Unit 1 Study Guide **Name: _____**

1. **List 7 types of energy.**

2. **Explain the Law of Conservation of Energy.**

3. **Explain the difference between potential energy and kinetic energy.**

4. **Explain how energy transforms from one form to another. Give an example.**

5. **Explain thermal equilibrium, including which direction heat will flow.**

6. **Explain how heat is transferred through conduction.**

7. **Explain how heat is transferred through convection.**

8. **Explain how heat is transferred through radiation.**

9. **Explain two things that affect gravitational force.**

10. **Explain how you know that magnetic fields exist between objects that are not in contact with each other.**

11. **How many poles does a bar magnet have?**

12. **Explain what happens when like poles of a bar magnet are near each other and what happens when unlike poles of a bar magnet are near each other.**

13. **Where is the force of a magnet the strongest?**

14. **Explain what happens when you bring like electrical charges near each other and unlike electrical charges near each other.**

15. **What is static electricity?**

16. **What is the charge of an object that loses electrons? What is the charge of an object that gains electrons?**

17. **Draw a picture of a balloon that is electrically neutral and one that is positively charged. How are they different?**

18. **Draw a picture of a balloon that is electrically positive and one that is electrically negative. What will happen when you bring them near each other?**

19. Explain what will happen if you bring two objects with static electricity near each other.

20. Explain how electrical charges are transferred through induction.

21. Explain how electrical charges are transferred through conduction

22. Explain how electrical charges are transferred through friction.

23. Explain the difference between an electrical conductor and an insulator.

24. What is the difference between permanent magnets and temporary magnets?

25. How can you turn an iron nail into an electromagnet?

26. Explain why an electromagnet is a temporary magnet.

27. Explain how to increase the force of an electromagnet.