|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Releasing Energy, Absorbing Energy** | **The Law of Conservation of Energy** |  | **The Process of Heating** | **Energy Efficiency** |
| Energy never disappears, it is only transformed into another form of energy. | The total amount of energy in a system is the same before and after a transformation. | **Fact #1** | Only about 40% of thermal energy can be converted into useful mechanical energy. | Only 26% of gasoline is turned into motion energy. |
| Oil was formed over millions of years from decayed plants and animals. | Energy can be transferred or transformed, but cannot be lost or destroyed. | **Fact #2** | Thermal energy is dissipated during a transformation. | Only 3% of the energy actually moves the car. |
| When oil is burned in a furnace, the chemical potential energy is released into the air and becomes thermal energy. | Sometimes the missing energy from a process is called lost energy. | **Fact #3** | Thermal energy is almost always released during a transformation. | No energy transformation is 100% efficient. |
| Following energy as it is transferred and transformed will reveal a chain of interaction in which energy is absorbed and released. | The Law of Conservation of Energy doesn’t say which kind of energy must be present before and after an event, just that the total energy doesn’t change. | **Fact #4** | Thermal energy is the hardest to transform. | 74% of gasoline is turned into heat energy. |
| The energy in plants originally came from sunlight, which the plant transformed into chemical energy through the process of photosynthesis. | The LOC means the total amount of energy before something happens must be equal to the amount afterward. | **Fact #5** | The desirable energy is usually light, but thermal energy comes out instead. |  |