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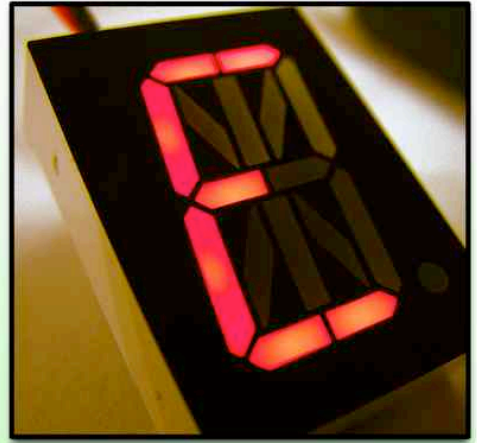
Make:

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Evil Mad Scientist Laboratories

LED Micro-Readerboard Kit

KIT VERSION 2.0



KIT CONTAINS:

16-SEGMENT
ALPHANUMERIC
DISPLAY

LITTLE
WIRE

PRE-PROGRAMMED
ATTINY2313
MICROCONTROLLER

2 X AA BATTERY
CASE W/ SWITCH

YOU NEED: SOLDERING IRON, SOLDER

ALSO HELPFUL:

WIRE
STRIPPERS,
LITTLE PLIERS
& CLIPPERS

AND HOT
GLUE GUN

MICROCONTROLLER: 20 PINS

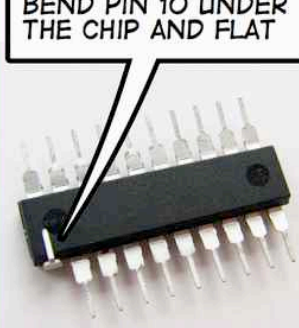
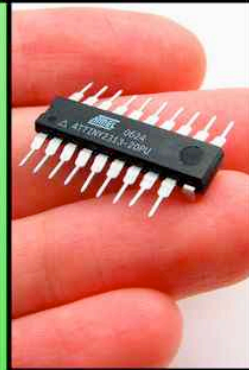
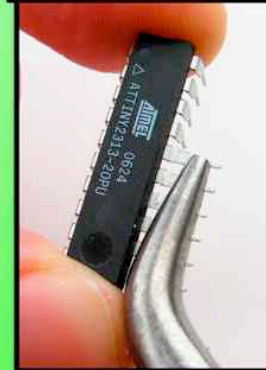
PIN 20

PIN 10

PIN 1

BEND ALL PINS- EXCEPT 10- OUT FLAT

BEND PIN 10 UNDER
THE CHIP AND FLAT



WIRES FROM
BATTERY BOX

PIN 20:
RED

PIN 10:
BLACK

CAUTION!

YOU WILL BE SOLDERING
DIRECTLY TO THE PINS OF
THE CHIP. TAKE CARE NOT
TO OVERHEAT IT!

IF YOU DON'T MAKE A GOOD
CONNECTION IN LESS THAN
ONE SECOND OF SOLDERING,
LET IT COOL DOWN BEFORE
TRYING AGAIN!

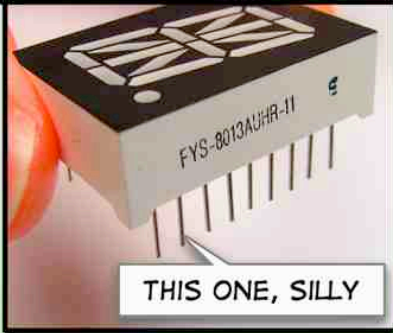
SOLDER RED WIRE TO PIN 20...

(OPTIONAL: TRIM
WIRES TO FIT
MORE NEATLY)

BEND
GIVES
STRAIN
RELIEF

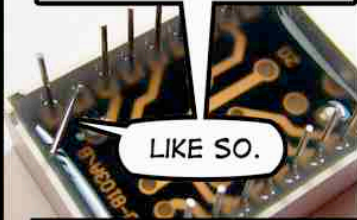
...AND BLACK WIRE TO PIN 10

ON ALPHANUMERIC LED DISPLAY, LOCATE THE SECOND PIN ON THE CORNER BY THE DECIMAL POINT



THIS ONE, SILLY

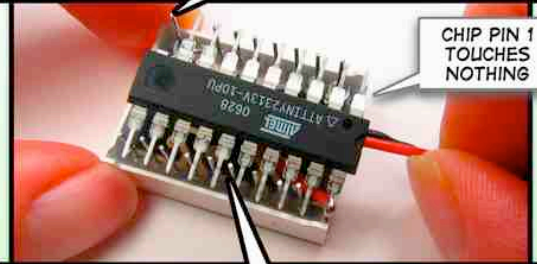
BEND IT DOWN TOWARDS THE BELLY AND END OF THE DISPLAY...



LIKE SO.

NEXT: SEE HOW THE TWO PIECES FIT TOGETHER...

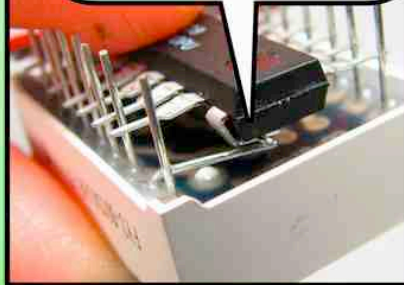
ORIENT THE TWO PARTS SO THAT THIS LONELY LED PIN WOULD TOUCH PIN 10 OF THE CHIP- IF PIN 10 WEREN'T BENT.



CHIP PIN 1 TOUCHES NOTHING

ON THIS SIDE, ALL CHIP PINS- EXCEPT PIN 20- REST AGAINST PINS OF THE LED DISPLAY

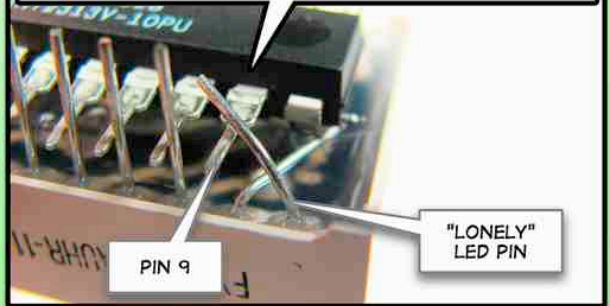
TRICKY PART: BEND THE (ALREADY) BENT PIN OF THE LED TO MAKE IT TOUCH PIN 10 OF THE CHIP.



OPTIONAL, GOOD IDEA: USE HOT GLUE TO FIX THE CHIP IN PLACE. THIS MAKES SOLDERING EASIER AND HELPS WITH STRAIN RELIEF



BEND THE "LONELY" LED PIN OVER TO TOUCH PIN 9 OF THE CHIP AND SOLDER THEM TOGETHER. MAKE SURE THAT THEY DO NOT TOUCH THE OTHER BENT-DOWN PIN!

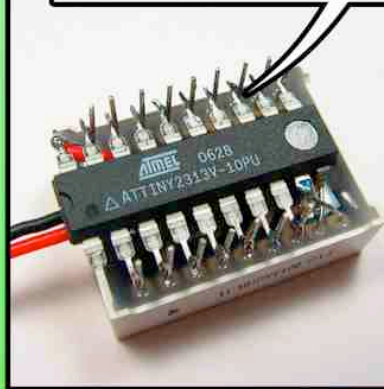


"LONELY" LED PIN

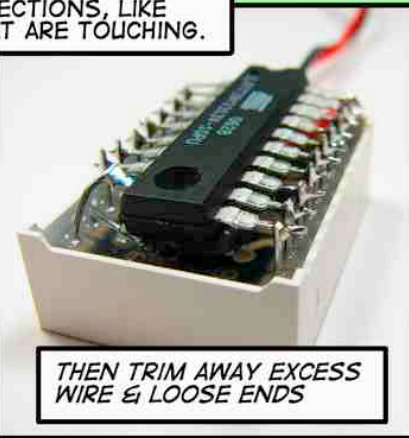
NOW SOLDER PIN 10 OF THE CHIP TO THE (BENT-DOWN) LED PIN THAT IT TOUCHES.



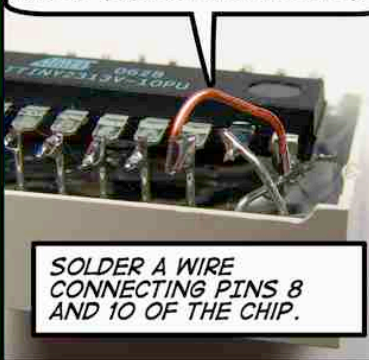
SOLDER SIXTEEN MORE CONNECTIONS, LIKE THIS ONE, BETWEEN PINS THAT ARE TOUCHING.



THEN TRIM AWAY EXCESS WIRE & LOOSE ENDS



ENTIRELY OPTIONAL STEP: ENABLE HOLIDAY ORNAMENT MODE (SEASONAL PHRASES)



SOLDER A WIRE CONNECTING PINS 8 AND 10 OF THE CHIP.

NOW GET SOME BATTERIES!

YES, THAT'S IT. PUT 2 AA BATTERIES IN THE HOLDER AND TURN IT ON.

EACH TIME THAT YOU TURN IT ON, IT WILL REPEAT ONE OF ITS STORED PHRASES. THERE IS ALSO A "SHOW-OFF" MESSAGE THAT WILL SCAN THROUGH ALL OF THE POSSIBLE MESSAGES.

SUPPORT/DISCUSS: [HTTP://WWW.EVILMADSCIENTIST.COM/FORUM/](http://www.evilmadscientist.com/forum/)

POST PICTURES: [HTTP://WWW.FLICKR.COM/GROUPS/EVILMADSCIENCE/](http://www.flickr.com/groups/evilmadscience/)

TURN THE SWITCH OFF WHEN YOU'RE NOT WATCHING TO CONSERVE BATTERIES

HAVE FUN!