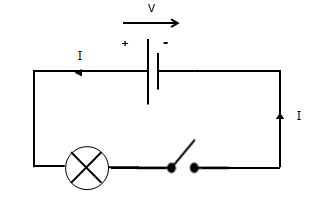
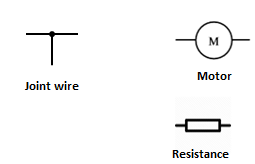
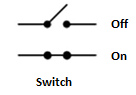
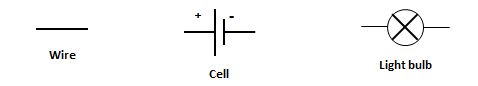
Practical electricity for class 8

**Day 1 : Introduction of practical wiring**

* Introduction by questioning them about what they know about electricity (sources, what is used for, ohms low…)
* Draw with them a simple circuit with a battery a led and a switch.
* Do different groups for practical, each group need to create the circuit.



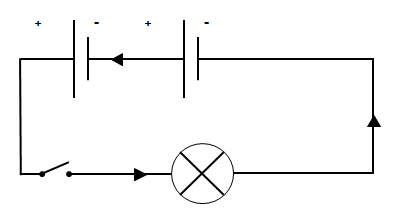
* Reminding of electrical symbols for drawing circuit.



* Presentation of short circuit, what is it, why it’s working like that 🡪 electricity is lazy and always try to go through the easy way.

**Day 2 : Series combination of batteries**

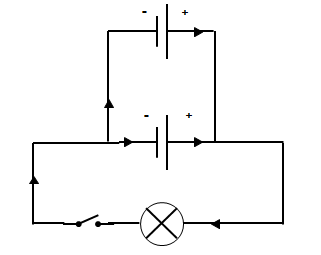
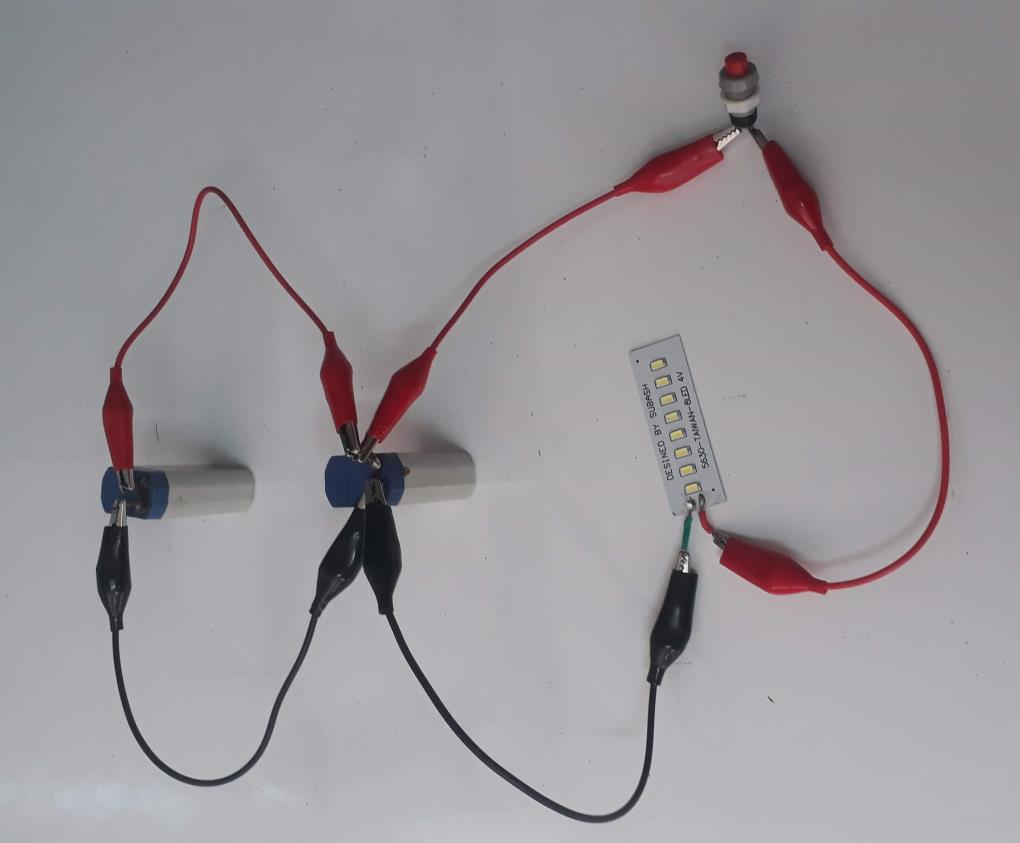
* Start the class by giving them a problem: “we have only one bulb but we want more light, what can we do, do you have some Ideas ?
* Draw the series combination of batteries on the board.
* They have to create the combination (practical) : 2 batteries, 1 switch and 1 LED for this experience.



* Ask them what they saw?
  + More light, less light, same light?
* Reminding the equation for series combination: **V=V1+V2**
* Explain how to draw intensity and voltage on an electrical diagram.

**Day 3 : Parallel combination of batteries**

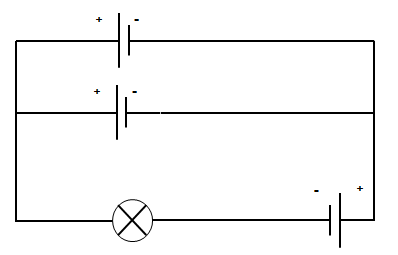
* Start the class by reminding the series combination and ask if another combination could exist ? Ask somebody to draw it on the board.
* Draw the parallel combination of batteries on the board
* They have to create the combination (practical) : 2 batteries, 1 switch and 1 LED for this experience.

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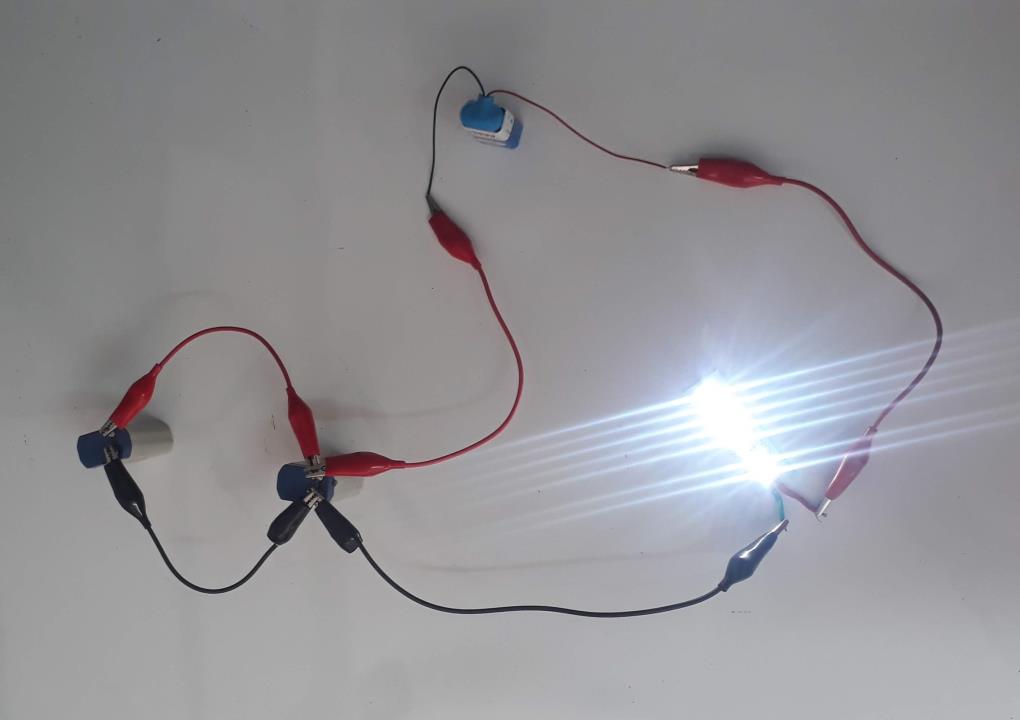
* Ask them what they saw ?
  + more light, less light, same light ?
* Reminding the equation for series combination: **V=V1=V2**
* Explain how to draw intensity and voltage on an electrical diagram.

**Day 4 : Electrical circuit with mix of combination.**

* Exercise more complex about combination of batteries, mix of series and parallel combination.
* Draw a electrical circuit on the board with series and parallel combination.

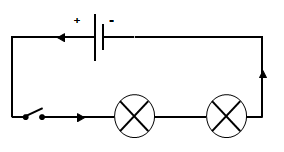
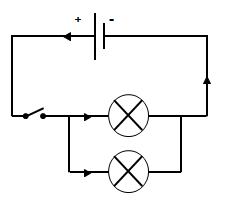


* Make them calculate the different Veq and the global voltage of the circuit by using the two equations they learned before.
* You can do a second exercise if you have the time…
* Make them create the first circuit (practical) and check the voltage with a volt meter.

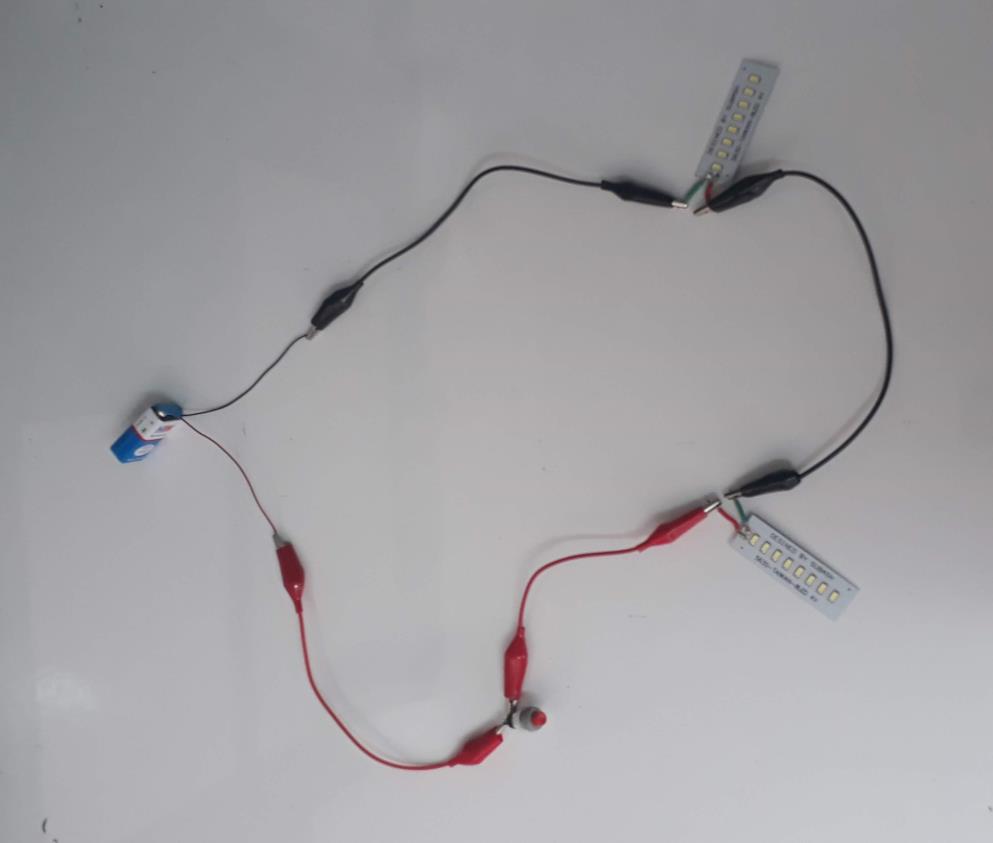
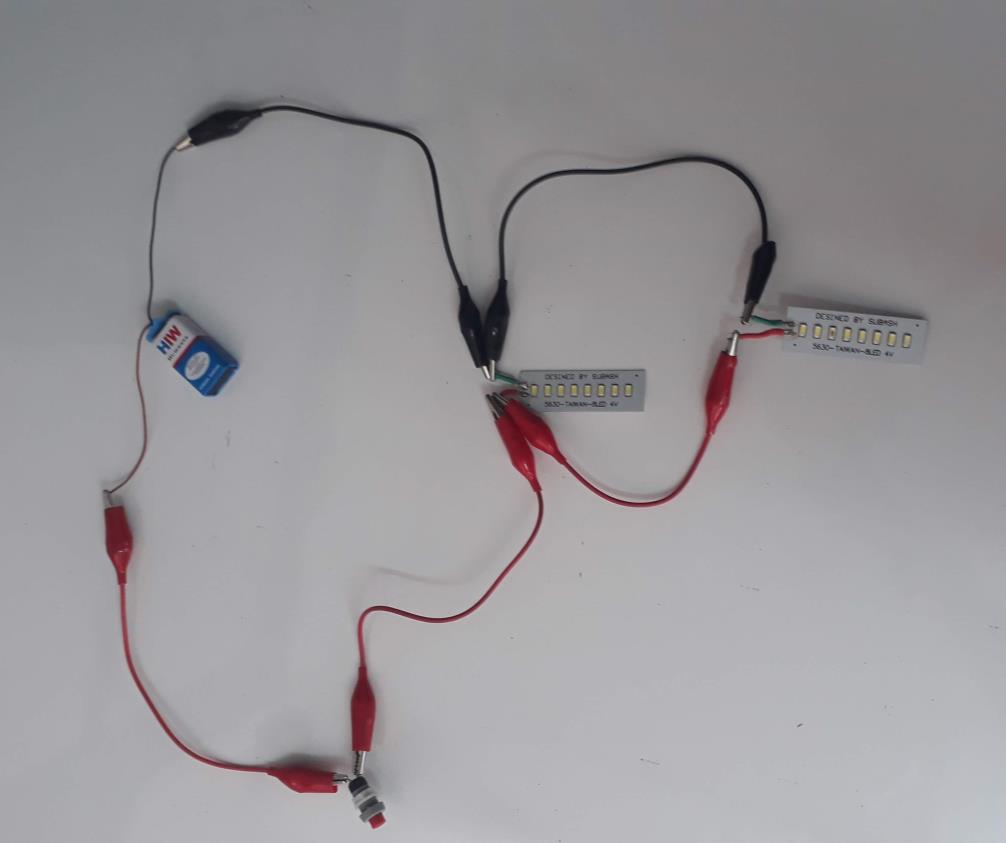


**Day 5 :**

* Ask them: “if we have two bulbs, how can we connect them? Series, parallel?”
* One of them comes to the board to draw it.

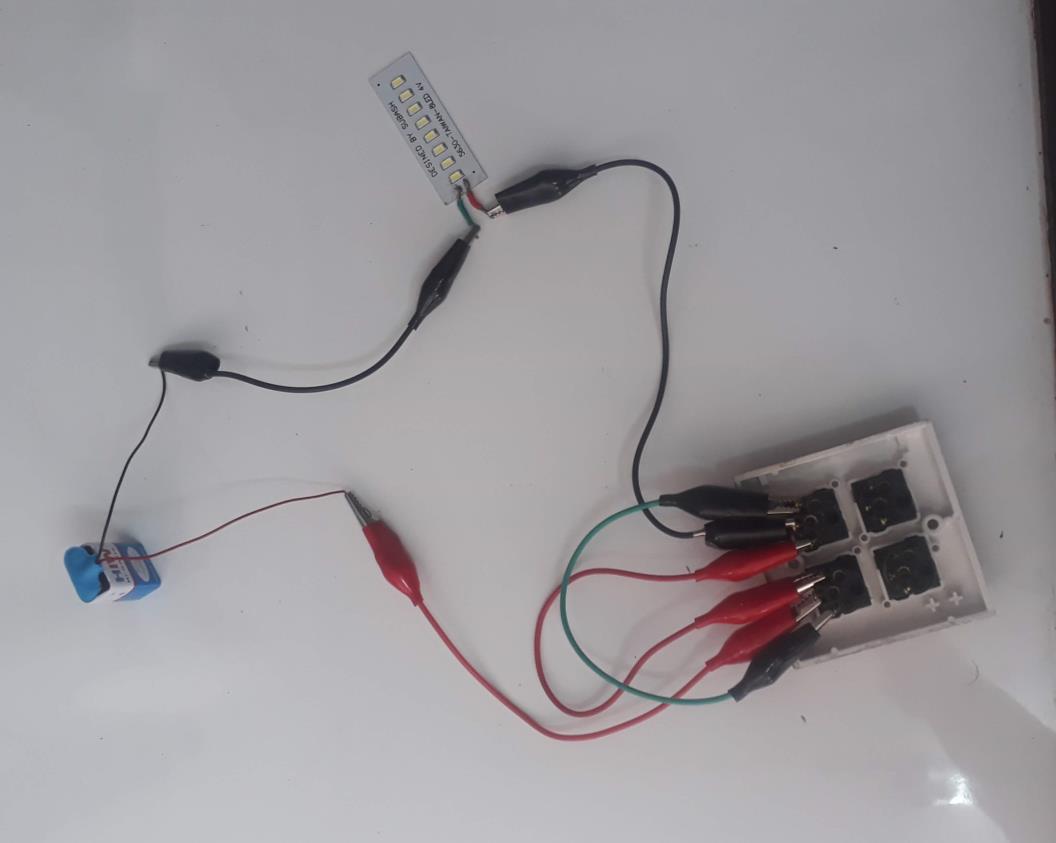
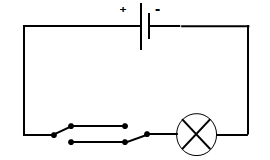
* Ask them what will happen in each case, less light same light or more light?
* Make 4-5 groups (depends of number of children). They have to create the different experiences:
* 1 🡪 series combination of bulbs: 1 battery 9V + 2 bulbs + 1 switch 🡪 what do you observe?
* 2 🡪 Parallel combination of bulbs: 1 battery 9V + 2 bulbs + 1 switch 🡪 what do you observe?

* Make them think about how it could be wiring in their house link to what we just observe before with practical.
* In your house it’s always in parallel.

**Day 6: One light and two way switch**

* Wiring problem: how to light one bulb with two different switches, like in some stairs, you need to have the possibility to light the bulb from the top and from the bottom of the strairs.
* They need to find something for the first 10 min, after that, if nobody found a solution, introduce the two way switch.
* Ask them how to wiring this switch if we want to resolve the problem. Give them the solution if nobody found it.



**Day 7 : Simple cell**

* Simple cell presentation, when it was created, by whom and why ?
* Explain the different chemical reaction which happens in the cell: electrons flows in wire and in the solution explain what happen with ions.
* Create the experience (You not the kids, it’s dangerous because of sulfuric acid). Plug a volt meter to show that we have 1V tension.