# yelo

# Laser Tag Challenge



## WHAT IS LASER TAG?

Laser tag is a recreational shooting sport where participants use laser emitting light guns to tag designated targets. Laser tag is similar to paint-ball but without the pain.

## WHAT IS A LASER

A laser is a device that stimulates the production of electromagnetic radiation, which results in the optical amplification and emission of light.
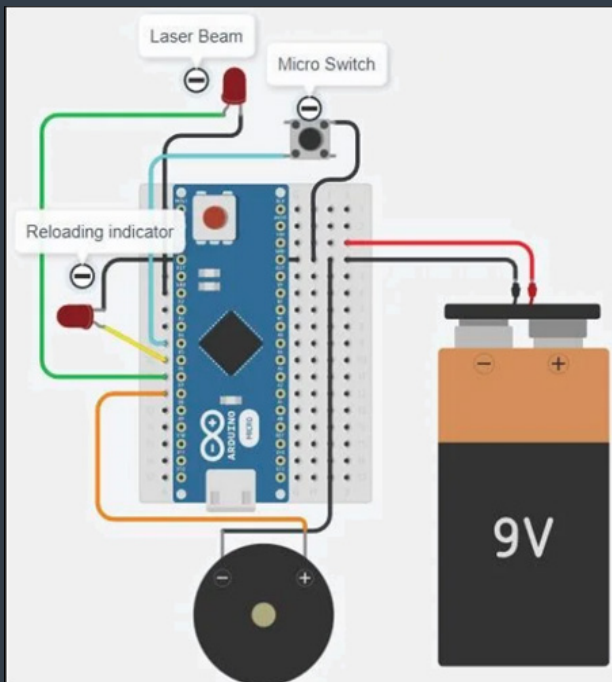


## ABOUT THE CHALLENGE

Laser tag usually consist of guns, targets and bases. In our challenge we are using a gun and target. Each participant is limited to five bullets in which they have to try and shoot the target three times. When you press the trigger, the laser shoots a beam of light. Once you are out of bullets, the reloading indicator blinks letting you know that the gun is reloading.

This challenge will test your eye and hand co-ordination and each shot needs be used wisely.. don't waste them!

## HOW IT IS BUILT

The gun is usually made of Arduino Uno, Lasers, Trigger, speaker and LEDs. The schematic of the Laser Gun, right, you can see that the components used are laser, micro switch, trigger, LED and a speaker.

## ABOUT THE TARGET

The target consists of Arduino Uno, LDRs and LEDs

## WHAT IS LDR?

LDR (Light Dependent Resistor) is a type of resistor that works on photoconductivity i.e. resistance changes according to the light. ts resistance decreases with an increase in the intensity of light.
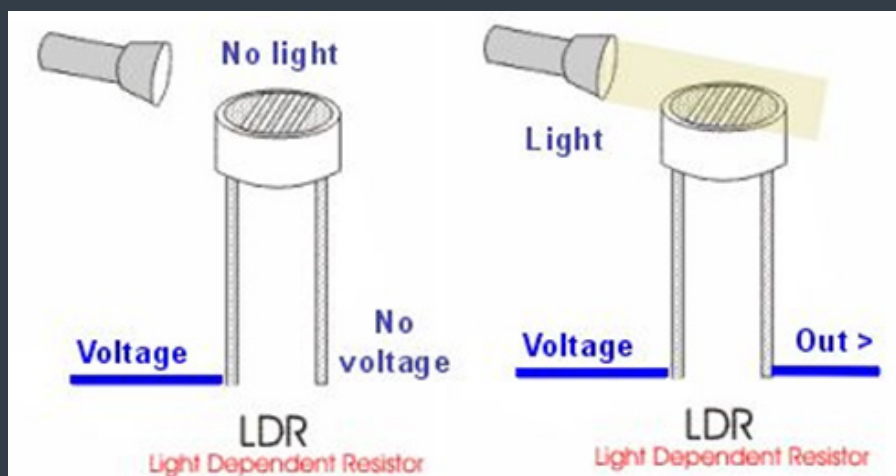


**LDR**

## WHAT IS LED?

Electrical equipment commonly uses light-emitting diodes (LEDs) as a conventional source of light. It may be utilised for a variety of purposes, from huge billboards to your mobile phone.



**LED**

In simple words  **Light = less resistance** and  **no light = high resistance**



When the laser from the gun hits on the LDR which is mounted on the target, it reduces its resistance which would then signal the Arduino that it has been hit which would then trigger the LEDs to blink to notify you about it.