

Field Trip # 32

Developed by:

Subject:

Short description:

Educational Level:

Field trip type:

Educational

Outcomes:

Content:

Notes to instructor:

Building a Media Server Using Raspberry Pi

Dr. Matt Campbell

Basic scripting & file transfer with Raspberry Pi

Students will learn how to build their own media server using a Raspberry Pi & open source software. It allows users to play & view most videos, music, podcasts, & other digital media files from local & network storage media & the internet.

4th – 8th Grade

Workshop

The Student will be able to:

- Format & install Raspbmc software to a memory card
- Create and/or locate multimedia content & convert it for playback on the Raspberry Pi
- Setup & boot a Raspberry Pi

Source: <http://www.raspbmc.com/> and
<http://www.howtogeek.com/119924/build-a-35-media-center-with-raspbmc-and-raspberry-pi/>

It is recommended that the instructor have at least one assistant in the lab to assist learners with the project. This learning object can easily be fit into a 50 minute time frame or expanded as time allows. This activity should be done in a computer lab or a classroom with **one laptop & one Raspberry Pi**, monitor, mouse, & keyboard for each group of 2-3 students. The instructor should have a Raspberry Pi connected to an overhead projector for demonstration.

A PowerPoint instructional slide show can be provided.

LESSON PLAN for
Beginning a Media
Server Using
Raspberry Pi

Part 1 (15 minutes: 15)

Introduce the concept of a media server & what it does

Introduce Raspberry Pi with a brief description of hardware & capabilities

Connect the Raspberry Pi to a monitor, keyboard, & mouse

Part 2 (20 minutes: 35)

Locate multimedia content for playback from sources on the internet

Create new multimedia content for playback using the webcam on the laptop

Convert the multimedia content so that it can be played back on the Raspberry Pi

Part 3 (5 minutes: 40)

Load the multimedia content to the memory card

Boot into the Raspbmc operating system

Part 4 (10 minutes: 50)

Explore using the Raspberry Pi for multimedia playback