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*Fire Hazard: Testing Combustibility Rates to Determine Shelter Material Cover*

Have you ever wondered where homeless people sleep at night? Many homeless people sleep out in the open without shelter. Phase 1 of this project is to determine the most fire resistant material to cover a portable homeless shelter. This project is considered chemistry because the testing involves combustion and combustion is a chemical reaction. The problem was to determine a shelter material that has the most fire resistance. Different shelter materials were tested by clipping them to a stand, applying a constant heat source, and recording the time it took for each one to combust. Because of the materials' make-up, the combustion times varied. Some of the material samples melted but did not combust. On average, the combustion time increased for natural fiber materials. Testing fire resistance is Phase 1 in the design of a portable homeless shelter. Water and wind resistance, durability, weight, and cost are future phases that need to be tested to complete the shelter. This project is using science to solve a much larger problem.