

Lesson 1 Page 166 #1-6, 8&9

- 1) Kinetic energy is the energy due to motion; potential energy is stored energy due to the interactions between objects or particles.
- 2) 2) Work is the transfer of energy that occurs when a force is applied over a distance
- 3) A. elastic potential energy
- 4) You could increase the GPE between yourself and Earth by climbing stairs because you are moving higher.
- 5) The KE decreases as the bike slows down.
- 6) Both SE and RE travel in waves. Light waves carry RE. Sound waves carry SE. Light waves travel faster than sound waves.
- 8) CPE is stored in the chemical bonds between molecule below.
- 9) Pushing on a car will not always change the car's ME. To change the car's KE, the car must move.

Lesson 2 Page 174 #1-5 &7

- 1) Friction make the bike stop rolling. Friction made the machine less efficient.
- 2) The law of conservation of energy states that energy cannot be created or destroyed.
- 3) CPE is transformed into RE and TE.
- 4) KE is transformed into TE.
- 5) B. EE to TE
- 7) toaster- TE mixer- ME, dryer- TE & ME

Lesson 3 Page 185 #1-4 & 7

- 1) Fossils fuels come from plant or ocean organisms.
- 2) Fossil fuels come from long-dead organisms. Biomass comes from recently dead organisms. They are both burned and released carbon dioxide to the environment.
- 3) Conserving energy makes nonrenewable energy resources last longer.
- 4) D. Solar energy
- 7) We are using fossil fuels faster than they are forming.

Page 189 1-11

- 1) EE
- 2) KE
- 3) Work
- 4) A nonrenewable energy resource
- 5) NE
- 6) PE
- 7) KE
- 8) TE
- 9) RE
- 10) Renewable energy resource
- 11) Fossil fuels

Page 190 #1-10

- 1) B. its mass and speed
- 2) A. the object's height and weight
- 3) A. at its highest point
- 4) C. RE to EE
- 5) B. Energy can never be created or destroyed
- 6) C. petroleum

- 7) D. You stand at the top of the hill.
- 8) A. burning coal
- 9) A. geothermal energy
- 10) B. it formed from the remains of plants.

Page 191 #11,12,15, 16, & 17

- 11) Work is done on the nail. A force is applied to move the nail over a distance.
- 12) A toaster transforms EE into TE. A fan transforms EE into KE and wastes TE.
 - 15) Friction in the skateboard's wheels transforms KE into TE
 - 16) The law of conservation of energy states that energy cannot be created or destroyed. Conserving energy means reducing the rate at which we transform energy into forms that are difficult or impossible to use.
 - 17) Harold has his order wrong. His examples shows the transformation of EPE into KE.

Page 192 #1-10

- 1) D. work
- 2) A. 1 & 5
- 3) C. 3
- 4) D. truck 2
- 5) C. solar
- 6) A. coal
- 7) C. friction
- 8) A. the box
- 9) A. It cannot be created or destroyed.
- 10) A. animal and plant material