

# Energy Web Games Guide

## School as a System Web Game Home as a System Web Game

### **Purpose:**

To help students understand the interactions that affect energy use, energy costs, and indoor air quality.

### **Materials:**

Ball of Yarn

School or Home Hangtags

### **Background Information:**

A building is an interactive system consisting of the occupants, the mechanical systems, and the movement of heat, air, and moisture. All of these aspects relate to indoor air quality, the cost of energy, and environmental quality. These games help students understand the systemic nature of energy use and its impacts on the broader environment. The activity is an especially strong reinforcement tool for kinesthetic and visual learners.

### **Procedure:**

1. Hand out the role card hangtags and ask students to read the backs of their cards. Give students a chance to ask any questions they have about what is written on their cards.
2. Have students put on their hangtags and stand in a circle.
3. Hand the ball of yarn to one of the students. Explain that he/she should look around the circle and identify another component of a system that is related to his/hers.
4. The student should hold on to the end of the yarn, then pass the ball of yarn to the identified student, explaining how that part of the system is related. The next student repeats the process, holding onto the yarn and passing the ball to another student with a related component of the system.
5. Continue passing the yarn around until all students are holding onto the yarn. The students will have created a web made of yarn connecting all of them.
6. Choose one student to give a tug on the string. Explain that this tug represents a stress of some sort on that part of the system. For instance, the person wearing the Heating System tag might give a tug, and you would say, "There is a malfunction in our heating system. It is not operating efficiently."
7. Repeat this several times with different students tugging on the yarn. For each tug, describe a possible scenario for the component that is causing stress on the system.
8. Ask students to describe how the system is dependent on all of the components. Students should be able to explain that a change in one part of the system can affect all other parts of the system – sometimes in unexpected ways!