

Name _____

IB SL Physics

Partner _____

Date _____

Goal: Investigate a factor that affects the resistance of a wire and determine the relationship between this factor and the resistance

In this activity you will practice determining measurement uncertainty, the relationship between two variables based upon inspection of a graph, the physical significance of a slope, and practice using electrical meters.

- You will work with ONE partner to take the data, and to prepare the lab report.
- You will determine the effect of **length** on the **resistance** of a wire. You will use electrically conductive paper formed by a coating of carbon on one side of a sheet of paper.
- Using the Conductive paper, measure the **resistance** of various lengths of the paper, and the **length** of the paper being used.

Which multi-meter did you use? (Circle one) orange blue yellow

Left end of paper +/-	Right end of paper +/-	Length	Length Error	R Meas +/-

- 1) Sketch the cm scale and justify the uncertainty
- 2) **Graph** Resistance versus length on graph paper (ignore errors). Choose an appropriate scale so that the graph takes up most of the page.
- 3) Using your graph, **what is the relationship** seen between the length and Resistance of the conductive paper? Explain.
- 4) Using Physics Equations, **what is the physical significance of the slope?** (It is not necessary to find the value of the slope)