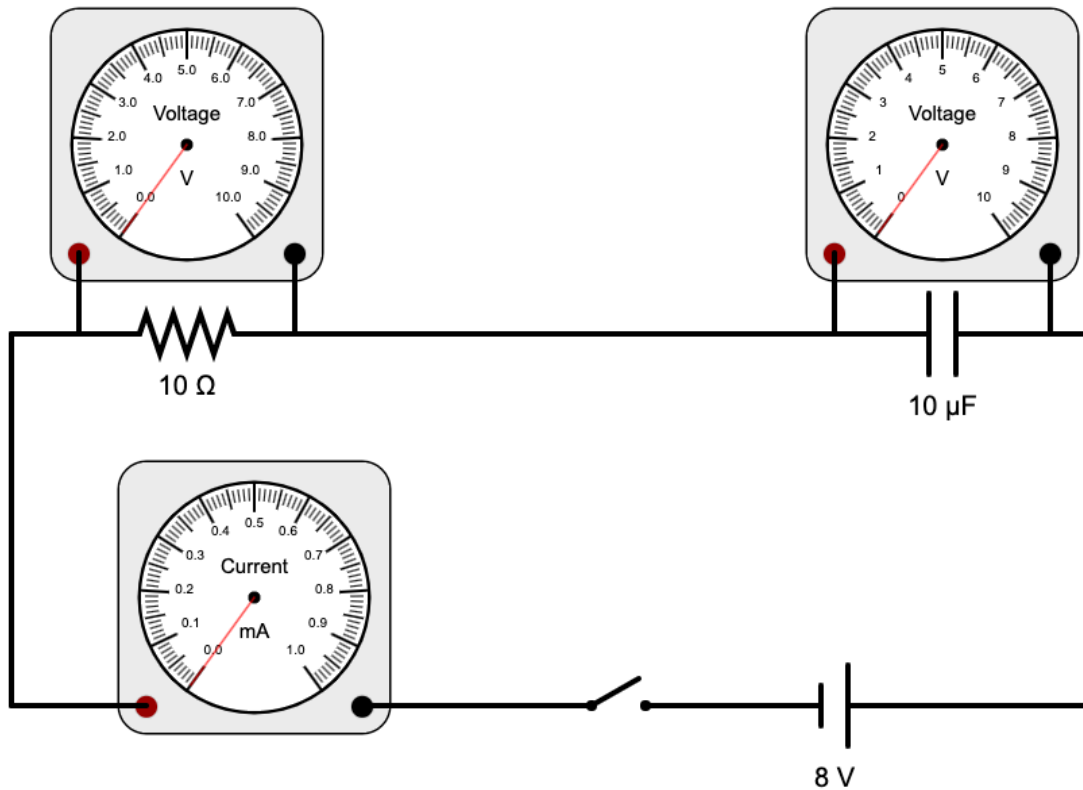


RC Series Circuit Visualizer

Step 1: You will have a RC series circuit where you can view the current through the circuit and the voltages across the resistor and the capacitor. The capacitor will start uncharged and you can short the capacitor when the switch is closed to quickly restart the charging process



Step 2: Close the switch and pay close attention to the current meter. What happens to the current in the circuit as time goes on? Give as much detail as possible.

Step 3: Click on the capacitor to remove all the charge it has stored up and watch the voltage across the resistor as the capacitor charges. Describe what you are seeing in as much detail as possible.

Step 4: Discharge the capacitor again and watch the voltage on the capacitor as the capacitor charges. Describe what you are seeing in as much detail as possible.

Step 5: Open the switch and click on RESET. Change the values of the resistor, capacitor, and battery separately and run the experiment again. Don't change more than one variable at a time. Notice everything and write down as many different things as you can about how this circuit is behaving.

Step 6: Set the battery voltage to 8, the resistance to $20\ \Omega$ and the capacitor to $10\ \mu\text{F}$. Close the switch and watch the voltage needles. Without actually collecting data, what do you think the graphs would look like for V_r (Voltage across the resistor) and V_c (Voltage across the capacitor)? Sketch what you think it will look like on the axes below. Do your graphs in different colors. Realize that in real life this would happen much faster but the shape of the graph would be identical

