1) Educational Game Title
Guardian of Little Gaia

2) Synopsis
In today's world, environmental awareness and sustainability are more important than ever. As secondary school students begin to navigate a more autonomous phase of their lives, they encounter opportunities to make choices that significantly impact the environment. Recognizing this pivotal moment, this proposal is being put forward to create Guardian of Little Gaia, an innovative educational video game designed specifically for this age group.

Guardian of Little Gaia aims to empower students by providing them with the knowledge and tools to make environmentally friendly decisions in their daily lives. Understanding that this age group values independence but also faces the challenge of developing sustainable habits, the game is crafted to be both engaging and informative, encouraging players to explore the consequences of their actions in a virtual world that mirrors real-life environmental issues. The game is set in a vibrant, interactive world on little planets called Gaias where players navigate through various scenarios that mimic real-life choices, such as waste segregation, opting for sustainable meals, the production and conservation of energy sources, and engaging in activities like growing food and trees. Each choice made by the player impacts the virtual environment in noticeable ways, teaching the importance of individual actions in contributing to a healthier planet.

The game incorporates a progress tracking system, offering feedback and rewards to motivate players to continue making eco-friendly choices. By completing challenges and achieving certain milestones, players can unlock new levels and scenarios, keeping the gameplay dynamic and engaging. Recognizing the importance of parental involvement in guiding their children's online activities, there is also the suggestion of developing a companion instructional video for parents. This would aim to educate parents about the game's objectives and how it can serve as a tool for discussing environmental issues with their children, fostering a collaborative approach to environmental stewardship within families. To ensure the game is both accessible and convenient for its target audience, Guardian of Little Gaia is developed as a web-based game, allowing players to access it from any device with internet connectivity without the need for additional installations. This approach not only makes the game easily accessible to a broader audience but also aligns with the environmentally friendly message of reducing unnecessary consumption.

Guardian of Little Gaia is more than just a game; it's an educational tool designed to inspire secondary school students to make conscious, sustainable choices every day. By blending interactive gameplay with real-world environmental challenges, the game seeks to instill a sense of responsibility and empowerment in young individuals, paving the way for a more sustainable future.

3) Target Audience

Primary Target Audience: Secondary School Students (Ages 12-18)

This age group is beginning to form their own opinions, understanding the world around them more critically. They are tech-savvy, curious, and looking for ways to express their individuality. They are also at a pivotal stage where habits formed can last a lifetime, making it an optimal time to instill sustainable practices. They require engaging and interactive content that challenges their problem-solving skills and creativity. Educational tools for this group should be dynamic, offering a balance of entertainment and learning that taps into their natural curiosity and willingness to learn. Incorporating elements of gamification, social interaction, and real-world relevance. The game should allow for personalization and expression of individuality, enabling players to see the direct impact of their choices in a visually engaging and emotionally resonant way.

Secondary Target Audience

- Younger Students (Ages 9-11)
  By slightly simplifying some of the game's concepts or providing a guided mode, Guardian of Little Gaia can appeal to upper elementary students who are eager to learn and engage with environmental topics. This expansion can help instill eco-friendly habits at an even earlier age.

- Families
  While the game is designed with secondary school students in mind, its themes and mechanics have a universal appeal. Encouraging families to play together can foster discussions about sustainability at home, bridging generational gaps in knowledge and attitude towards environmental issues.

- Educators and Schools
  By aligning the game's content with educational standards and curricula, it can become a valuable tool for teachers looking to integrate environmental education into their classrooms. This broader approach can help normalize sustainable practices within the educational system.

- International Audiences
  Environmental issues are global, and so is the appeal of Guardian of Little Gaia. By localizing the game content to reflect different cultural contexts and environmental challenges around the world, the game can inspire action and awareness across diverse communities.

Ensuring the game is accessible to students with different needs is crucial. This includes offering multiple difficulty levels, adjustable settings for visual and auditory accessibility, and ensuring the game is free or low-cost to make it accessible to students from all socioeconomic

backgrounds. Additionally, incorporating diverse characters and scenarios can help players from various cultures and backgrounds see themselves in the game, increasing its relevance and impact.

4) Learning Objective
By the end of the game, the students will make informed, sustainable choices through interactive gameplay that mirrors real-world environmental challenges.

5) Game Objectives
Players are tasked with maintaining their planet's health by completing four daily tasks: waste segregation, creating sustainable meals, production and conservation of energy, and participating in food and tree planting. Successfully nurturing their planet for a continuous 30 days (at a score of above 95%) leads to the completion of the game, though players can continue to play beyond this to reach a higher score and move up on the leaderboard.

Out of the four tasks, only waste segregation is accessible at the start of the game. The other tasks—opting for sustainable meals, conserving energy, and planting trees—become available as players achieve specific scores in the preceding task.

6) The Tasks/Levels

Stellar Recycling
Level Objective Stellar Recycling introduces players to the fundamentals of waste management and recycling through a fast-paced, interactive experience. Set inside the planet's station, this level challenges players to sort various types of waste into the correct recycling bins, emphasizing the importance of reducing landfill waste and promoting recycling habits. The goal is to teach players how proper waste segregation can have a significant positive impact on the environment, conserving resources and reducing pollution. **Gameplay Mechanics** Players are presented with a stream of waste items moving along conveyor belts towards disposal chutes. They must quickly drag and drop each item into the appropriate bin: recyclables, compost, electronic waste, and landfill. Later in the game special items occasionally appear that can be used to decorate the players personal space. Success in Stellar Recycling impacts the availability and effectiveness of resources in subsequent levels, such as the quality of soil in Starlight Harvest or the energy consumption in Astro Power. This integration demonstrates the interconnectedness of environmental actions and reinforces the game's overarching message of sustainability and stewardship. **Challenge Escalation** The level becomes increasingly challenging as players advance. The game starts with a single conveyor belt but gradually increases in difficulty with the addition of multiple belts, faster speeds, and a wider variety of items to sort. They encounter more complex waste streams, including items that can be upcycled or require special disposal methods.

Time-limited challenges and scenarios that mimic real-life recycling dilemmas (e.g., sorting contaminated recyclables) test the player's ability to maintain accuracy under pressure.

Cosmic Cuisines

Level Objective
In the Cosmic Cuisines level, players are introduced to the concept of sustainable eating by preparing meals using ingredients that minimize environmental impact. The goal is to create meals that require fewer resources, particularly water and land, to produce. Players learn the importance of choosing plant-based ingredients over animal-based ones to conserve resources and reduce carbon footprints. As players progress, they encounter challenges such as limited water supply and the need to balance nutrition with sustainability. Success in this level teaches players the environmental benefits of a plant-based diet and encourages them to make more sustainable food choices in real life.

Gameplay Mechanics
Players select ingredients from a virtual pantry to create meals. Each ingredient has a water and land usage score, and the game provides feedback on the environmental impact of the meal. High scores unlock additional ingredients, some of which can be grown in the "Starlight Harvest" level, creating a link between the levels and emphasizing the cycle of sustainable living.

Challenge Escalation
As players advance, they face scenarios with increasing complexity, such as ingredient shortages, and seasonal changes affecting ingredient availability. These challenges simulate real-world considerations in sustainable eating, teaching players to adapt and think critically about food choices.

Starlight Harvest

Level Objective
Starlight Harvest encourages players to engage in sustainable agriculture by growing their own food as well as trees for the production of more oxygen. The level emphasizes the importance of water conservation, soil health, and biodiversity. Players learn how to choose and rotate crops based on their environmental benefits and how to use natural resources wisely to boost their planet's garden's productivity and sustainability.

Gameplay Mechanics
Players plan and manage land, selecting from a variety of crops with different growing times, water needs, and benefits. They must balance water use and plan crop rotations to maintain soil health. Successful gardening efforts yield ingredients that can be used at the Cosmic Cuisines level and oxygen, needed throughout the game, reinforcing the connection between sustainable agriculture and food choices as well as trees and planet health.

Challenge Escalation
As the planet becomes greener, players must deal with unpredictable weather patterns, pest invasions, and the need to expand their crops while maintaining its sustainability.

Astro Power

Level Objective
Astro Power focuses on the importance of energy conservation and the use of renewable energy sources. Players are tasked with replacing the planet's energy juice with solar power, learning about the impact of different energy sources on the environment.

Gameplay Mechanics
This level features a dual-focus gameplay mechanic. Players start by strategically placing solar panels to maximize sunlight capture, shifting their planet's energy source towards solar power. Each successful setup boosts the planet's sustainability score and cuts carbon emissions. As the game moves forward, players must also identify and turn off unnecessary electrical devices in their station, highlighting energy conservation's role. Balancing solar panel placement with energy conservation efforts challenges players to think critically about how energy use impacts environmental health.

Challenge Escalation
As players advance, they encounter varying weather that affects solar production, necessitating strategic placement of panels for optimal energy generation. The game presents situations with fluctuating energy demands, urging players to manage solar resources and conservation efforts effectively. In advanced stages, players need to ensure solar production aligns with the planet's energy requirements, avoiding excess or insufficient power. Time-sensitive challenges force players to swiftly respond to unexpected shifts in energy needs, showcasing the need for strategic foresight and adaptability in managing renewable resources for sustainability.

It is important to mention that by progressing through these levels, players not only learn about individual sustainability practices but also how these practices are interconnected, reflecting the holistic nature of environmental stewardship.

7) Platforms
Windows, Mac, smart devices (iOS and Android)

8) Advantages & Limitations

Advantages

- Guardian of Little Gaia offers an engaging platform where players can learn about environmental sustainability through interactive gameplay. The incorporation of dynamic content such as changing environments, unlockable levels, and the introduction of new, more challenging scenarios as players progress, ensures a fresh and engaging experience. The game's design, which incorporates vibrant pixelated graphics and immersive sound effects, helps in creating an engaging world that can captivate the players' attention and make the learning process enjoyable.
- The game structure allows for repeated practice of sustainable behaviors in a virtual setting, enabling players to master the concepts of waste management, sustainable eating, energy conservation, and more. This repeated exposure is crucial for habit formation, making the educational content more likely to translate into real-world actions.

- By progressing through levels only after mastering the previous ones, players learn the importance of each environmental action without the possibility of skipping crucial information. This progression system ensures a thorough understanding and appreciation of sustainable practices.
- As a web-based game, Guardian of Little Gaia can be accessed on various devices, allowing players to engage with the content anytime, anywhere. This flexibility ensures that learning about environmental sustainability is not confined to a classroom setting and can become a part of the students' daily lives.
- The game provides instant feedback on players' choices and actions, reinforcing correct behaviors and offering suggestions for improvement. Additionally, the ability to track progress encourages continuous engagement and motivates players to strive for better environmental choices.
- The inclusion of a companion instructional video for parents and alignment with educational standards for schools facilitates a collaborative approach to environmental education, bridging the gap between digital learning and real-world environmental stewardship.

Limitations

- While the game is designed to be engaging and educational, it may not attract children who are not inherently interested in video games. This limitation could restrict the game's ability to reach all segments of the target audience.
- Access to the game is contingent on having an internet connection and compatible devices. This requirement may exclude students from low-income families or regions with limited technology infrastructure, thereby widening the digital divide.
- Given the ongoing debate about the impact of screen time on children, some parents and educators might be hesitant to endorse a game-based learning tool, fearing it might contribute to excessive screen exposure.

Game Concept

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