

Using Bluetooth®



Bluetooth is a communication technology that makes it possible to send and receive data without using wires. Using the Bluetooth features, you can set up a wireless connection between your NXT and other Bluetooth devices, such as other NXT units, mobile phones, and computers.

Once the Bluetooth connection is set up, you can use it for these features:

- Downloading programs from your computer without using a USB cable.
- Sending programs from devices other than your computer, including your own NXT.
- Sending programs to various NXT units either individually or in groups. A group can contain up to three NXT devices.



If you have a mobile phone with Bluetooth capability, you can use it to control robots. You may even be able to use it as an advanced sensor, such as a camera sensor.

Visit www.MINDSTORMSeducation.com, for more information on mobile phone requirements.

Using Bluetooth



Before you set up a wireless Bluetooth connection, make sure that your computer has Bluetooth capability.

If your computer does not have Bluetooth built-in, you must use a Bluetooth USB dongle. Make sure that you use the right type of Bluetooth USB dongle. Read more about the different types of Bluetooth dongles at www.MINDSTORMSeducation.com

Making The Connection To A PC

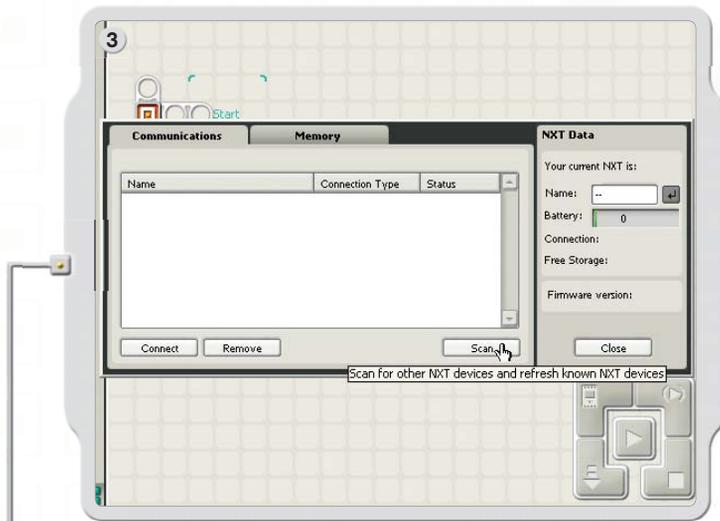


Make sure that the NXT is turned on. Also make sure that Bluetooth is set to On and that the NXT is set to Visible. (Read how in the Bluetooth Submenu on page 40). Also make sure that Bluetooth is installed and enabled on your computer.

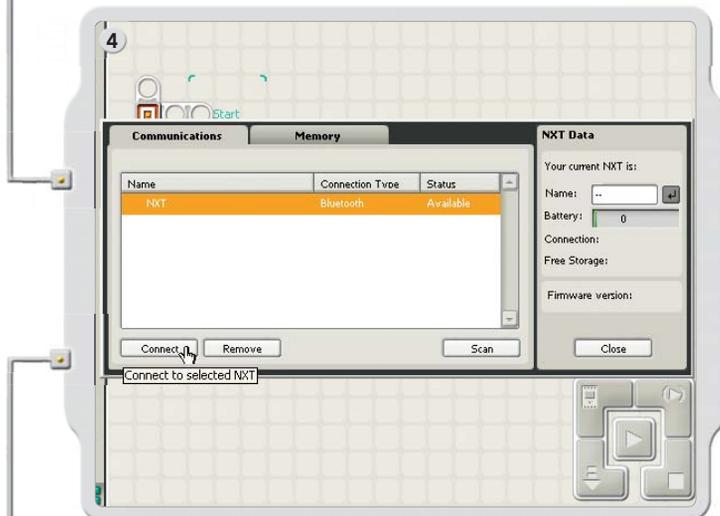


Find the Controller at the lower right work area in the software. Click on the NXT window button (the one on the upper left) and the NXT window opens.

Using Bluetooth

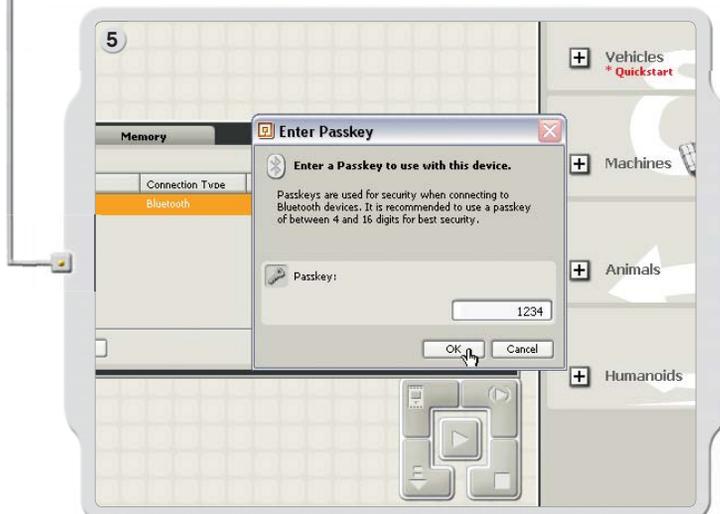


Click Scan. Your computer automatically searches for Bluetooth devices.



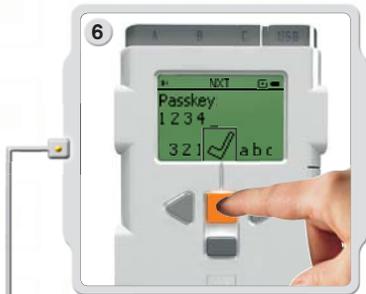
After a short interval, a list of devices appears in the window on the computer screen. Select the device to which you want to establish the connection and click the Connect button.

Note: You can increase the number of devices found by clicking Scan multiple times.

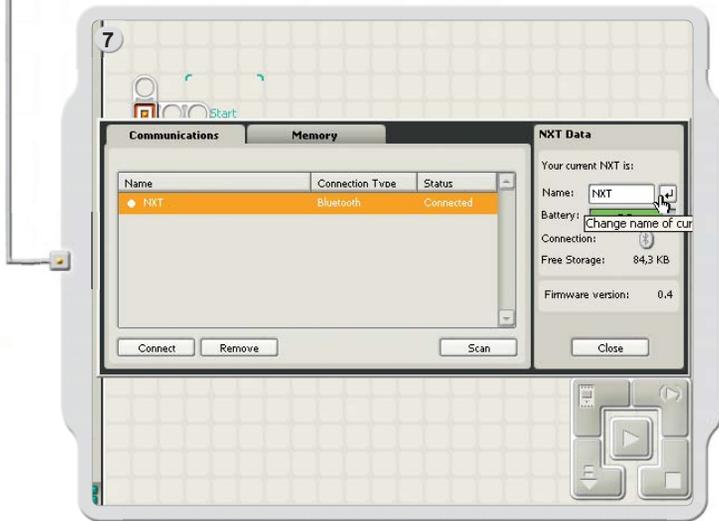


When you connect to a device for the first time, a Passkey window pops up. Enter the passkey to use with this device (the default passkey is 1234) and click OK.

Using Bluetooth



Enter the passkey on your NXT and confirm the connection by pressing the Orange [Enter] button. If you have chosen the default passkey, just click the Orange [Enter] button.



In the NXT window, the status of your NXT has now changed from Available to Connected. Your NXT and computer are now connected and can share data.

Making The Connection To A Macintosh

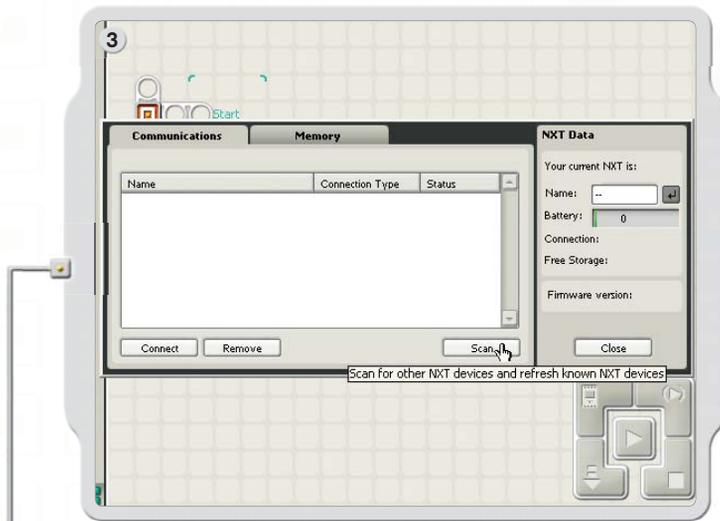


Make sure that the NXT is turned on. Also make sure that Bluetooth is set to On [On] and that the NXT is set to Visible. (Read how in the Bluetooth Submenu on page 40). Also make sure that Bluetooth is installed and enabled on your computer.



Find the Controller at the lower right work area in the software. Click on the NXT window button (the one on the upper left) and the NXT window opens.

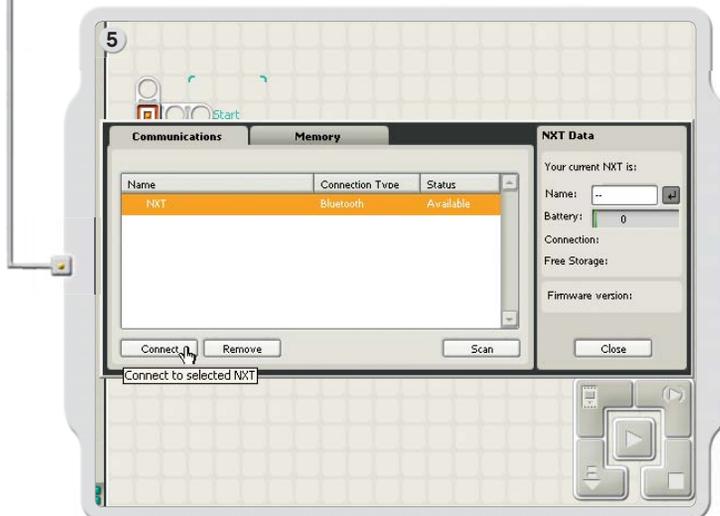
Using Bluetooth



Click Scan. The Bluetooth device window pops onto the screen.



A list of devices appears in the Select Bluetooth Device window on the screen. Select the device to which you want to establish the connection and click the Select button.



The NXT that you want to connect to appears in the NXT window as available. Click the Connect button.

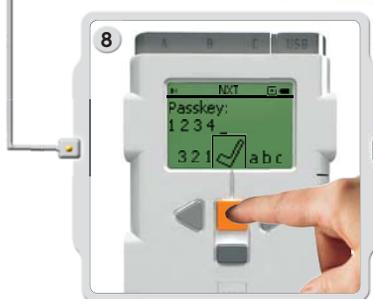
Using Bluetooth



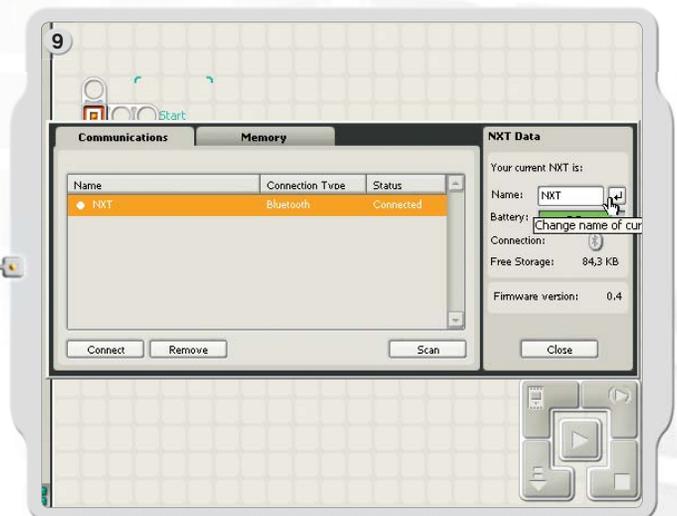
The Pair with a Bluetooth Device window pops up. Select the NXT. Click Pair.



When you connect to a device for the first time, a Passkey window pops up. Enter the passkey to use with this device (the default passkey is 1234) and click OK.



Enter the passkey on your NXT and confirm the connection by pressing the Orange [Enter] button. If you have chosen the default passkey, just click the Orange [Enter] button.



Your Macintosh and NXT are now connected and can share data.

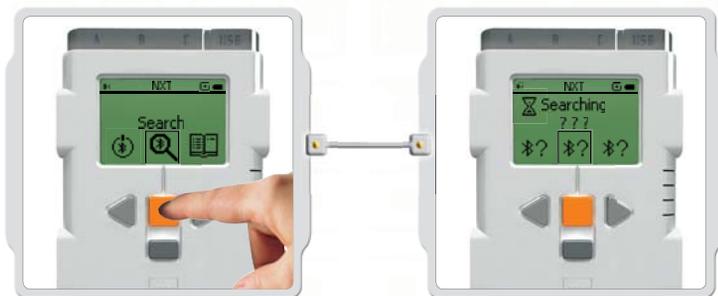
Using Bluetooth

Bluetooth Submenu On NXT



Bluetooth

Select the Bluetooth submenu on the NXT display.



Search

Search for other Bluetooth devices. After you have chosen the Search icon, the NXT will automatically start to search for other Bluetooth devices to which it can connect.



My Contacts

This list includes the devices to which your NXT has previously been connected. Devices in this contact list can automatically connect to your NXT and send it data without using a passkey. To add devices to My Contacts [My Contacts], use the Search function.

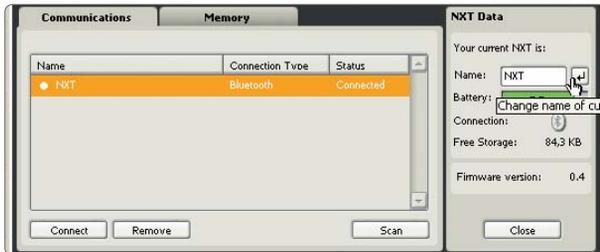


Connections

This list includes all the devices to which your NXT is currently connected. You can connect to three items at one time (Lines 1, 2, and 3) and one can connect to you (Line 0). You can only "communicate" with one at a time.

Using Bluetooth

Bluetooth and the NXT Window



You can also view the connection status in the NXT window in the software. There you can change the name of your NXT, check the battery and memory levels, and delete programs on your NXT.

Check the connection status in the icon bar at the top of the NXT display. If there is no Bluetooth icon shown, Bluetooth is Off.

-  Bluetooth is On but your NXT is not visible to other Bluetooth devices.
-  Bluetooth is On and your NXT is visible to other Bluetooth devices.
-  Bluetooth is On and your NXT is connected to a Bluetooth device.



Visibility

Use the Visible option to make your NXT visible or invisible to other Bluetooth devices when they do a Bluetooth search.



Passkey

The Passkey ensures that only Bluetooth devices approved by you can connect to your NXT. Whenever you connect to a Bluetooth device for the first time using your NXT, you will be asked for a passkey. Select the preset passkey 1234 or make up your own code. Other Bluetooth devices must know your passkey in order to confirm a connection with your NXT.



On/Off

You can turn your Bluetooth function on or off. If you turn off Bluetooth, your NXT cannot send or receive data and you will have to use the USB cable for downloading programs. To save battery power, turn off the Bluetooth function when it is not in use.

Note: Bluetooth is turned off by default.

Using Bluetooth

Connecting Your NXT to Another NXT



1 Select the Bluetooth submenu on the NXT display.



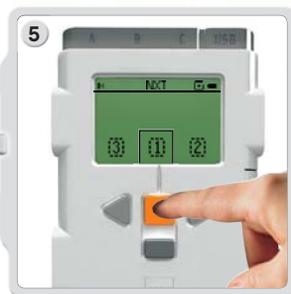
2 Select the Search icon to search for other Bluetooth devices. Your NXT automatically searches for Bluetooth devices in a range of 0-30 meters (roughly 0 to 33 yards).



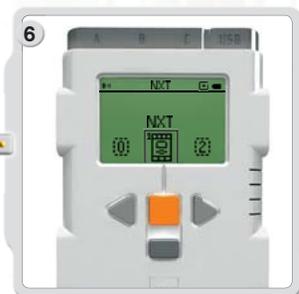
3 Depending on how many are detected in the area, the Bluetooth devices will appear in a list on the NXT display after a few seconds.



4 Select the device to which you want to connect. Remember that you can give each NXT a unique name – see Naming the NXT on page 13.



5 Select the line on which you want the connection to be listed (1, 2 or 3). You can connect your NXT to three different devices at the same time.



7 If you connect to a device for the first time, your NXT asks for a Passkey. Just press Enter to use the default passkey 1234 or make up your own code. The other Bluetooth device must know your passkey in order to confirm the connection. This means the two NXT bricks need to enter the same passkey in order to connect.

If you want to connect your NXT to more than one Bluetooth device, you can start a new Search or go to My Contacts submenu to select a trusted contact.

Using Bluetooth

Connecting to more than one NXT

You can connect three NXT bricks or other Bluetooth devices to your NXT at the same time. However, you can only communicate with one device at a time.

Sending files from NXT to NXT

It's easy to send programs from your NXT to another NXT:



Make sure that your NXT is connected to the NXT to which you want to send the program (see page 42, Connecting your NXT to another NXT). Select the My Files submenu in the NXT display and Select the program you want to send.

Select Send.
Select the connected devices to which you want the program sent (Lines 1, 2 or 3).

Your NXT then sends the file.



Connecting your NXT to a mobile phone

If you have a mobile phone with Bluetooth capability, you can use it with LEGO® MINDSTORMS® Education NXT. Go to www.MINDSTORMSeducation.com to download the MINDSTORMS Bluetooth connection program for your mobile phone. On the website, you can also find more information on how to connect the NXT to your mobile phone.