

# Living Space

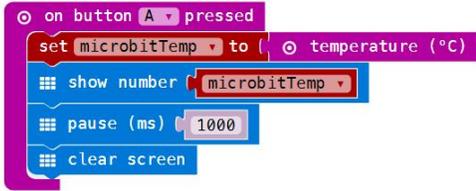
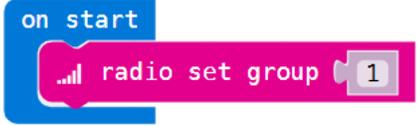
Minds-On 3 - Extension 2:

Send & Receive Temperature Data: Sender



**Video walkthrough:** <http://explorecuriosity.org/Explore/ArticleId/6337/microbit-broadcast-and-receive-temperature-walkthrough.aspx>

**Goal:** To code a micro:bit so that it will send temperature data using radio waves to another micro:bit.

Instructions- Code for the FIRST micro:bit (Sender)	Blocks
<p>Begin with the code you used in the micro:bit activity <b>3.2</b></p>	
<p>Under <i>Basic</i>, obtain the <i>on start</i> block placing it in the code editor window</p>	
<p>Under <i>Radio</i>, obtain the <i>radio set group</i> block and snap it into place inside the <i>on start</i> block. Leave the radio group set to 1.</p> <p><b>Note:</b> It is important that both the sending and receiving micro:bits use the SAME radio number (between 0 and 255), and use a different radio number than other pairs of micro:bits.</p>	
<p>Under <i>Basic</i>, obtain the <i>forever</i> block, placing it in the code editor window.</p>	
<p>In order for the micro:bit to constantly check the temperature, drag the <i>set microbitTemp to temperature</i> block out of the <i>on button A pressed</i> group and into the <i>forever</i> block.</p>	
<p>To send the temperature to another micro:bit, under <i>Radio</i> select the <i>radio send number</i> block and place it beneath the <i>set microbitTemp to temperature</i> block</p>	



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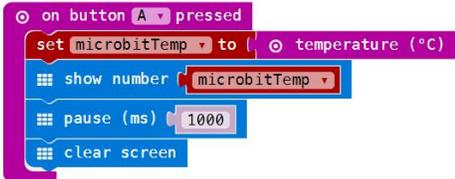
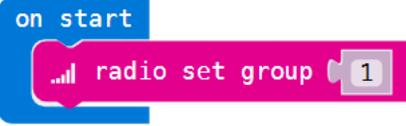
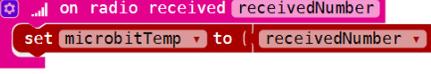
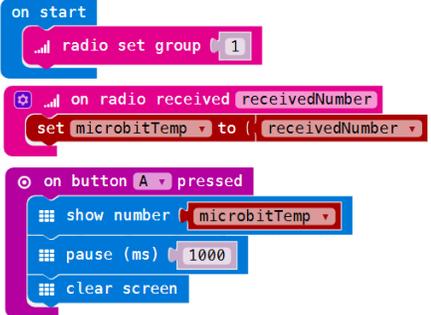


<p>Under <i>Variables</i>, get the <b>microbitTemp</b> variable and place it into the <i>radio send number</i> block.</p> <p>Under <i>Basic</i>, get a <i>pause</i> block and place it beneath the <i>radio send number</i> block. Set the pause to 5000 ms.</p>	
<p><b>Did you know?</b> When a processor has to do a lot of tasks, it can get overheated! By using <i>pause</i> blocks, the processor does not have to work as hard because it gets to rest!</p>	
<p>The final code should look like this:</p> <p>The way this works is that, on start, the micro:bit sends a radio signal on channel 1 to the receiver micro:bit. The sender micro:bit sends the temperature data (<b>microTemp</b>) using the radio signal every 5 seconds. It can also display the temperature value when button A is pressed.</p>	
<p>Save your work, <b>using a new file name</b>, and upload the code to the micro:bit</p>	





**Goal:** To code a *micro:bit* so that it will receive and display temperature data from another *micro:bit*.

Instructions- Code for the SECOND <i>micro:bit</i> (Receiver)	Blocks
<p>Begin with the code you used in the <i>micro:bit</i> activity 3.2</p>	
<p>Under Basic, get the <i>on start</i> block.</p>	
<p>Under Radio, get the <i>radio set group</i> block and snap it into place inside the <i>on start</i> block. Leave the radio group set to 1.</p> <p><b>Note:</b> It is important that both the sending and receiving <i>micro:bits</i> use the SAME radio number (between 0 and 255), and use a different radio number than other pairs of <i>micro:bits</i>.</p>	
<p>Under Radio, get the <i>on radio received</i> block.</p>	
<p>Drag the <i>set microbitTemp to temperature</i> block out of the <i>on button A pressed</i> group and into the <i>on radio received</i> block.</p>	
<p>Remove the <i>temperature</i> block and replace it with a <i>receivedNumber</i> variable from Variables.</p>	
<p>The final code should look like this:</p>	
<p>The way this works is that, on start, the <i>micro:bit</i> receive a radio signal on channel 1 from the sender <i>micro:bit</i>. The receiver <i>micro:bit</i> is constantly waiting for information on the radio signal. When it receives the radio signal, it sets the value as <i>microTemp</i>. It then displays the temperature value when button A is pressed.</p>	
<p>Save your work, <b>using a new file name</b>, and upload the code to the <i>micro:bit</i></p>	

