**Energetic Connections Study Guide**

1. Explain why you feel cold when you go outside on a winter day.
2. What causes the liquid line in a thermometer to go down?
3. What causes molecules to speed up and spread apart?
4. What does the law of conservation of mass state?
5. What is convection? Give a real life example.
6. Sitting next to a campfire and feeling heat on your face is an example of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. What is chemical potential energy?
8. When we mixed vinegar and baking soda in a film canister, the canister became cold. The change in temperature is an example of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ change. It is also evidence that an \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurred.
9. Why would a pendulum swinging be a better example of an energy transformation than a ball?
10. Potholes in roads are created by molecules \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
11. Explain why the paper clips fell off the wire in order from 1, 2, and 3.
12. Heat energy always transfers from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
13. Give an example of kinetic energy.
14. Explain why the steel ball made a bigger dent in the sand tray than the wooden ball.
15. What is the difference between mass and weight?
16. What is a phase change? Give two examples of different phase changes.
17. Energy cannot be created or destroyed. Why does a top stop spinning?
18. What is a variable? Why are variables important to scientific experiments?
19. A ball dropped from a higher height has \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ potential energy than a ball dropped from a lower height. Why?
20. Thermal energy is a form of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ energy.