

# DARLINGTON PAIR - BREADBOARD

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On behalf of The World Association of Technology Teachers

## W.A.T.T.



World Association of Technology Teachers

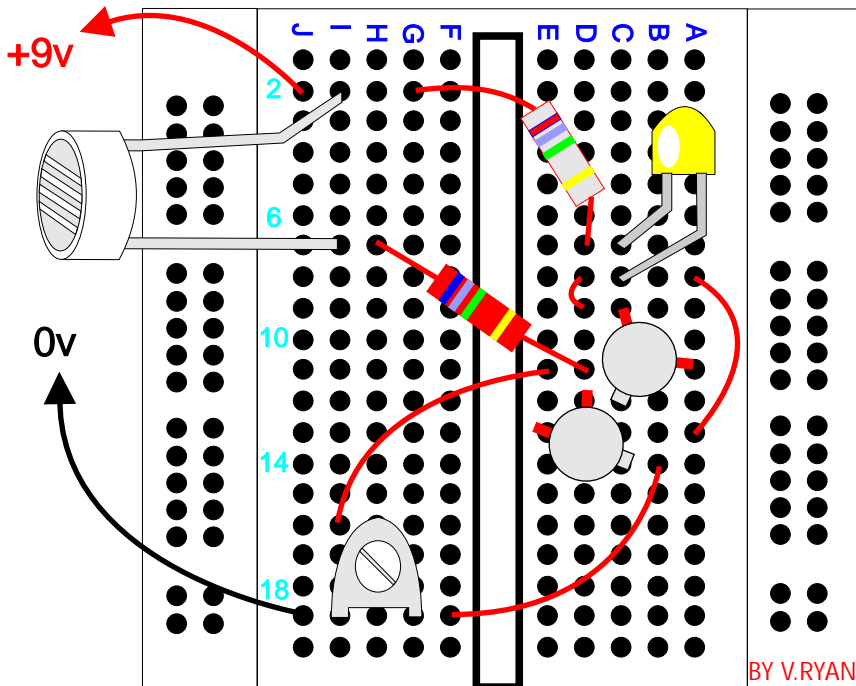
This exercise can be printed and used by teachers and students. It is recommended that you view the website ([www.technologystudent.com](http://www.technologystudent.com)) before attempting the design sheet .

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# BREADBOARD PROJECT

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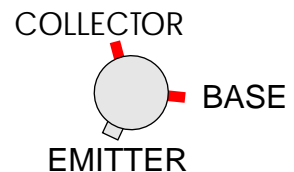
## DARLINGTON PAIR PROJECT



### Components:

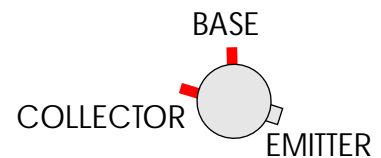
- 680 ohm resistor to protect the LED.
- 1K resistor from LDR to the base of the NPN transistor.
- TWO BFY50 npn transistor (try any alternative).
- One 10K preset resistor.
- One LDR.
- Black and red wire.

### LAYOUT - FIRST TRANSISTOR



The legs/pins on the second transistor have been twisted slightly to allow them to be pushed into the breadboard in the correct positions

### LAYOUT - SECOND TRANSISTOR



When a single transistor is used in the circuit, as seen earlier, the LDR has to be completely covered before the LED lights. This is because the current into the base of the transistor is quite weak. A darlington pair is needed to amplify the current and this is achieved by the first transistors emitter feeding into the base of the second transistor. The current is amplified to a greater level and the LDR has only to be covered partially before the LED lights.