1. Install the Latest Software
   Install the MPLAB® X IDE software onto your computer by downloading it from www.microchip.com/mplabx. Launch the application.

2. Configure USB Communications
   The PICkit 3 uses generic USB drivers that are installed automatically. You do not need to do anything.

3. Connect to Target and Power
   1. Attach the PICkit 3 to the computer using the USB cable.
   2. Attach the communications cable between the debugger and target board.
   3. Connect power to the target board.

   **Typical Debugger System – Device With On-Board Debug Circuitry:**
   - Power
   - Target Board

   **Alternate Debugger System – ICE Device:**
   - Header
   - Standard Adapter
   - Power

   **Target Application PC Board**
   - PICkit 3

4. Create, Build and Run the Project
   1. Select and install the language tools (compiler, assembler, etc.) for developing your code. See the www.microchip.com web site for more choices.
   2. Use the New Project wizard (File>New Project) to create a project, or open an existing project (File>Open Project).
   3. Configure the debugger by right clicking on the main project and selecting “Properties.” Click on “PICkit 3” for options.
   4. Configure your language tools in the Properties dialog by clicking the language tool name for options. Click OK when done.
   5. Check that the configuration bits in your code match the Recommended Settings listed on this poster.
   6. To execute your code in Debug mode, perform a debug run by selecting Debug>Debug Project. A debug run will build the project, program the target with the image and debug execution, and start a debug session.

   **Create, Build and Run the Project**
   - Do not use greater than 100 pF capacitance on Vss depending on the overall load, it will prevent the target from powering quickly when PICkit 3 is the source of power.
   - Do not use capacitors on PGC/PGD: they will divide the voltage levels since these lines have 4.7 kΩ pull-down resistors in PICkit 3.
   - Do not use multiplexing on PGC/PGD: they are dedicated for communication between PICkit 3 and the target PIC® MCU.
   - Do not use pull-ups on PGC/PGD: they will divide the voltage levels since these lines have 4.7 kΩ pull-down resistors in PICkit 3.
   - Do not use pull-ups on PGC/PGD: they will prevent fast transitions on data and clock lines during programming and debug communications.
   - Do not use diodes on PGC/PGD: they will prevent bidirectional communication between PICkit 3 and the target PIC® MCU.
   - Do not exceed recommended cable lengths: refer to the Hardware Specification section of the PICkit 3 online help or user’s guide for acceptable cable lengths.

   **Recommended Settings**

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>SETTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oscillator</td>
<td>- OSC bits set properly</td>
</tr>
<tr>
<td>Power</td>
<td>- Running</td>
</tr>
<tr>
<td>WDT</td>
<td>Disabled (device dependent)</td>
</tr>
<tr>
<td>Code-Protection</td>
<td>Disabled</td>
</tr>
<tr>
<td>Table Read</td>
<td>Disabled</td>
</tr>
<tr>
<td>Protect</td>
<td>Disabled</td>
</tr>
<tr>
<td>LVP</td>
<td>Disabled</td>
</tr>
<tr>
<td>BOD</td>
<td>Vcc &gt; BOD Vcc min</td>
</tr>
<tr>
<td>JTAG</td>
<td>Disabled</td>
</tr>
<tr>
<td>AVdd and AVss</td>
<td>Must be connected</td>
</tr>
<tr>
<td>PGCC/PGDx</td>
<td>Proper channel selected, if applicable</td>
</tr>
</tbody>
</table>

   **Target Circuit Design Precautions**

   **Target Connector Pinout**

   **Pin 1 Indicator**

   - Correct
   - Incorrect

   **Target Application PC Board**

   © 2014, Microchip Technology Incorporated, All Rights Reserved. 6/14

   www.microchip.com

   DS50020108