

Real life contexts examples

Instructions for Students:

Your team will work with one real-life scenario. Think carefully about:

- What are the main water safety risks in this situation?
- What materials might be available or limited?
- How could you adapt your filter design for this context?

1. Mountain Camping Trip

A family is camping in the mountains with only a nearby river as a water source.

- The water looks clear but may contain bacteria from animals.
- There are no stores or electricity.
- They only have access to natural materials and camping tools.

Design Focus: Lightweight, low-tech, use natural filters like sand or charcoal from the fire.

2. Flooded Village

A rural village has been hit by heavy rain and flooding.

- Drinking water is mixed with dirty floodwater.
- Wells may be contaminated.

- Some aid materials (bottles, cloth) are available, but resources are limited.

Design Focus: Removing particles and bacteria, filter large volumes quickly.

3. City Plumbing Failure

A city neighborhood has no clean tap water due to a plumbing failure.

- Water pressure is low or interrupted.
- Residents rely on stored or collected water.
- Access to household items like bottles, towels, and basic cleaning supplies.

Design Focus: Reliable daily use, reuse of household materials.

4. Desert Community

A community in a desert area has very limited water and high temperatures.

- Water is scarce and may come from brackish or salty sources.
- Very few natural materials, mostly rocks and sand.
- Solar energy is available.

Design Focus: Water conservation, multi-use filters, potential solar treatment.