**Conductors vs. Insulators: An Inquiry Lab**

**Identify:**

In this lab we are trying to determine the difference between

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Hypothesis:**

We believe that insulators will cause the conductivity indicator to \_\_\_\_\_\_\_\_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. We believe that conductors will cause the conductivity indicator to \_\_\_\_\_\_\_\_\_\_\_\_ because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Materials for testing:**

*1 battery 1 conductivity indicator*

**Procedure:**

1. How does the conductivity indicator work?
2. How will you add objects to test with the conductor?
3. How will you tell if an object is an insulator or a conductor (what data will you collect)?
4. Will you be repeating any part of your procedure?

**Data:**

*Begin by filling in the objects you will test (from your materials list above) in the first column. Then make a prediction: will the conductivity indicator react for each object?*

|  |  |  |
| --- | --- | --- |
| Object | Prediction  Will the conductivity indicator react? | Result  Did the conductivity indicator react? |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Analysis:**

*Answer the following questions.*

1. Which objects conducted electricity well?

2. Which objects did not conduct electricity well?

3. How can you tell if an object is an insulator or a conductor based on your observations?

4. What materials were the conductors you tested made of?

5. What materials were the insulators you tested made of?

6. What do you think is meant by “semiconductor”?

**Conclusion:**

*Write a 3- 5 sentence conclusion describing the difference between insulators and conductors. Include the evidence you have to support your conclusion as well as the underlying property that makes an object an insulator or a conductor.*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_