

## Unit 4 Lesson 1

1. Energy ~ the ability to cause change (makes things go, run, or happen)
2. Kinetic Energy (KE) ~ energy of motion
3. Potential Energy (PE) ~ energy of position or condition (a.k.a. stored energy)
4. Mechanical Energy ~ KE + PE
5. Light ~ energy of charged particles; travels in waves
6. Sound ~ energy in the form of vibrations that can be heard; travels in waves
7. Chemical Energy ~ energy stored in the bonds of atoms and molecules of a substance
8. Thermal Energy ~ energy of moving particles
9. Nuclear Energy ~ energy that holds protons and neutrons inside an atom's nucleus
10. Electrical Energy ~ energy of moving electrons

## Unit 4 Lesson 2

1. Law of Conservation of Energy ~ a law that states that energy cannot be created or destroyed but transferred into different forms; the amount of energy in the universe is constant

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When you eat breakfast in the morning, the \_\_\_\_\_ energy in the food is \_\_\_\_\_ to your body. When you walk to the bus, the chemical energy transfers to \_\_\_\_\_ energy. As you climb the stairs on the bus some of your kinetic energy is being transferred into \_\_\_\_\_ energy (because you are higher off the ground). Your feet rubbing against the ground (friction) transfers kinetic energy into \_\_\_\_\_ energy.

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Sally picked up her guitar which gave it \_\_\_\_\_ energy. As she began to pluck the string, some of her \_\_\_\_\_ energy transferred to the string as \_\_\_\_\_ energy (when it is pulled back). As she lets the string go, the \_\_\_\_\_ energy of the moving string transferred into \_\_\_\_\_ energy and creates a beautiful song.

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The player eats lunch and the chemical energy from his food is transferred to him. The chemical energy stored in his body is transferred into kinetic energy when he runs the bases. That kinetic energy is then transferred into thermal energy due to friction as he slides on the dirt into home plate. The audience transfers some of their chemical energy into sound energy when they cheer for the Braves. Chemical energy from food stored in the fan's bodies is also transferred into kinetic energy when they stand up and clap. The law of conservation of energy is present in this situation because energy is not created or destroyed only transferred into different forms or to different objects.

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This picture demonstrates the law of conservation of energy because energy is not created or destroyed, but transferred from one form or object to another. The player transferred some of the stored potential energy inside his body to kinetic energy when he ran around the bases. When he slid, his kinetic energy transferred to thermal energy because there is friction between him and the ground. Some of his kinetic energy also transferred to the dirt because it will begin moving. The ball will transfer its kinetic energy into sound when it hits the catcher's glove and makes a "thud". The catcher will transfer some of his kinetic energy to his glove when he moves it to tag the player.