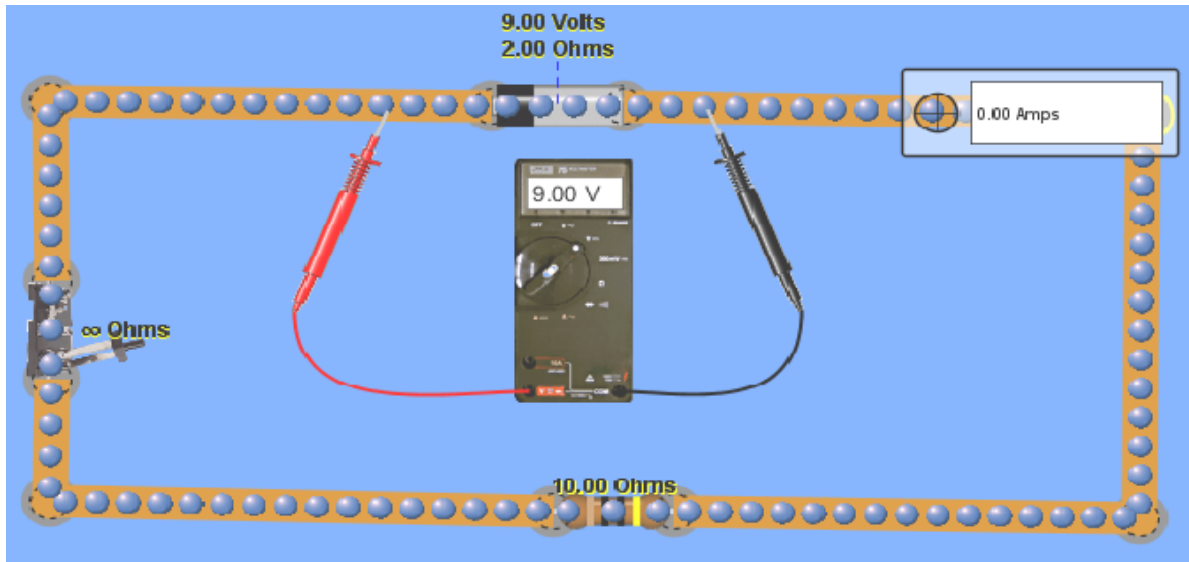


# Internal Resistance of a cell



Go to <http://goo.gl/N2VLQ> and download or run the PhET dc circuit construction kit.

Now build this circuit following the given instructions .



1. Right click the cell and change voltage to 9 volts. PRESS DONE.
2. Right click the cell again and change internal resistance to 2 ohms then PRESS DONE
3. Right click the resistor and set it to 10 ohms. PRESS DONE
4. Select the NON CONTACT ammeter and place it as shown.
5. Select the voltmeter and connect it across the terminals of the cell. This voltmeter measures the terminal potential difference of the cell commonly called the cell's tpd.

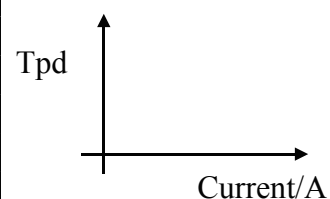


1. Open the switch so that there is no current.
2. Record the voltmeter reading. This is the EMF of the cell.
3. Now right click the 10 ohm resistor and change its value to 9 ohms. Remember to PRESS DONE before noting the reading on the ammeter and the voltmeter.
4. Change the resistor value to 8 ohms. Record readings in the table.
5. Repeat changing the resistor's values until the value is 2 ohm.



Resistor Values/ $\Omega$	Current/A	Tpd/ V
10		
9		
8		
7		
6		
5		
4		
3		
2		

Plot the data on a graph like this:



Calculate the gradient of the line and compare it to the internal resistance of the cell.