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
- 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

BEND IT DOWN TOWARDS THE BELLY AND END OF THE 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!

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.

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/DISCUS: HTTP://WWW.EVILMADSCIENTIST.COM/FORUM/
POST PICTURES: HTTP://WWW.FLICKR.COM/GROUPS/EVILMADSCIENCE/

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

HAVE FUN!