10. What process describes a liquid changing into a gas?
_____
11. What process describes a gas changing into a liquid?
_____
12. Explain the difference between the molecules of a solid, liquid, or gas. Think about density (how closely the molecules are together) and movement.
_____
_____
_____
13. Law of Conservation of Mass states that if I have an ice cube that has a mass of 5 grams, when it melts, I will have a liquid that has a mass of _____ grams. Another example: If you have 100 grams of Legos and decide to make a robot using all of them, then the robot will have a mass of _____ grams.

PHYSICAL AND CHEMICAL CHANGES

14. A compound is and example of a _____ change. A mixture is an example of a _____ change.

15. In a chemical change, a _____ substance is created.

16. Identify whether these are chemical or physical changes. **You may write a P or C.**
Cutting a piece of paper _____ Burning a piece of paper _____
Melting an ice cube _____ Baking a cake _____
Rusting a bike chain _____ Melting cheese on a hamburger ____
17. I find some chips of gold in a bucket of sand. How can I separate the gold? Is this a mixture or compound? _____
_____
_____

ELECTRICITY: STATIC ELECTRICITY

18. An electric charge is caused by a buildup of
_____
19. What is the difference between static electricity and current electricity?
_____
_____
20. Opposite charges will _____ while like charges will _____.
21. Put a check beside the examples of static electricity.
Christmas lights on a tree _____Balloon making hair rise _____
Shock when you touch a doorknob _____ Lightning _____

Electricity: Safety Rules

22. Why should you be careful when you touch an exposed wire? Explain.
_____
_____

23. Mary is running late for school. She thinks she can save time if she blow dries her hair while she is getting a bath. Is this a wise decision? Why or why not? _____
_____
_____

24. John and Bill are practicing basketball when it suddenly begins to rain and thunder. John gets under a tall tree while Bill gets into a car. Which one made the best decision? Why? _____
_____
_____
_____
_____

Electricity: Conductors and Insulators

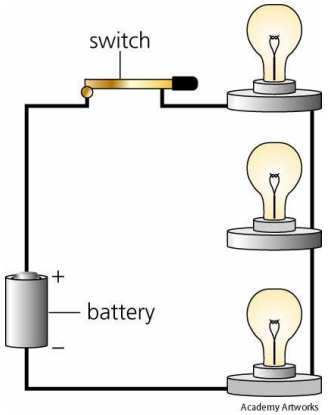
25. Which of the following is made from a conductor?
a. coke can c. wooden pencil
b. rubber eraser d. paper plate

26. Sally makes an electric circuit with a wire, a switch, a bulb, and a battery. When the switch is closed, the bulb glows. She wants to remove the switch and replace it with another material. Which material could she put in its place so the bulb will light?
a. rubber band c. cardboard strip
b. aluminum foil d. wooden toothpicks

27. Which of the following is the BEST insulator?
a. copper wire c. plastic block
b. iron nail d. steel paper clip

Electricity: Circuits

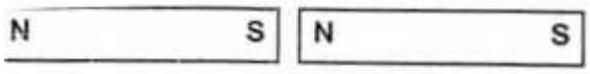
28. Name the two types of circuits.
a. _____ b. _____
29. Which type of circuit is used the most in homes? _____
30. Explain why this type is used (from question 29)
_____
_____
31. What type of circuit is in the diagram?
_____
_____



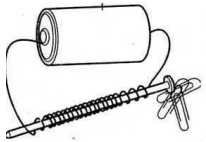
32. What is the purpose of the battery?
_____
_____
33. What is the purpose of the switch?
_____
_____
34. How can you tell if the switch is open?
_____
_____

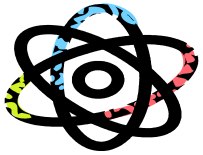
Magnetism

35. Look at the picture. Will these magnets repel or attract? How do you know?



_____
_____
36. How is an electromagnet like a bar magnet?
a. They are both made of wire b. They both need electricity to work.
c. They both have a N and S pole. d. They are both permanent magnets.
37. Which phrase best describes an electromagnet?
a. A bar of iron and a length of wire b. A coil of wire
b. Pieces of iron mixed with pieces of wire d. An iron core with a current-carrying wire coiled around it
38. Circle the picture of an electromagnet.





Benchmark 2 Study Guide

CHEMISTRY: ATOMIC STRUCTURE

1. Name three subatomic particles and give their charges:
a. _____
b. _____
c. _____

2. Put the following terms in order from largest to smallest:

Sugar molecule, tree, leaf, hydrogen atom, limb

_____

3. What particles are in the nucleus of an atom? _____
_____

4. How many neutrons does an atom of Boron have? Atomic number = 5 Atomic mass = 10.811 _____

5. If the Atomic number is 11 for Sodium, we know that it has _____ Protons and _____.

Chemistry: States of Matter

6. Name the four states of matter.
a. _____ c. _____
b. _____ d. _____
7. Think about a popsicle. What causes it to change from one state of matter to another? _____
_____
8. What process describes a solid changing into a liquid?
_____
9. What process describes a liquid changing into a solid?
_____