Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_Period: \_\_\_\_

**Energy Forms and Transformations**

1. Write a brief definition, make a sketch or diagram, and give an example of each of the following energy forms:

|  |  |  |  |
| --- | --- | --- | --- |
| Type of Energy | Definition | Example | Sketch or Diagram |
| Thermal |  |  |  |
| Electrical |  |  |  |
| Nuclear |  |  |  |
| Chemical |  |  |  |
| Electromagnetic |  |  |  |
| Mechanical |  |  |  |

2. Below are examples of objects or processes that convert energy from one form to another. Identify the type of energy transformation by filling in the blanks.

Example: **light bulb** transforms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.

Example: **photosynthesis** transforms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.

3. With your partner or in your group, come up with 5 ***different*** examples of objects or processes that transform energy. Determine the type of energy going in and the type of energy being produced.

|  |  |  |
| --- | --- | --- |
| **Example** | **Type of energy put in** | **Type of energy coming out** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. The different types of energy may seem to have little in common. However, the broad definition of all of these forms of energy is the ability to…
2. Identify the form of energy described in each of the following:
3. Energy stored within the nucleus of an atom:
4. Energy stored in the bonds between atoms:
5. Energy possessed by an object due to motion/vibration of atoms or molecules:
6. Each object or process listed below is capable of transforming one form of energy into another. For each object, fill in the blanks with the type of energy the object/process starts with, and the type(s) of energy it produces. **Energy types: Electromagnetic, Thermal, Chemical, Nuclear, Electric, Mechanical**





**Toaster:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Battery:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Gasoline in car:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Sun:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Fire fly:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Electric Fan:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**Cellular respiration:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Wind turbine:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Light bulb:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. In all of the energy transformations above, not ***all*** of the energy going into the object or process is recovered. Explain why and give an example.

1. When a rock is dropped, the rock possesses mechanical energy during its entire fall. But you could still say that as it falls, the rock’s mechanical energy transforms from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mechanical energy into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mechanical energy.