Activity Guide 1

**Safety**:

* Attach the wire samples for testing to a ruler so the ends cannot flick into your eyes

Use the micrometer screw gauge to **measure the diameter of the wire**

Diameter mm Calculate the radius (r) mm

White boxes are measured values

Grey boxes are calculated values

Convert radius to metres m

Calculate the cross section area (A) m2

Use a ruler to **measure the length** (l) m

Use a multimeter to measure the Resistance (R) Ω

Calculate the coefficient of resistivity for your wire Ωm

Try measuring the resistance of your wire at different lengths.

How does changing the length of wire affect resistance?

Compare your results with other students. Which material has the lowest coefficient of resistivity?

Taking all the properties into account, which material will make the best electrical connectors and which will make the best wires in a Greenpower car?