Team 8: Reuse ReDuke Recycle
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DukeCoin: *A Digital Ecosystem to Promote Sustainable Behavior Among Master's Students*

Problem Identification and Definition

Duke master's students have opportunities to make sustainable choices every day, such as our choice of transportation, the foods we eat, and the goods we consume. These decisions are all influenced by our internal assessment of cost and benefit. When we determine the benefits of a particular decision outweigh the costs, we act accordingly. For example, one may purchase a cup of coffee to-go rather than brew coffee at home to save time. However, our assessments tend to center on our individual immediate costs and benefits. There may be external costs of our decisions we fail to consider. Namely, our actions often carry profound environmental implications outside the scope of our individual cost-benefit analysis. Our decision to buy a coffee to-go would not usually consider the environmental cost of a disposable cup, unsustainable business practices, or transportation.

This difference between individual and social costs leads to unsustainable outcomes in the long term. To encourage master's students to engage in more sustainable behaviors, the balance between benefits and costs in students' mental calculations must be rectified to reflect the true value of relevant options. We propose a program for doing just that, a digital currency which we've named DukeCoin (DC).

Feasibility, Implementation, Strategy, and Impact

DC will serve as a credit ecosystem to align the individual and social costs of our actions. When master's students make environmentally friendly choices, DC will serve as "reimbursement" for the avoided social costs of unsustainable "default" choices. The DC Ecosystem comprises three components: a digital marketplace, provision, and redemption.

Digital Marketplace	Provision	Redemption
Students find opportunities to receive and redeem DC.	Students receive DC for sustainable behaviors.	Students redeem DC for "non-harmful" rewards.
e.g., Student decides to serve a volunteer shift at Duke Gardens.	e.g., Duke Gardens deposits a DC to student's account for a shift at the produce garden.	e.g., Student redeems DC for exclusive tickets to the next Duke basketball game.

DC makes several key design decisions to ensure feasibility, measurability, and a significant potential to influence student decisions.

1. **eAccounts Platform**: We will extend our preexisting mobile payments system by adding a separate account for DCs. Using the eAccounts platform is also key due to its built-in tracking mechanism. Duke will have immediate access to all transactions involving DCs, enabling the aggregate analysis of master's student behavior.
2. **Marketplace**: The Marketplace will serve two purposes. Foremost, it will increase the visibility of opportunities for students to make sustainable decisions. It will showcase behaviors such as thrifting on DukeList, volunteering around campus, and attending workshops. Second, it will offer a seamless way for students to redeem their DCs.
3. **Modularity**: We aim to start small and grow DC sustainably. Our system will begin with a single provider and a single redemption source. However, our system may scale by onboarding additional stakeholders within the campus community to the DC ecosystem.

Intended Results
- Raise awareness towards opportunities for students to engage in sustainable and potentially underutilized campus programs.
- Promote sustainable behaviors by aligning individual and social costs.
- Address the diverse needs of Duke master's students, such as reducing student expenses and combating social isolation. DC may allow students to earn discounts on campus dining and event tickets, alleviating financial strain. Additionally, DC may foster social connections through initiatives like a "Bring a Friend" program, in which students earn extra DC for involving peers in activities. Further, all DC partners can be accessed via existing Duke transportation infrastructure thereby not privileging students with cars better access. Unlike other programs like Feed Every Devil or SNAP/EBT, DC has no exclusionary criteria, ensuring all master's students can benefit.

Stakeholder Engagement

Our initial plan comprises as few stakeholders as possible. Duke OIT will be responsible for integrating DC within the eAccounts platform and maintaining the online marketplace, ideally in collaboration with students in a Climate + summer project. Duke Gardens will serve as the initial partner organization for distributing DC to volunteers. Duke Athletics will serve as the initial partner for accepting DC in exchange for exclusive tickets.

Expansion

The Office of Sustainable Duke may maintain a student team to attract organizations to the DC ecosystem. We envision some potential partners as follows:
- ***Provision Partners***: Duke Gardens, Duke Campus Farm, Duke Forest, Duke Lemur Center, Campus Pantry, Duke List, Environmental Education Workshops
- ***Redemption Partners***: Duke Athletics, Duke Arts, Campus Dining, Duke Recreation

For options where DC is used in addition to or as a substitute for dollars, Duke should consider the challenges posed to the costs of the program and effects on participation from external vendors. These challenges alone do not constitute reason to dismiss these options. Duke can mitigate costs via strategies including limiting the amount of redeemable DC and by imposing a fee for for-profit vendors to join the DC ecosystem. Redemption opportunities will always be curated to maximize the environmental benefit to financial cost ratio.

Timeline

Now	Spring 2024	Fall 2024	2025 -
• Contact stakeholders to assess feasibility and logistics	• Integrate DC to eAccounts • Finalize campus partners	• Roll out DC • Credit 2 DC to all accounts to catalyze user engagement	• Maintain a team to oversee improvements and expansion

DC is not a currency for consumers, but a currency for the climate.