire	The Industrial Shadow: Represents the heavy footprint of manufacturing and the complex waste left behind by our technological progress.

Table 4: The AWARDS Table

Object Description	Status	Color / Inclusion	Where / How to Use Them
LUCKY CHARMS (Pendants)	<i>Nature award for taking care of our nature</i>	Dry Flower Dry Leaves Sea Shells	Escaping from trapped Fields or used to move forward (check the rules)
GOLDEN COIN (Crown)	<i>Nature awarded for recycling</i>	Golden Color No Inclusion	Keep in " <u>Nature's Piggy Bank</u> " collecting points for "The Planet Winner" award 7 points or moving 7 steps forward
GOLDEN COIN (Checkers)	<i>Nature awarded for recycling</i>	Golden Color No Inclusion	Keep in " <u>Nature's Piggy Bank</u> " collecting points for The Planet Winner award 5 points or 5 steps max back
SILVER COIN (Crown)	<i>Nature awarded for recycling</i>	Silver Color No Inclusion	Keep in " <u>Nature's Piggy Bank</u> " collecting points for The Planet Winner award 3 points or moving 3 steps forward
SILVER COIN (Checkers)	<i>Nature awarded for recycling</i>	Silver Color No Inclusion	Keep in " <u>Nature's Piggy Bank</u> " collecting points for The Planet Winner award 1 points or 1 step back

Table 5: The Cards Table

Card Type	Format /Size	Primary Function	Inclusion/Theme Reference
Call to Action	A7 Format	Provides direct game-play instructions when a player lands on a specific field.	Matches the field number and color
Did You Know?	A6 Format	Educational facts explaining the environmental impact of specific materials.	Matches the field number, color, and has image of the field (inclusion)
Surprise Cards	A7 Format	18 cards used for random rewards or penalties during the journey.	The "Circle" 4-Color Logic
Awards Cards	A6 Format	Explains the specific rules and value of The Golden Coins, Silver Coins, and the Lucky Charms.	The Award System
BEE Cards	Gold Color A6 Format	High-importance educational messages about the miracle of bees, to be read aloud by each player as they finish.	The Golden Bee / Sustainability Message