

Name

Period

Date

Lab #

Teacher:

Title:

Aim: To Place elements in order of increasing metallic character by observing their properties.

Pre-Lab: (You will be given four unknown elements. Write down ideas you have to help you solve the aim for this lab.)

Vocabulary:

Malleable-

Brittle-

Ductile-

Allotrope-

Luster-

Dull-

Materials:

Method:

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Data:

<u>Element</u>	<u>Observed Properties</u>			
1				
2				
3				
4				

Conclusion:

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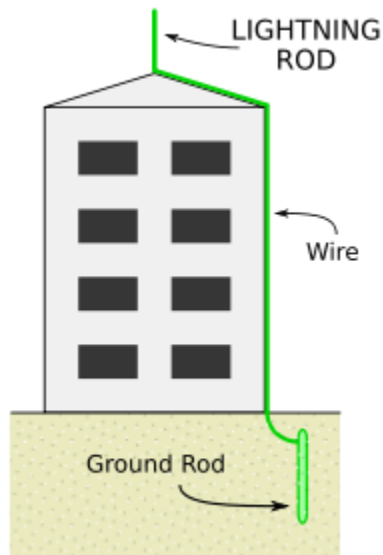
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Answer any two of the four questions below:

- 1) You are looking to purchase a lightning rod to protect your house from lightning strikes during storms. A lightning rod is attached to your house as shown below so that electricity will pass through the wire instead of through your home.



Select from the elements below the best one to use as your lightning rod

Aluminum or Copper

Support your answer using your knowledge of chemistry.

Bonus: Your friend says you should get a lightning rod made from sulfur is this a good idea or not. Explain why?

- 2) A sacrificial anode is a metal that is supposed to oxidize (rust). It is sacrificed to protect another metal that you do not want to oxidize (Rust). One use of a sacrificial anode is to attach them to the hull of ship that is made out of metal as shown below, so that the sacrificial anode will oxidize(rust) before the hull of the ship:



Select from the elements below the best one to use as a sacrificial anode that will oxidize before the hull of an iron ship.

Zinc or Magnesium

Support your answer using your knowledge of chemistry.

Bonus: Your friend says you should use a sacrificial anode made of sodium for your ship is this a good idea or not. Explain why?

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- 3) You are starting your own country and have decided to make your own currency (money). You have decided to have all your currency (money) in the form of coins.



Select from the elements below the best one to use to make coins

Aluminum or Calcium

Support your answer using your knowledge of chemistry.

Bonus: Your friend says you should make your coins from mercury is this a good idea or not. Explain why?

- 4) As a well-known material Scientist(chemistry student) you have been asked to design a better cookware (pots and pans)



Select from the elements below the best one to use to make better cookware.

Aluminum or Copper

Support your answer using your knowledge of chemistry.

Bonus: Your friend says you should make your cookware with handles made of carbon is this a good idea or not. Explain why?

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