

# TO CONDUCT OR NOT CONDUCT LAB

## Conductors and Insulators

### PRELAB INFORMATION:

#### CONDUCTORS

What is a conductor? \_\_\_\_\_

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#### INSULATORS

What is an insulator? \_\_\_\_\_

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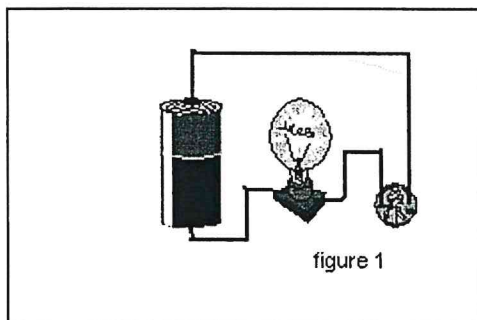
**INVESTIGATION:** Inquiry Mark: / 8      Communication: / 8

**Problem:** To determine which type of materials are conductors or insulators of electricity.

**Hypothesis:** Indicate in the observation chart, whether or not you think the item is a conductor or an insulator of electricity.

**Materials:** Two 1.5V Dry Cell, 1.5V Lamp With Sockets, 3 Connecting Wires, Test Materials: string, iron nail, paper, glass stir stick, aluminum foil, plastic strip, paper clip, wood, rubber elastic band, copper penny, Styrofoam, cardboard, pasta, wax crayon, braces, belly ring/ear ring

#### **Procedure:**



1. Set up a 2 batteries, lamp and connecting wires as shown in figure 1. Have your teacher check you setup before proceeding.  
**Figure 1**
2. Keep the ends of the two test wires about 2cm apart. Bring the ends of the wires into contact with each of the test materials to be tested. Record your observations in the data table.
3. After you have tested all of the materials, disconnect the wires from the batteries.

## Observations

<b>Material</b>	<b>Hypothesis – Conductor or Insulator of Electricity</b>	<b>Actual Observations – Conductor or Insulator of Electricity</b>
String / Yarn		
Iron Nail		
Paper		
Glass Stir Stick		
Aluminum Foil		
Plastic strip/ruler		
Paper clip		
Wood		
Rubber Elastic		
Copper Penny		
Styrofoam		
Cardboard		
Pasta		
Wax Crayon		
Braces		
Belly ring / Ear ring		

**Discussion / Analysis:** In full sentences, write a discussion section below that answers the purpose to this lab. Your paragraph should answer these questions.

1. Which materials are conductors? How do you know for sure?
2. Which materials are insulators? How do you know for sure?
3. Comment on any predictions that were incorrect that surprised you.
4. Which main group of elements on the periodic table make better conductors?
5. From the list of materials tested, what one material would you most likely find in the making of electrical wires? Why?

<b>RESPONSIBILITY:</b> no horse-play; student conducts themselves in a respectful manner; maintains a voice level that is respectful to the learning environment and other learners; uses equipment properly	<b>E</b>	<b>G</b>	<b>S</b>	<b>N</b>
<b>IINDEPEDENT WORK:</b> good use of time; student does not need to be reminded to stay on task or to use time in the lab effectively; not reminded to put elecectronic devices away, student is organized in their approach to the lab which results in efficient use of class/lab time	<b>E</b>	<b>G</b>	<b>S</b>	<b>N</b>
<b>COLLABORATION:</b> responds positively to other group members and peers within the classroom and lab setting; language is positive and appropriate; works to build positive and healthy peer-to-peer relationships	<b>E</b>	<b>G</b>	<b>S</b>	<b>N</b>

