Link: http://www.glencoe.com/sites/common\_assets/science/virtual\_labs/E04/E04.html

**Introduction**

*As you read the introduction, fill in the blanks below.*

Energy can be classified into six general forms: chemical, mechanical, thermal, light, electrical, and nuclear.

* Chemical energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy stored in chemical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, for instance, has a large amount of stored chemical energy. The chemical energy in gasoline is used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a \_\_\_\_\_\_\_\_\_\_.
* Mechanical energy is the energy acquired or released by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ object. Mechanical energy propels a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ after it has been struck by a bat.
* Thermal energy is associated with the motion of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It is a type of energy that usually results from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ caused by molecules rubbing against one another. Thermal energy is produced when you rub your hands together very rapidly.
* Light energy is a form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_energy. Each \_\_\_\_\_\_\_\_\_\_\_\_of light represents a different \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of electromagnetic energy. Electromagnetic energy also includes x-rays, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ waves, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Electrical energy is associated with the movement of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Devices such as televisions, computers and CD players are operated by this form of energy.
* Nuclear energy is energy stored inside the\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of an atom. When a nucleus splits, nuclear energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (fission). Nuclear energy is also released when nuclei of atoms fuse together (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).

Any one of the six forms of energy can be converted into another form. For example, plants capture light energy from the sun and convert it into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy during the process of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Often a series of energy conversions is needed to do a job. For example, wind turns a wind turbine to produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_energy, which activates an electrical generator to produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for a radio.

**Procedures**

1. Choose a sequence from the Event Sequence menu.
2. Click the first event picture in the sequence and read its description.
3. Decide what type of energy is represented by the event picture and description, and choose it from the first Energy menu.
4. Repeat the above steps for the two remaining pictures.
5. Click the Check button to check your conversion sequence. (If any of the boxes are outlined in yellow, that means the answer is not correct.)
6. When you have the correct answers, record your findings in the Data Table.
7. Repeat the above steps for the remaining event sequences. Click the Reset button to see a new set of sequences.
8. Complete the questions at the end of this handout.

**Data**

*Fill in the data table after your complete each sequence of events.*

|  |  |  |  |
| --- | --- | --- | --- |
| Sequence Number | Step 1 Energy Type | Step 2 Energy Type | Step 3 Energy Type |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**Questions**

1. Describe the energy conversions that take place when a flashlight is turned on.
2. Describe the energy conversions that take place when you vigorously rub your hands together.
3. Water is boiled. The resulting stream is blown against huge turbine blades. The turbine blades spin in a magnetic field, producing electricity. The electricity is used to light a lamp. Describe the energy conversions involved.
4. Describe how energy is transferred in one of the sequences.
5. What happens if the sequence isn't completed?