

Student Worksheet 2.1

Activity 2.1 The Entropy of Your Home

Think of the activities you undertake at home (your house, apartment, or dormitory). If you imagine your home as a system that serves to fulfill your needs and wants, what are the energy and material inputs and outputs of your home ; how have the inputs been transformed by the time they leave? What outputs still have a use? How does seasonality affect the flows through your home? Is there any recycling or reuse of materials before they flow out of your home? How do you dispose of the materials that leave your home?

By answering these questions, you will begin to understand the notion of entropy and the concept of a system. Keep track of all of the materials and energy that enter and leave your home for a week. For inputs, record your water use, gas use, electrical use, and all of your purchases (i.e., food, clothes, household products). You may need access to your utility meters or recent utility bills. If you live in a dormitory, you will need to devise other ways of measuring or estimating these variables. For outputs, consider your solid wastes, recyclables, waste water, and the temperature of your living space. Your instructor will provide you with additional information on just how precisely you need to measure these materials.

Keep track of your data in a table including input, use, reuse/recycle, output, method of disposal, and the physical state of the material in disposal. Indicate whether the entropy of the energy that enters your home has increased, decreased, or been unaffected by the time it leaves your home. Prepare a two- to three-page summary of your findings and include your answers to the questions listed below.

1. What are the environmental implications of your outputs? Where do they go for final disposal?
2. Do you have a sustainable supply of inputs?
3. How can you reduce your dependence on unsustainable inputs and wasteful outputs? What constraints do you face in reducing your use of unsustainable inputs and your production of wasteful outputs? What actions have you taken (or will you take)?