# Student Worksheet (LKPD)

## SERIES AND PARALLEL ELECTRICAL CIRCUITS

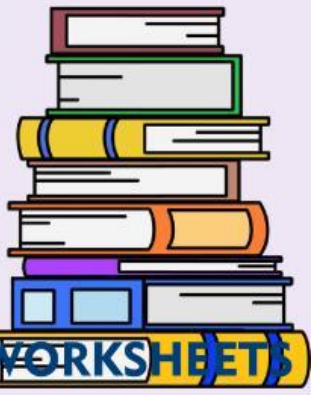
Class IX odd semester



Group name :

1.
2.
3.
4.
5.





LIVEWORKSHEETS

# LKPD

## Learning Objectives

1. Students are able to identify open and closed circuits
2. Students are able to identify the characteristic series and parallel electrical circuits

## Charging Instructions

To achieve the competencies in LKPD, students are expected to follow the following filling instructions:

1. Read the charging instructions in the LKPD
2. Make a group with classmates consisting of 4 to 5 people
3. Prepare at least 1 (one) electronic device that can be connected to the internet in the form of a mobile phone, laptop, tablet or other
4. In LKPD there is a video link that can be watched to increase understanding of the concept
5. In LKPD there is an experimental procedure that must be done
6. Do the task well and with sincerity
7. If there are things you don't understand, ask the teacher

LIVEWORKSHEETS

# LKPD

## Orientatian

Do you know those LED lights that are usually used as decoration? What circuit is used in it? With LED lights, we can easily turn off all the lights with just one push. Imagine if you had to turn them all off one by one, it would be very troublesome, wouldn't it? So what circuits can we find in home lighting installations? In our house lights we can turn them on and off by using a different switch for each light. But how do the lights on the two electrical circuits differ? So what exactly is the cause that influences the lights on? Let's find out more!

Watch the following video to build an understanding of electrical circuits.



SERIES PARALLEL ELECTRIC CIRCUITS

and

THE LIGHTS TURN ON THE ELECTRICAL CIRCUIT

Can you find out what is the cause of the problem above? Write down the hypothesis you are thinking about!



LIVEWORKSHEETS

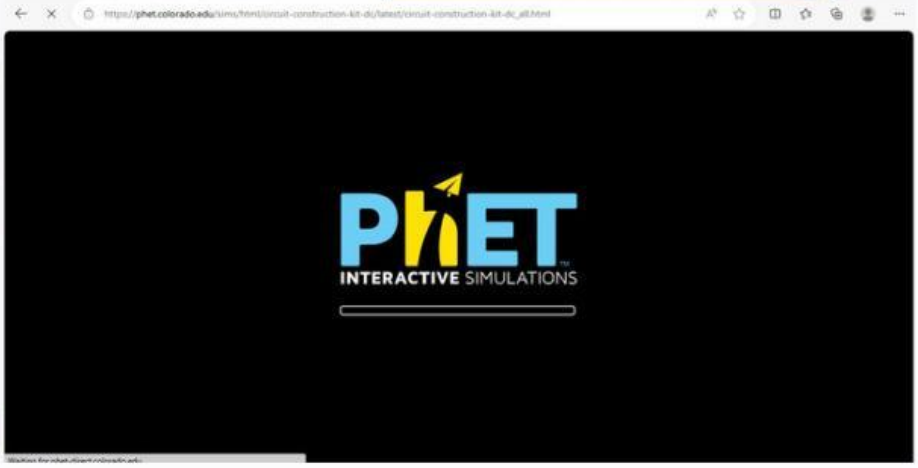
# LKPD

## Tools and materials

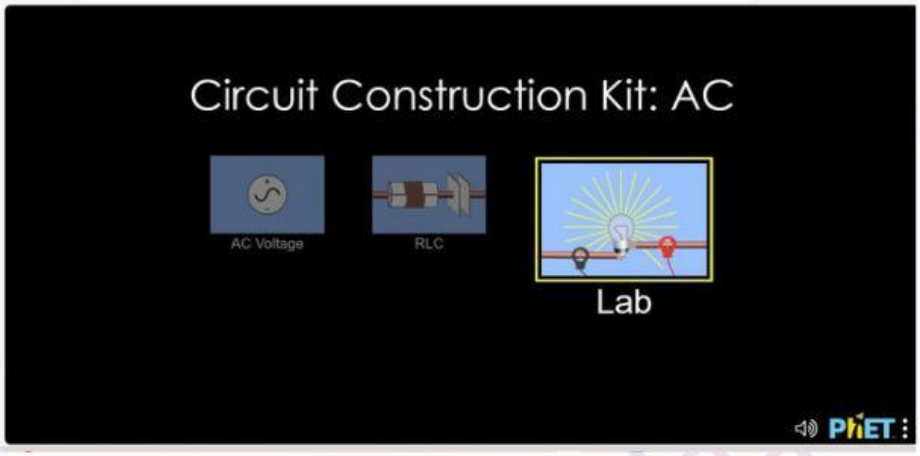
1. Electronic Devices (HP/Laptop)
2. Internet access
3. Phet Colorado Stimulation

## Work procedures

1. Prepare an electronic device that is connected to the internet
2. Enter the Phet Colorado Simulation Virtual Laboratory




3. Select the Lab menu to start the practicum



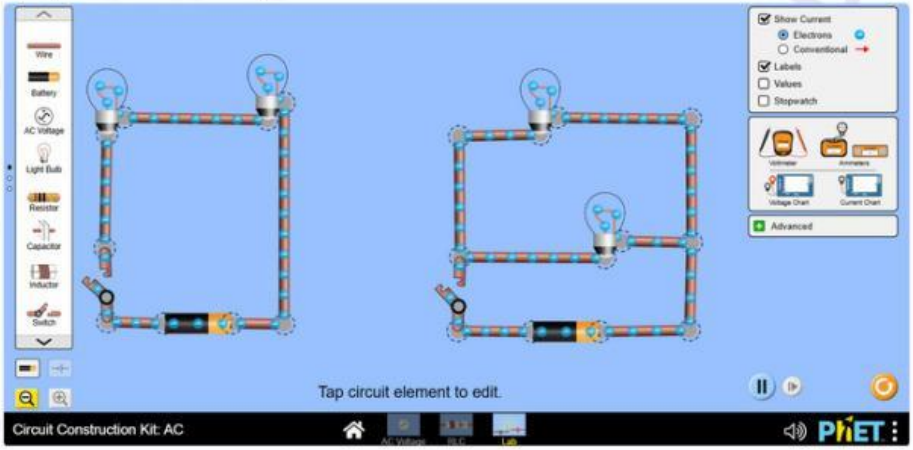

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# LKPD

4. The page appears in the virtual laboratory




5. Arrange series and parallel circuits



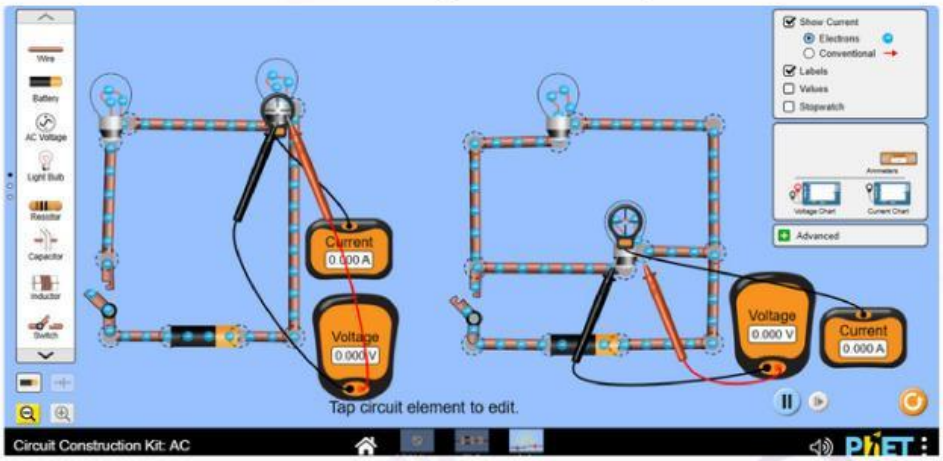

6. Observe on the electrical circuit

| | |
|---|---|
| When the light turns on? | closed switch |
| How the electron state? | closed circuit |
| then the circuit is called? | open switch |
| When the light turns off? | electrons do not flow |
| How the electron state? | open circuit |
| then the circuit is called? | electrons flow |

LIVEWORKSHEETS

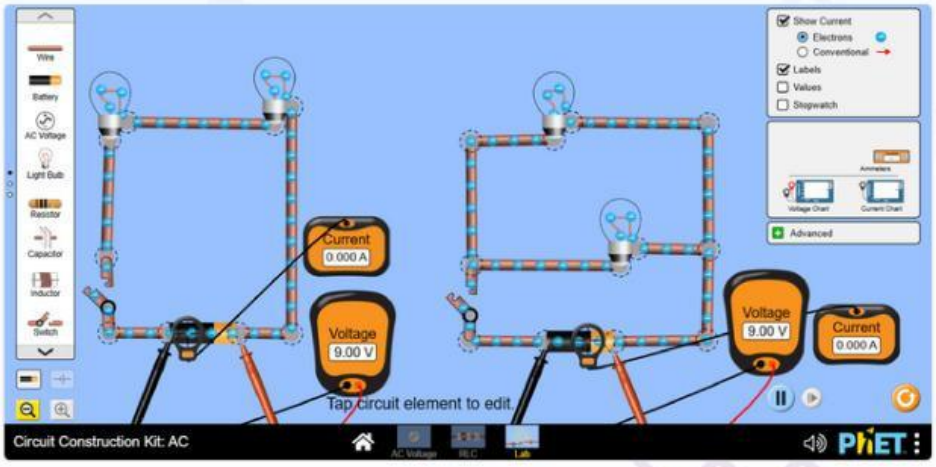
# LKPD

7. Observe the current and voltage on the lamp




| on the lamp | current | voltage |
|---|---|---|
| series | | |
| paralel | | |

8. Observe the current and voltage on the battery




LIVEWORKSHEETS

# LKPD

| on the batery | current | voltage |
|---|---|---|
| series | | |
| paralel | | |

If the battery as the total source of current and voltage, if it is connected with a lamp what is the mathematical formula?

Series circuit

I total =

V total =

Paralel circuit

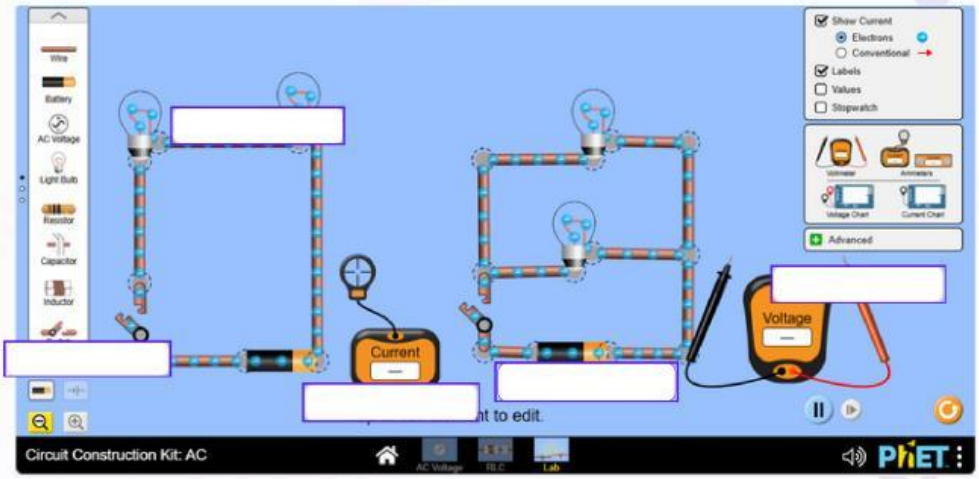
I total =

V total =

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# LKPD

9. Take a look at the section names below




resistance

power source

amperemeter

voltmeter

switch

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