

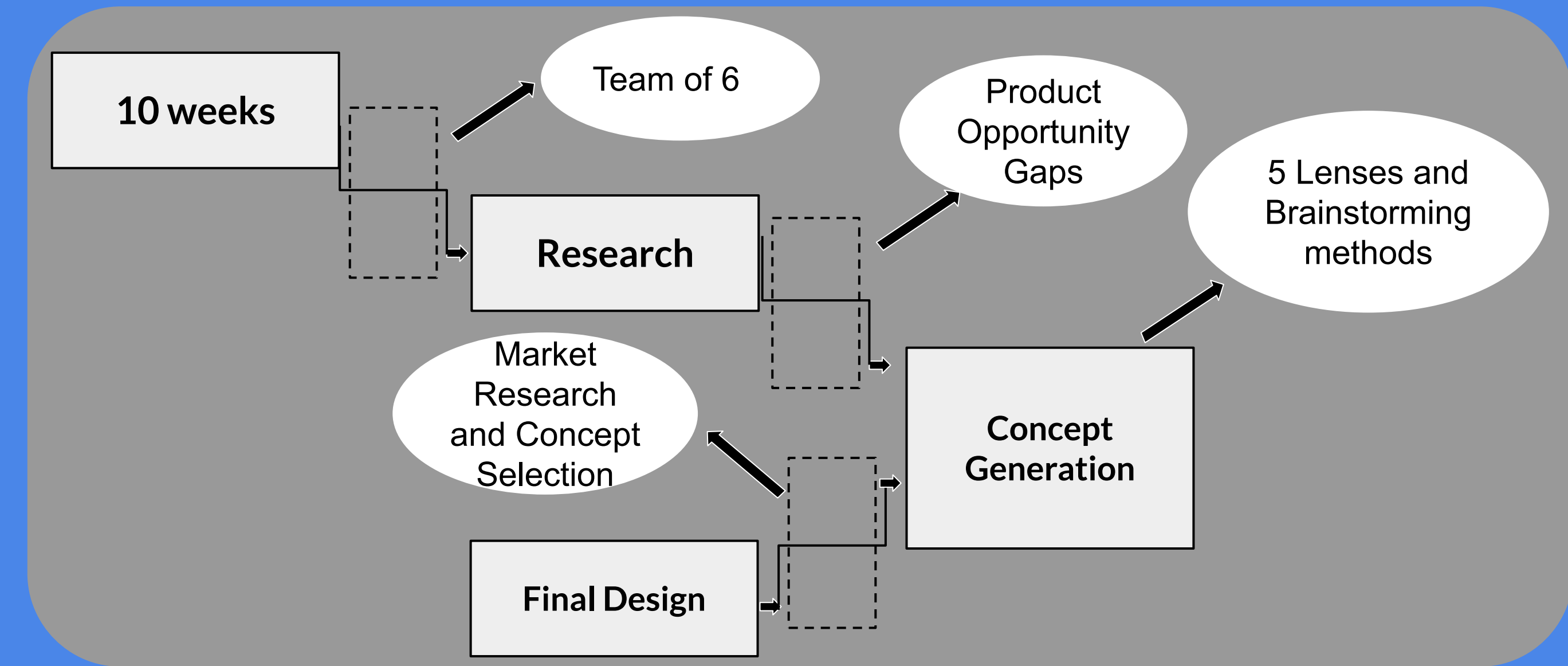
Designing a Bicycle Pannier using a Sustainable Product Design Methodology

Introduction

Our team of six design engineering students developed a product within the scope of improving graduate students' process of getting to campus in the morning. We identified potential gaps in the market or as we like to call them, product opportunity gaps. We developed our final chosen concept into the beetle bicycle pannier.

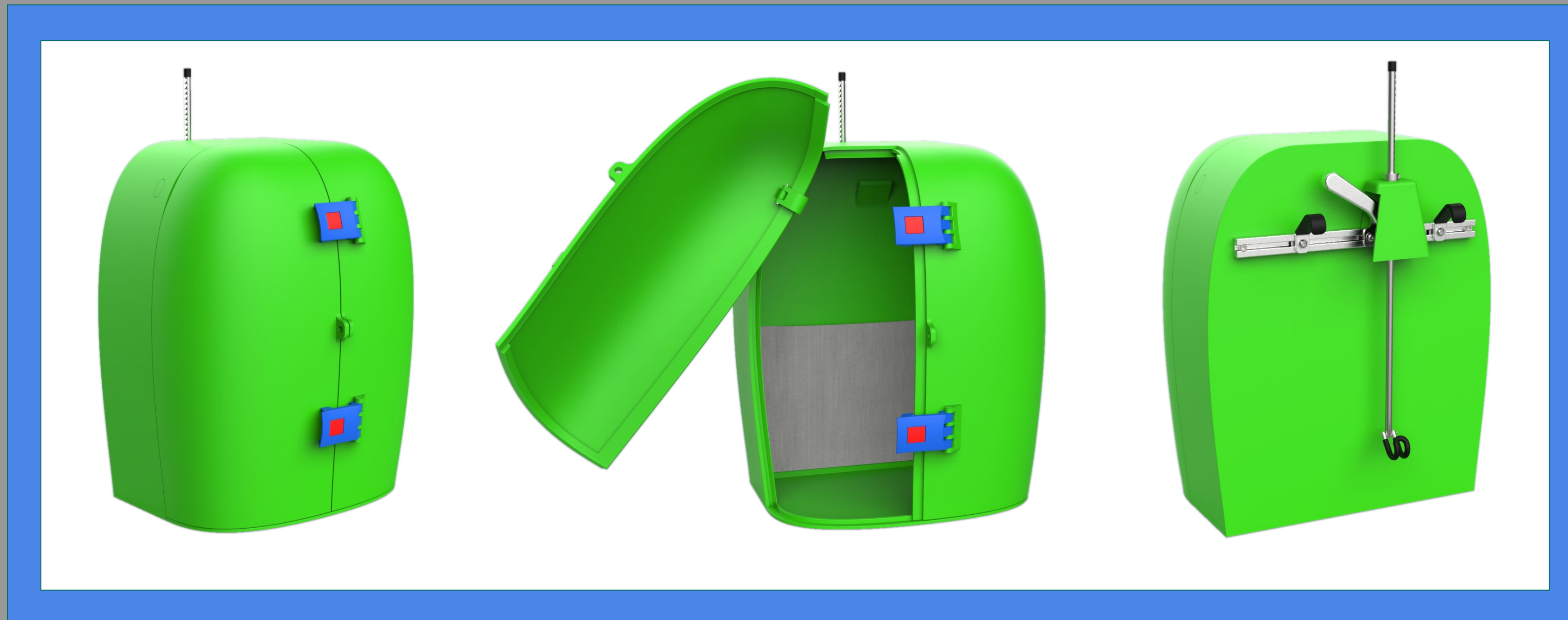
Methodology

The project was conducted in three phases, which were to research, generate, and design our final project. After identifying product opportunities we proceeded with concept generation through 5 different lenses and several different brainstorming methods to produce 66 different concepts. We narrowed down our concepts and brought them to a focus group for market analysis.



Opportunity Statement

There is an opportunity to **reduce the carbon footprint** and **ease parking frustrations** in commuting by creating a product that **improves ease, safety, and comfort** of human powered transportation, while maintaining **high aesthetic value** and a **focus on sustainable design**.



Beetle Bicycle Pannier

Design Features

- Waterproof
- Lockable
- Durable
- Adjustable and secure attachment to the bike
- Adjustments done with a tool
- Laptop Compartment
- Bio-inspired Design

Sustainable Attributes

- Sturdy long lasting material choices
- Recycled materials used when applicable
- Broken or worn pieces can be replaced
- Ships unassembled, smaller shipping footprint
- Product can be disassembled and fully recycled

Design Challenges

During the design of this product, a number of challenges and problems were encountered. These included securely attaching the pannier to a bicycle, making it adequately waterproof, and how to keep the pannier closed and locked

