



## A.P.S. Development LLC – EduTech Sheets

Utilizing the Apple TV with a created Wireless Network and an iPad 2 or iPhone 4s for presentations

### Equipment Needed:



**Apple TV:** <http://www.apple.com/appletv/>

**Wi-fi Router:** any newer router will do, “BG” type or better is recommended

**Laptop/Computer with an Ethernet cable:** to initially setup the router

**Objective:** Utilize Apple’s AirPlay/Mirroring technology to project what is on your iPad2 or iPhone 4s screen to a HDMI projector or HDMI-capable television screen.

**Problem:** Many iDevice applications such as *A.P.S. MusicMaster Pro™* for the iPad work particularly well in the classroom environment; however, because many times teachers don’t have access to a network or their network is blocking things such as Apple’s Airplay technology, teachers can’t take advantage of these types extremely useful technologies. By creating your own Wireless LAN network, you can eliminate having to deal with any of the roadblocks created in your existing school LAN (or when presenting elsewhere) and take advantage of the freedom that the Apple AirPlay Mirroring technology provides.

**Solution:** **Create your own wireless LAN network with a Wi-Fi router.** Purchase any wireless router at your local technology or department store (typically under \$50.00 U.S.). This particular solution will not involve connecting the router to the Internet, but rather simply setting up a LAN so that the Apple TV device can communicate with the iPad2 or other iDevice through the AirPlay Mirroring technology. A vast amount of iPad software exists that does not need to be connected to the Internet to be valuable to a classroom teacher, this solution allows the creation of simple network that allows the benefits of utilizing AirPlay Mirroring in a classroom without utilizing an existing network.

### **Router Setup**

*Step one:* Power on the router and setup the router by connecting a computer to the router via a network cable. Most routers can be accessed by opening a browser window and typing <http://192.168.1.1> or <http://192.168.0.1> into the address bar line. Next, log-in to the router by using the default router user name and password. Check your router manual for specifics.

*Step two:* Setup the wireless portion of your LAN in the admin pages and set the Wireless ID of your LAN by giving it a name such as *Air-Mirror-1* and configuring any desired security options. After the router device is set up, the network cable connection may be removed from the router.

*Almost every wireless router will have a picture guide and easy-startup instructions to help with this process –it’s not as hard as it might at first appear –anyone can do it!*

### **Apple TV Setup**

*The complete Apple TV2 Manual may be found here:*

[http://manuals.info.apple.com/en\\_US/Apple\\_TV\\_2nd\\_gen\\_Setup\\_Guide.pdf](http://manuals.info.apple.com/en_US/Apple_TV_2nd_gen_Setup_Guide.pdf)

*Step three:* Plug in your Apple TV ‘s HDMI connector into the television HDMI port. Next, connect the power cord.

*Step four:* From the television, chose the correct HDMI input (HDMI1, HDMI2, HDMI3, etc.). If this is the first time you have connected the Apple TV, you may see a blank screen for a few seconds and have to choose a “language”. If after a couple of minutes the Apple TV screen menu does not appear, double check to make sure that the correct HDMI input of the television corresponds to the port that the HDMI cable was inserted.



*Step 5:* Connecting to your wireless network is easy if the wireless router/LAN has been configured properly (if a hardwired network cable is being used instead, this step completes itself automatically once it is plugged into the router). Use the Apple Remote and go to the settings/Wi-Fi-settings of the menu and select the network name “Air-Mirror-1”. *If the device is utilizing security settings, enter the correct network password that was previously setup in Step two (note, Wi-Fi selection may also appear directly after entering in the selected language above).*

*Step 6:* Follow the onscreen instructions to complete the setup – if you are not connected to the Internet (likely), it may take a minute before the Apple TV states it is connected to the LAN but not connected to the Internet... This is o.k. because we are only trying to utilize the AirPlay Mirroring at this point between the iDevices and the television – “continue” regardless.

### **iPad Setup**

*Step 7:* Connect the iPad2 or iPhone 4s to the same wireless network that you’ve just created.

Apple provides a great troubleshooting guide for this if you need it: <http://support.apple.com/kb/ts1398>

*Step 8:* Turn on AirPlay Mirroring on the iPad 2 or iPhone 4S. To do this, double-click the Home  Button to view your recently-used apps. Then “swipe” all the way to the right to until you see the  icon (it will not appear if you are not connected to the network first). Now, Tap the  icon to see the list of available AirPlay devices.

*Step 10:* Enable AirPlay Mirroring in the pop-up dialog box:



Apple provides troubleshooting tips for AirPlay Mirroring here:

<http://support.apple.com/kb/TS4085>

Once this is completed, anything that is shown on the iPad 2 or iPhone 4s will now be mirrored (and heard) on the connected television. → Teachers are no longer “tethered” to the television, projector, or computer and may move about freely to engage the students in the lesson.

### **Alternate network setup suggestion:**

Instead of utilizing a separate wireless router, try setting up an “Ad-Hoc Network” for the AirPlay devices with your own laptop or computer. (Note: some users have reported difficulty to Apple in trying to get this to work properly with the Apple TV...)

An “ad-hoc” network or “wireless ad-hoc” network is one that typically does not involve a router or access point. The computer or laptop can used to create a conduit of communication between various network devices without utilizing a router.

#### **Macintosh ad-hoc Information:**

<http://help.touch-able.com/kb/network-setup-macintosh/adhoc-network-with-mac-os-107-lion/>

#### **Windows ad-hoc information:**

<http://support.eye.fi/files/2009/07/Eye-Fi-ad-hoc-setup-instructions.pdf>

