

Field Trip # 37

Developed by:

Subject:

Short description:

Educational Level:

Field trip type:

Educational

Outcomes:

Content:

Notes to instructor:

Building a Retro Gaming Console Using Raspberry Pi

Dr. Matt Campbell

Basic scripting & file transfer with Raspberry Pi

Students will learn how to build their own retro gaming console (e.g. Atari 2600, Nintendo, Sega) using a Raspberry Pi & open source software.

4th – 10th Grade

Workshop

The Student will be able to:

- Create a bootable RetroPie disk from an image file
- Setup & boot a Raspberry Pi
- Configure EmulationStation for game play

Source: <http://lifehacker.com/how-to-turn-your-raspberry-pi-into-a-retro-game-console-498561192>

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 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 forBuilding a RetroGaming Console UsingRaspberry Pi

Part 1 (15 minutes: 15)

Describe what an emulator is & briefly how it works

Introduce Raspberry Pi with a brief description of hardware & capabilities

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

Part 2 (15 minutes: 30)

Create a bootable RetroPie disk from an image file

Load gaming ROM files to the disk

Part 3 (30 minutes: 60)

Experiment with broadcasting radio signals through the building