

Objectives

1. The student will be able to connect Batteries in Parallel.
2. The student will be able to measure the output voltage of connecting Batteries in Parallel.
3. The student will investigate the advantages of connecting Batteries in Parallel.

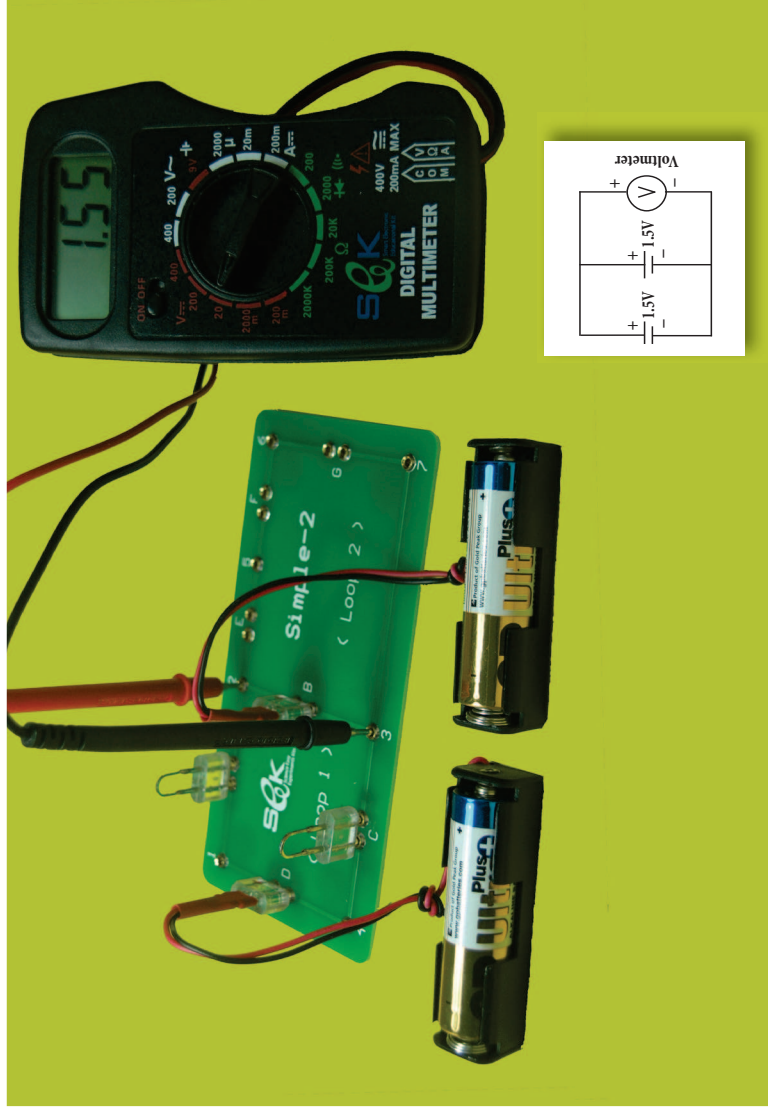
Apparatus

- Experiments Board (Simple-2)
- DMM
- Two 1xAA Battery Holder w/AA battery
- Jumpers

Procedure & Conclusions

1. Connect 1xAA battery holder at the pair (D) in a way that the positive terminal (red wire) will be towards point (1)
2. Use the DMM probes to measure the voltage difference (V_1) of this battery by inserting the red probe of the DMM in the point (1) & black probe in the point (4), watch the DMM reading.
- Voltage difference of the first battery (voltage difference between points 1 & 4), (V_1) = volt.

3. Connect another 1xAA battery at the pair (B) in a way that the positive terminal (red wire) will be towards point (2), as shown in the below photo.



4. Insert the red probe of the DMM in the point (2) & black probe in the point (3), watch the DMM reading.
 - Voltage difference of the second battery (voltage difference between points 2 & 3), $(V_2) = \dots\dots$ volt.
5. Insert jumpers at the pairs (A) and (C), watch the DMM reading.
 - Voltage difference between points (2 & 3), $(V_{\text{out}}$ of the two batteries connected in parallel), $V_{\text{out}} = \dots\dots$ volt.
 - We conclude that two batteries in parallel produce a voltage equal to the voltage of **... one battery / two batteries ...**

Notice: Batteries in parallel need to be connected with the positive end of one battery to the positive end of the other battery.

Discussion

1. What is the advantage of connecting batteries in parallel?
2. Why it's not advisable to connect batteries of unequal voltages in parallel?