

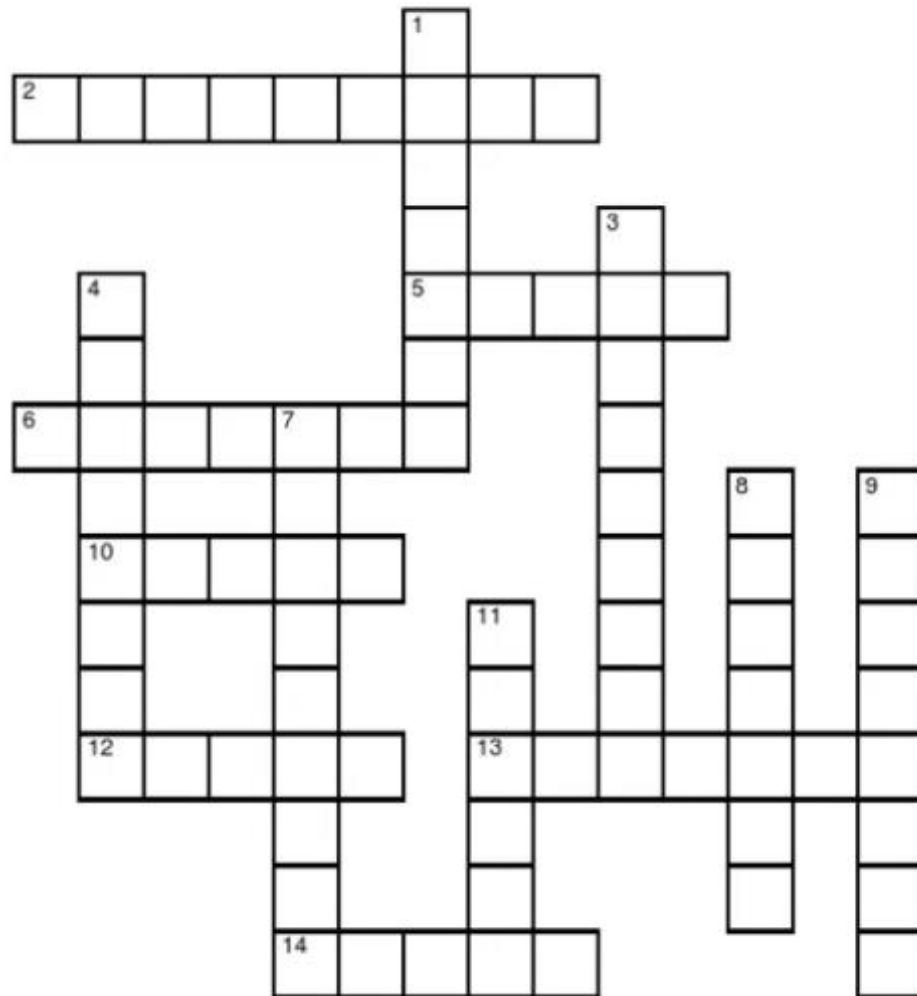
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## Static Electricity Worksheet

### Static Electricity



#### Across

- 2 A lighting strike is an example of a \_\_\_\_\_. (9)
- 5 The name given to the way in which electrons go around the nucleus of atoms. (5)
- 6 The part of an atom that makes it similar to an organelle in Eukaryotic cells. (7)
- 10 Like charges do what? \_\_\_\_\_. (5)
- 12 A \_\_\_\_\_ can be seen, especially in the dark, when an electric discharge takes place. (5)
- 13 Unlike charges do what? (7)
- 14 When someone touches a surface while charged, they may feel a \_\_\_\_\_ as discharge occurs. (5)

#### Down

- 1 Particles in an atom with an overall positive charge. (7)
- 3 A synonym for unlike. (9)
- 4 The name given to particles that have neither a negative nor a positive charge. (8)
- 7 Particles in atoms that have an overall negative charge. (9)
- 8 A facial expression that a person makes, usually when they are shocked, in pain or angry. (7)
- 9 It is usually hard to move two surfaces over each other due to the force of \_\_\_\_\_. (8)
- 11 When electric charges build up, this is referred to as a \_\_\_\_\_ charge. (6)

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1)

- a. Describe electricity.
- b. What are the two types of electricity?
- c. What is the law of conservation of energy? How does it explain what happens to electrical energy after it is used by an appliance or phone?

2)

- a. How can an object have a negative charge? Draw a diagram.
- b. How can an object have a positive charge? Draw a diagram.
- c. How can an object have a neutral charge? Draw a diagram.

3)

- a. What is an insulator? Give examples.
- b. What is a conductor? Give examples.
- c. Describe how an electrical wire can transfer electricity without losing charge to the surroundings.

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) You buy a new microwave but cannot plug it into an extension cable because it only has two holes, while the microwave cable has three prongs. Your friend suggests cutting off the third prong.



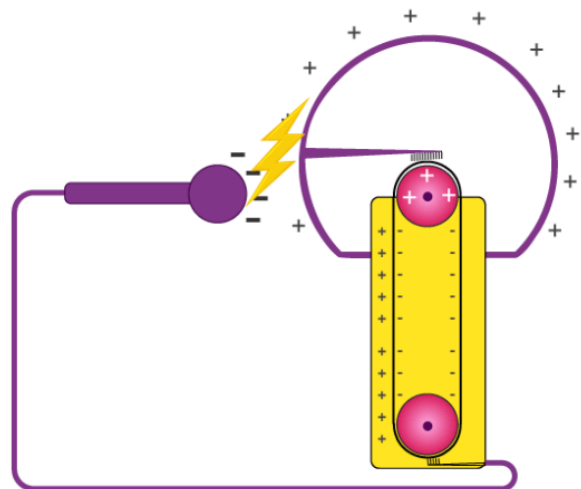
a. Describe what does the third prong of the cable do? Include the name of the process.

b. What would likely happen if you removed this third prong and used the microwave? How could it affect you?

5) Describe the law of static charges.

6) What factors affect the amount of electrical force acting on an object?

7) How does a Van der Graaff generator work? Does it generate energy with conduction, or induction and why?



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8)

- a. If a negatively charged balloon is brought near a wall, describe what happens to the charges involved.
- b. If the balloon touches the wall, what happens?

9) What particle moves when there is a charge imbalance?

10) What is the unit of measurement of a charge?

11) What causes lightning to move from a cloud to the Earth? How can lightning strike a human, as reported throughout history?

12) What is a faraday cage? How does it work? How does it apply to an average citizen in a thunderstorm?