

Energy Study Guide

Answer in complete sentences and with explanations. NO SHORT ANSWERS!

1. What type of energy is generated on the surface of the sun?
2. What type of energy is in moving particles of matter?
3. What type of energy is in green plants?
4. What kind of energy is released when wood burns?
5. What is the law of conservation of energy?
6. Explain how heat transfers from one object to another.
7. Where is nuclear energy stored?
8. Give an example of heat transfer by convection.
9. What type of energy transfer is taking place when boiling water in a pan?
10. What form of energy is associated with motion?
11. If you have two beakers of water, one filled with 25 milliliters of water and another filled with 75 milliliters of water. Both beakers are left to boil on a stove for 5 minutes. Which one will have the highest temperature after 5 minutes? Why?
12. What type of energy would be associated with pulling a bucket out of the well?

13. What types of energy transformations are occurring when a car is burning gasoline?
14. Explain how the end of a spoon sticking out of a cup of hot water will eventually become hot to the touch.
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?
16. When water is heated in a pan on a hot burner, how does the heat get to the water?
17. Explain how the energy of water behind a dam becomes electricity—what are the energy changes?
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 being thrown up in the air and come back down again. Label the greatest and least potential energy and greatest and least kinetic energy.
21. What type of energy will increase as temperature increases?
22. A kite stuck in a tree is an example of what kind of energy?
23. What is the outcome of every energy transformation besides heat?
24. What kind of energy does an airplane flying in the air have?
25. Describe convection and give an example.
26. What is combustion?

27. Heat is the movement of thermal energy from a warmer substance to a cooler substance. What is a testable hypothesis for this statement?