**Name:**

**Teacher’s Name:**

**Date:**

**Subject:**

**Activity 53: Home Energy Use**

Before starting activity 53, mark whether you agree (+) or disagree (—) with each statement below.

After completing the activity, mark whether you agree (+) or disagree (—) with each statement below.

|  |  |  |
| --- | --- | --- |
| **Statement** | **Before (Agree or Disagree)** | **After (Agree or Disagree)** |
| An object does not have to be moving to have potential energy. |  |  |
| Only living things are associated with energy. |  |  |
| Heat and temperature are the same. |  |  |
| When energy is used, it is gone forever. |  |  |
| The efficiency of transforming mechanical energy into thermal energy is much greater than the efficiency of transforming thermal energy into mechanical energy. |  |  |
| Metals are poor conductors of thermal energy and electricity. |  |  |
| Energy cannot be quantified. |  |  |
| Electricity generation means electricity is transformed from another energy type. |  |  |
| Chemical reactions can give off electrical energy. |  |  |
| Electrical energy can be transformed into light, sound, or thermal energy. |  |  |
| Solar energy is a nonrenewable energy source. |  |  |
| The refrigerator in a home uses more energy than the water heater. |  |  |
| All houses use the same amount of energy. |  |  |

**Procedure**:

1. In your group, brainstorm a list of typical household activities where you see energy in use.
2. Put your list in order, from the most to least energy used in a typical home during one year.
3. Look at the table on page 270 related to two homes that are similar in size but located in different parts of the country. Compare the data for Home A and Home B. For *each* home feature, decide which house you think consumes *less* energy.

**Revisit the table above and complete the *after* column.**

**Analysis Questions:**

1. How do the climates of the two home locations influence the energy used in the homes?
2. In the context of this activity, what does the term “energy efficient” mean? Explain, and give an example from this activity.
3. If the people who live in Homes A and B have similar lifestyles, which home do you think uses less energy in a year? Use data from the table to support your choice.
4. What could be done to reduce the energy needs of:
   1. Home A?
   2. Home B?
5. Reflection: What steps can you and your family take to reduce energy use in your home?

**New Vocabulary:**

**Energy** - The ability to cause objects to change, move, or do work.

**Trade-off** - An exchange of one thing in return for another. Giving up something that is a benefit or an advantage, in exchange for something that may be more desirable. Trade-offs always involve balancing benefits against risks.