

# Protective Eyewear Design Brainstorming Worksheet



Activity or sport to design for: mountain biking

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

## Example Answers

**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.

