What's a Microcontroller
Chapter 10 - Activity 3 variation using a serial LCD
"Terminal Operated Sensor Array using a serial LCD"

Variation of Activity 3:
Serial LCDs are reasonably easy to obtain and very easy to use. They are a good device for the introduction of serial communication.

This activity eliminates the use of the DEBUG terminal and provides a stand alone menu system using an LCD and the BOE.

The code provided in this activity relies on the use of cursor positioning on the LCD to display menu option feedback. The DEBUG screen is no longer needed for display of the menu.

The pushbutton switches used in the original activity become the menu entry buttons. One button is used to move the cursor between menu options and the other is used to select the option.

The LCD#117 controller:
The LCD#117 serial controller chip from Peter Anderson was used in this activity. The chip is available from several sources and it can be used with almost any inexpensive LCD using an HD44780 compatible chipset.
The PBasic program provided with this activity can be easily modified for use with other serial LCDs.

LCD in activity is a 2x24:
The 2x24 array LCD used in this activity was available from surplus for less than $5. It does not have an LED backlight, but worked great without one.
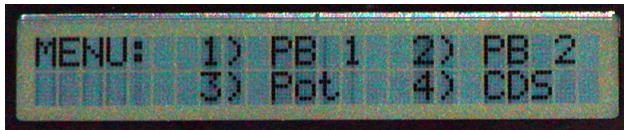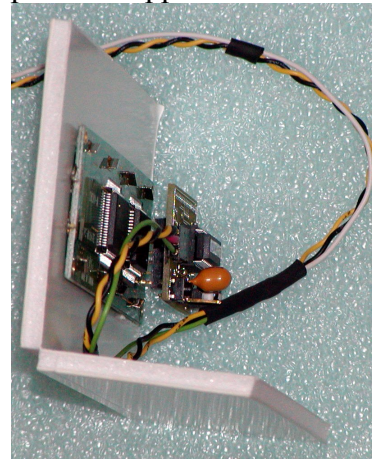

The code used for the menu can be changed to fit any LCD. Two "LOOKUP" commands are used for X and Y positioning of the cursor. The values used in those "LOOKUP" commands can easily be changed to fit your LCD.

Mounting the LCD:
For ease of use in the class room, the LCD was mounted in a foam-core frame.
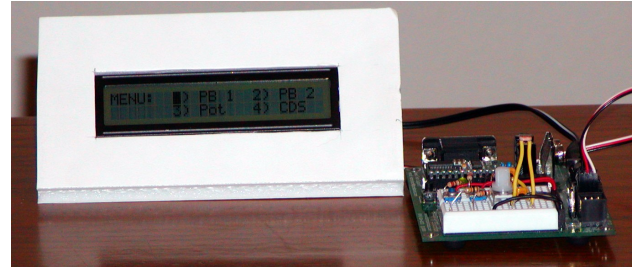
The foam-core was folded across the bottom to provide support.

Circuit:
The circuit used in this activity is identical to the original activity #3. Use the circuit that is provided in the book.

Serial LCD connection:
NOTE OF CAUTION: The LCD must be powered by 5 volts.

Use the BOE Rev C only. Set the Servo Header Jumper to Vdd. The LCD is then connected to BOE pin 15 of connector X4.