

Electricity for Everyone:

Addressing the Needs of the Homeless in King County



What. In 2017, King County households experienced 22,100 episodes of homelessness. The need for finding short- and long-term solutions is critical, as the number of people becoming homeless is greater than those able to find permanent housing in the area. Of those surveyed, 96% were experiencing homelessness for the first time. Additionally, the number of people experiencing homelessness in King County has grown immensely, from just 11,400 in 2011.

People become homeless for many reasons. Adverse life event like a health crisis, the loss of a job, or needing to escape domestic violence can quickly throw a person into homelessness. Systemic problems like unequal job opportunities, lack of affordable housing, and poor mental health and addiction treatment exacerbate the issue. Additionally, homelessness is not spread evenly across the racial makeup of King County. While only 6% of King County is Black or African American, this group makes up 29% of those who are homeless. White people are 66% of the population and 45% of the homeless population.

Those experiencing homelessness often live in cars, in tents, or in their own makeshift shelters. Without the conveniences afforded to those who are safe and secure in houses, they have to find alternate methods of fulfilling what we see as basic needs of the modern world: showering, charging phones, having heating or air-conditioning, or using an oven.



In this unit, we will be using profiles of people experiencing homelessness and account for how they might fulfill their modern electricity and energy needs during one day. Additionally, you will build and wire a model for a tiny home that is graded on criteria for comfort, feasibility, and cost-effectiveness.

Why. Science is a tool used to better understand the world around us. At its worst, science has been wielded for destructive purposes like killing people on massive scales. At its best, a democratic scientific process that listens to everyone's needs holds answers to improving everyone's lives. Most often today, science is used to study and solve problems for only *some* people, thereby keeping the benefits and power in the hands of a few. This project aims to broaden our perspective of how science can and should be used in conjunction with understanding of current social problems (like homelessness or climate change) to extend its benefits to all.

How. Throughout the unit, your understanding of electricity and energy will build upon itself. Here are the topics we will be covering:

- Static electricity
- Coulomb's Law
- Series and Parallel Circuits
- Ohm's Law: Voltage & Current
- Power: Electrical Load and Fuses
- Four Laws of Thermodynamics
- Energy Efficiency

	What I know or think I know	What I want to learn or have questions about
Homelessness		
Electricity & Energy		

Sources.

1. <https://www.seattle.gov/homelessness/the-roots-of-the-crisis>
2. https://www.seattletimes.com/seattle-news/homeless/whos-falling-into-homelessness-and-how-king-county-hopes-better-data-leads-to-better-help/?utm_source=twitter&utm_medium=social&utm_campaign=article_left_1.1