Protective Eyewear Design Brainstorming Worksheet

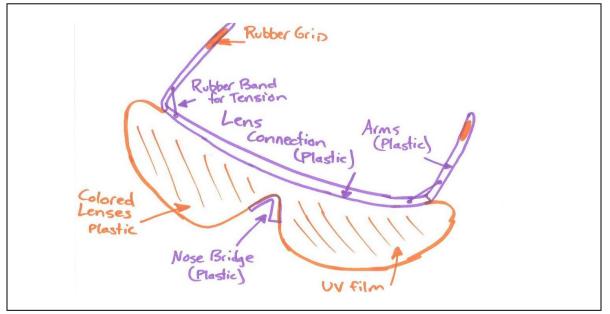
Activity or sport to design for: <u>mountain biking</u> Risks and hazards to eyes during this activity or sport:

- 1. Eyes watering from wind in eyes
- 2. Dirt and dust from trail
- 3. Small rocks and sand kicked up from wheels
- 4. Low branches and vegetation blocking the trail
- 5. Bugs and plant matter in air
- 6. UV rays from sun while riding on exposed ridges and open clearings
- 7. Sun shining in eyes, creating glare, making it hard to see
- 8. Loss of contrast in low-light settings (at dusk or in dense forest)
- 9. Rough, erratic movements cause glasses to fall off

Design features: (Also note the risk/hazards #s each feature addresses)

- 1. Full coverage lenses that are shaped to fit face contours (1,2,3,4,5)
- 2. Curved lens that wraps around to protect the eyes from the sides, as well (3,4)
- 3. UV protective film (6)
- 4. Colored/shaded, polarized lens (7)
- 5. Interchangeable lenses for use in different lighting conditions (7,8)
- 6. Light-weight so they are comfortable and less likely to fall off during jostling (9)
- 7. Spring action stems to provide clamping force on head (9)
- 8. Thin, ergonomic design to integrate with helmet and straps (9)
- 9. Lens made of scratch-resistant, shatter-proof plastic for durability and safety in a crash
- 10. No sharp points or edges, for comfort and protection in case of a crash

Draw a sketch of what your protective eyewear will look like. Label all parts and materials.





Example Answers