




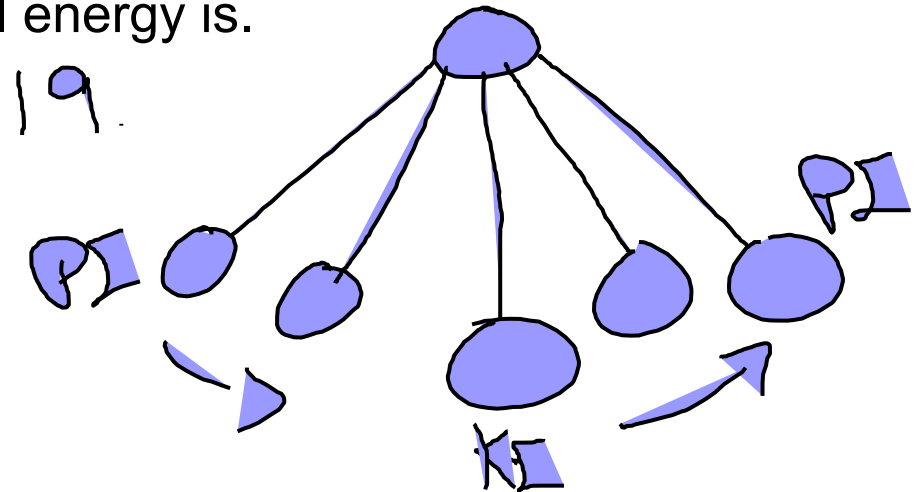
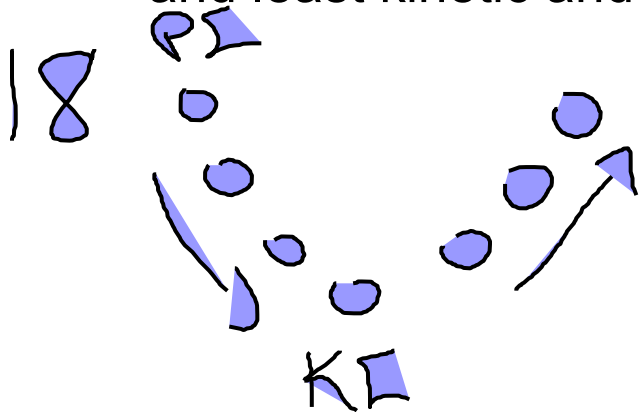
# Energy Study Guide Answers

- 
1. What type of energy is generated on the surface of the sun? *Nuclear Energy*
  2. What type of energy is in moving particles of matter? *Mechanical Energy*
  3. What type of energy is in green plants? *Chemical Energy*
  4. What kind of energy is released when wood burns? *Chemical Energy*
  5. What is the law of conservation of energy?  
*Energy cannot be created or destroyed but can be converted from one form to another*
  6. Explain how heat transfers from one object to another. *From warmer to cooler objects*

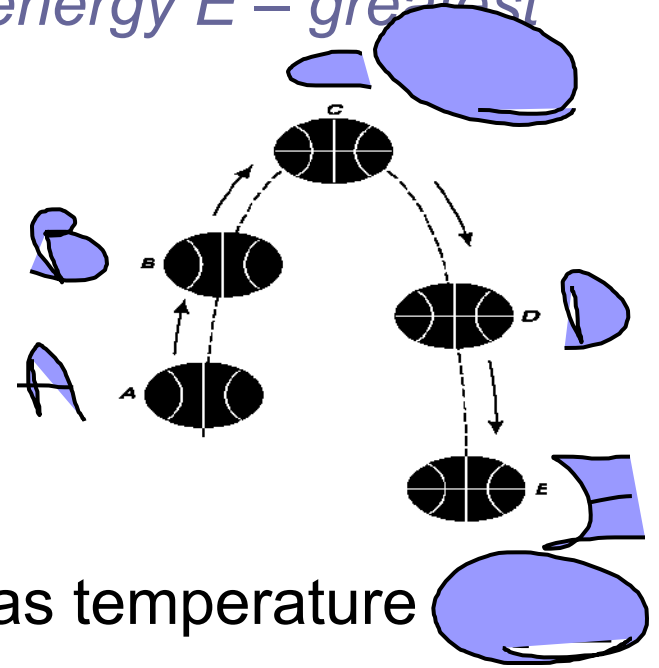
- 
7. Where is the energy of nuclear energy stored?  
*In the nucleus of atoms*
  8. Give an example of heat transfer by convection. *A hot wood stove heats an entire room*
  9. What type of energy transfer is taking place when boiling water in a pan? *Water is heated at the bottom of a pan and then rises where it is cooled off and then sinks again. This process creates convection currents.*
  10. What form of energy is associated with motion? *Mechanical Energy*

- 
11. If you have two beakers of water, one filled with 25 milliliters of water and the another filled with 75 milliliters of water, and both beakers are left to boil on a stove for 5 minutes, which one will have the highest temperature at the end of the 5 minutes. *The one with 25ml will have the highest temperature because the smaller amount will be able to heat up faster.*
  12. What form of energy would be associated with pulling a bucket out of the well? *Mechanical Energy*
  13. What type of energy transformations are occurring when a car is burning gasoline? *Chemical energy to mechanical energy*
  14. Explain how the end of a spoon sticking out of a cup of hot water will eventually become hot to the touch. *The heat from the hot water is conducted to the spoon handle*


15. If you place a pitcher of iced tea and a pitcher of hot cocoa in an insulated box what will happen to the two liquids? *The hot cocoa will lose heat and the ice tea will gain heat.*
16. When water boils in a pan on a hot burner, how does the heat get to the water? *Conduction of heat through the pan*
17. Explain how water behind a dam becomes electricity—what are the energy changes? *Mechanical energy is changed to Electrical Energy*
18. Draw a picture of an object gaining kinetic energy and losing potential energy.
19. Draw a pendulum. Label the picture to show where the greatest and least kinetic and potential energy is.



20. Draw a ball bouncing to show the greatest potential energy, least potential energy, the greatest kinetic energy, and the least kinetic energy. *C – greatest potential energy and least kinetic energy E – greatest kinetic and least potential*



21. What type of energy will increase as temperature increases? *Thermal energy*
22. A kite stuck in a tree is an example of what kind of energy? *Potential energy*
23. What is the outcome of every energy transformation besides heat? *Work is done*

- 
24. An airplane flying around in the air has what kind of energy? *Potential and kinetic energy*
  25. Describe convection and give an example. *The Sun. Hot gases rise from the interior of the sun. As they near the surface, they begin to cool. Cooler gases sink, forming loops of gas that move energy toward the sun's surface.*
  26. What is combustion? *Process of burning a fuel*
  27. Heat is the movement of thermal energy from a warmer substance to a cooler substance. What is a testable hypothesis for this statement? *If heat is transferred, one material will decrease in temperature, and another material will increase in temperature.*
  28. Energy that holds things together is Chemical Energy.