Field Trip # 34	Building a Retro Gaming Console Using Raspberry Pi
Developed by:	Dr. Matt Campbell
Subject:	Basic scripting & file transfer with Raspberry Pi
Short description:	Students will learn how to build their own retro gaming console (e.g. Atari 2600, Nintendo, Sega) using a Raspberry Pi & open source software.
Educational Level:	4th – 10th Grade
Field trip type:	Workshop
Educational Outcomes:	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
Content:	Source: http://lifehacker.com/how-to-turn-your-raspberry-pi-into-a-retro-game-console-498561192
Notes to instructor:	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 for Building a Retro Gaming Console Using Raspberry 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