How much IS that?

How can we think about how much energy is involved in some common activities?

1. The first column of the game board contains several activities that require different amounts of energy to do.

2. We can think about the amount of energy each activity requires by comparing them to some familiar things by doing the following:

   a. Place each *Big Mac* card in the first column face up next to the activity you think is a match.

   b. Repeat step "a" for the *Refrigerator* cards, then for the *Wood Burned* cards, and finally for the *Gasoline Burned* cards.

   c. When you're done, check your answers using the *Top Secret Answer Key* at the station. No peeking until you finish!

3. How close were your guesses to the real answers? What did you find most surprising or interesting?

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These are rough comparisons. However, they are sufficient to make the intended point, which is to help you understand the amount of energy involved in doing certain things. Some assumptions and estimates made in calculating these values are described below.

- The calculations assume 100% efficiency when energy changes forms and is moved from place to place. This is rarely the case. Much of the energy of an original energy source is "lost" as non-useful heat. For example, only about 30% of the original fossil fuel energy used at a power plant becomes electricity.
- The amount of energy consumed by a device depends on the particular model and how it is used. Some calculations are based on a particular model, while others are based on an "average" of several similar devices.
- Numbers were rounded.
- Food is the energy source for humans. Food's energy is measured in Calories. We can compare the amount of energy in a Calorie to the amount of energy in energy sources like gasoline and wood. However, our bodies cannot use the energy in these items. They are not food for us.

Nutrition information on which the Big Mac cards are based comes from: http://nutrition.mcdonalds.com/getnutrition/nutritionfacts.pdf

Please turn card back over when finished