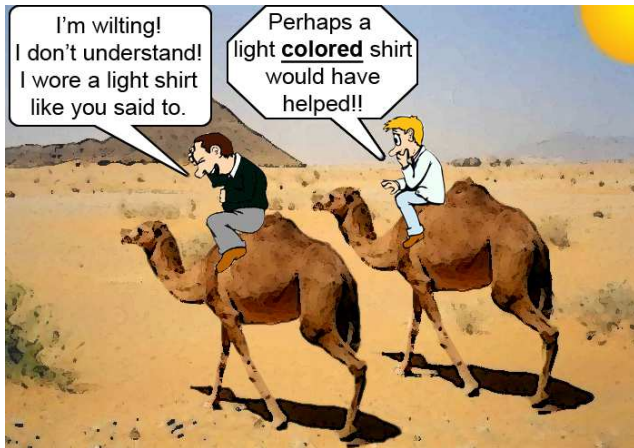


Energy Transformations

It's a hot day. The sun is beating down. You are wearing a white T-shirt. Your friend is wearing a black T-shirt. You are comfortable. Your friend is not. The white shirt reflects the sunlight. The black shirt absorbs it. When the light is absorbed, the black shirt doesn't shine, but the energy isn't lost either. It is transformed into heat. The world runs on energy transformations.

You gas up the car, or you eat a meal. Fuels and food are chemicals that are used for energy. Food energy is used to move muscles. Fuels are used to move cars and other machines. When fuels and food are used, they also release heat. These are examples of transforming chemical energy.

There are many types of energy transformations. Appliances transform electrical energy. A light bulb transforms electricity to light. A toaster transforms electricity to heat. A radio transforms electricity and radio waves to sound. Thermal energy, or heat, can come from or transform to other types of energy. Hot metals glow giving off light. Burning fuels (chemical energy) give off heat. Electric stoves give off heat. Hot water produces steam that can run a steam engine. Thermal energy always flows from higher temperature to lower temperature. Frequently when energy appears to be lost, it really turns into heat and spreads through the environment, moving from where it is warmer to where it is cooler.



Answer the questions below based on the reading above and on your knowledge of physics.

1. Why is it more comfortable to wear light colors on a hot, sunny day? _____

2. It's a cold, wintery day. You are driving your car with the heat on while listening to the radio. Describe some of the energy transformations that occur. _____

3. You drop your smart-phone. It lands with a thud. Was energy conserved? What energy transformations occurred? _____

4. In terms of energy transformations, how are compact fluorescent bulbs more efficient than standard incandescent bulbs? _____
