Problem Analysis

Directions: **SAMPLE ANSWERS**

Use this template to help you analyze your design challenge and generate a “How might we...?” design question that captures the ultimate goal of your design.

1. **Problem Statement:** What is the specific problem or opportunity your team wants to address and how can solving this specific problem help to solve the bigger problem that is the theme of the challenge?

   Cars and other fossil-fuel-powered vehicles release CO2, which is a cause of climate change. On the other hand, biking does not release CO2. And biking is a great, healthy way for people to get around when they don't have to travel far. Our team would like to get more people to ride bikes to work and school in our city. We learned from our research that one reason people at our school don’t bike is because they are scared to ride on the fast busy road the school is on. Another reason is that it rains a lot in the spring and they don’t like getting wet. So the specific problem we would like to solve is to make biking safer, especially in wet conditions.

2. **What key impacts should your design have?** List the outcomes or actions you want to occur as a result of your design. (Hint: This is not what you want to make, but what your design will do.)

   Encourage more people to bike
   make biking safer
   keep bikers dry and comfortable
   make cars more aware of and careful toward bikes.
3. **What key variables does your design need to address?** Describe some of the contextual factors that are important to consider in your design, including whom it serves, where it needs to work, and other conditions. Incorporate things you learned from your research or talking to stakeholders.

   - People going to work and school
   - Our city
   - Rainy season
   - Busy road
   - Local traffic laws

4. **Create a design question:** Using the information above, phrase your challenge as a question that begins with, “How might we...?”.

   **Note:** Your question should give a sense for the context in which you are designing as well as the impact you want to have and what/whom it benefits. If it doesn’t, it may be too broad. Your question should also be somewhat open-ended to ensure you haven’t jumped to conclusions about what you are designing. If your question is very specific, it may be too narrow. Try a few variations. Then circle the one that you think is not too broad or too narrow, but just right for your design challenge.

   How might we...

   - How might we motivate more people to ride their bikes?

   How might we...

   - How might we get drivers to be more aware of and careful towards cyclists?

   How might we...

   - How might we make biking safer on busy, wet roads?