

Worksheet A: HELMET DESIGN PROJECT

Your group will be assigned one of the following problems (see next page) that deal with bicycle helmet design.

Your group has 30 minutes to brainstorm the problem and create a poster showing the results of your group work. Your group will have 2 minutes to present their poster to the class.

On side A of your poster, provide:

1. A statement of the problem your group was asked to solve.
2. A list of the needs that the helmet group you were assigned to has.
3. The design changes that must be made to a current helmet to meet the above needs.
4. The marketing techniques you will use to attract members of your helmet group to purchase your redesigned helmet.

On side B of your poster, provide:

1. A drawing of your newly re-designed helmet which points out the strengths of the design.

Helmet Design Problems

Task: Prepare a poster and two- minute presentation that explains why the design team feels that helmet design fits the application.

Group 1: People with long hair

People who have long hair (whether they are males or females) sometimes choose to wear their hair pulled back in ponytails so that it is off of their necks. The problem with this is that a ponytail can interfere with the way the helmet sits on their heads. What design change(s) might alleviate this problem?

Group 2: Bald people

People in this group include those who have lost their hair due to age or illness and those who choose to be bald. One problem facing people in this group is that the vents in the helmet cause them to get sun burned lines on their heads? What design change(s) could prevent this from happening?

Group 3: Children aged 5-7

There are two issues for younger children regarding bicycle helmets. The first is getting them to want to wear one. The second is making the helmet easy to put on and remove since young children may have more difficulty with fasteners than older ones.

Group 4: Teen-aged riders

The biggest issue for this group is how do you get teen-agers to wear helmets? Are there design changes that might make helmets more acceptable to this group? What marketing strategies might help in this regard?

Group 5: Bicycle commuters

The largest number of bicycle deaths occurs between the hours of 3 p.m. to 9 p.m. It appears that the commute home from work or school on a bicycle is especially dangerous at this time. What ways could you change the existing helmet to help make this commute safer?

Group 6: Bicycle motocross racers (BMX)

Think about the added dangers faced by people who participate in this sport. What are these dangers? How should the helmet be redesigned to add more protection?