



### Static Electricity Questions

1. The difference between static electricity and current electricity is that current electricity moves and static electricity \_\_\_\_\_
2. We will be trying the balloon experiment in class. If a balloon is rubbed in your hair, why will it then stick to the wall? \_\_\_\_\_  
\_\_\_\_\_
3. Explain what causes static electricity to jump from your hand to a metal doorknob.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Explain what causes lightning. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Gilbert and other scientists in their time thought that \_\_\_\_\_  
Actually created an electric charge.
6. In 1747, \_\_\_\_\_ in America and  
\_\_\_\_\_ in England both  
reached the same conclusion. They were noticing that there was some kind of  
electrical 'fluid' –which was actually atoms and electrons.
7. Franklin defined the fluid as \_\_\_\_\_ and the  
lack of fluid \_\_\_\_\_.
8. What did Franklin believe that is opposite of what we know is true today? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
9. What is created when electrons move among atoms of matter? \_\_\_\_\_  
\_\_\_\_\_
10. A single \_\_\_\_\_ contains more than  
10,000,000,000,000,000,000,000 (1x10<sup>22</sup>) electrons.
11. The measurement of how well something conducts electricity is called its  
\_\_\_\_\_
12. What three things does resistance in wire depend on? \_\_\_\_\_,  
\_\_\_\_\_, \_\_\_\_\_
13. The lower the \_\_\_\_\_ of the wire, the better it conducts.
14. What causes the wire in a hair dryer to get hot? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
15. Something that conducts electricity poorly is called an \_\_\_\_\_  
What is an example of the answer to #15? \_\_\_\_\_

*Over*

**Bonus question:** Check some online or book resources to answer the following question. This one is optional!

16. Explain in 3 or 4 sentences how a motor works.

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Students, Please do not look at the answers until you have attempted each question.

Thank you! ☺

*Answers: 1) stays in one place 2) The balloon collects electrons from your hair, so it becomes negatively charged. The wall is positively charged, so they attract each other 3) If you walk across a carpet shuffling your feet and touching the doorknob—your feet picked up additional electrons which spread over your body. When you touch the doorknob (+ charged), the electricity jumps across the gap just before you touch the metal doorknob. 4) Clouds become negatively charged as ice crystals inside the clouds rub up against each other. On the ground, the positive charge increases. The clouds get so highly charged that the electrons jump from the ground to the cloud or from the cloud to another cloud. This huge spark of static electricity in the sky is lightning. 5) friction 6) Benjamin Franklin and William Watson 7) positive, negative 8) Franklin thought the direction of flow was from positive to negative. Today we know that the direction of flow of electricity is from negative to positive. 9) current of electricity 10) copper penny 11) resistance 12) how thick, how long, what it's made of 13) resistance 14) It has a coiled wire, high in resistance. Since resistance causes friction and friction causes heat, the hair dryer having the wire that is high in resistance causes heat 15) insulator, rubber 16) An electric motor works through electromagnetism. It has a coiled up wire that sits between the north and south poles of a magnet. When current flows through the coiled circuit, another magnetic field is produced. The north pole of the fixed magnet attracts the south pole of the coiled wire. The two north poles push away or repulse each other. The motor is set up in a way that attraction and repulsion spins the center section with the coiled wire.*