**Activity Safety Form**

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| **Program:** | jrDEEP Summer Academy |
| **Course Title:** | Cool Code |
| **Instructor(s):** | Connor Smith, Anastasiya Martyts |
| **Season:** | Summer |
| **Year:** | 2014 |
| **Project/Activity Name:** | Introduction and Eastereggs |
| **Source:** |  |
| **Grade Level:** | 5-6 |
| **Topics Covered By Activity:** | Introduction to the Raspberry Pi  Using the Linux environment |
| **Objective (Learning Outcomes):** | Ability to navigate the file system using the command line.  View, write and save basic text files. |
| **Safety Approval Date:** |  |

Please identify specific safety hazards in the table below

|  |  |  |
| --- | --- | --- |
| **Check if applicable** | **Hazard** | **Why is this required?** |
| X | Electricity | To power Raspberry Pi’s and monitors |
|  | Open Flame |  |
|  | Projectiles |  |
|  | Natural Gas |  |
|  | Compressed Air |  |
|  | Glassware |  |
|  | Dissection Equipment |  |
|  | Biological Material/Specimen |  |
|  | Chemicals |  |
|  | Tools (ex. soldering iron, hacksaw, drill)  **Please specify in the materials list** |  |
|  | Other: |  |

Safety Materials/P.P.E. Required for this Activity

|  |  |  |
| --- | --- | --- |
| **Check if Required** | **Safety Material/Personal Protective Equipment (P.P.E.)** | **Explanation (Specify when this is required i.e. is this during preparation and/or while the activity is taking place and who wears/uses the piece of P.P.E. i.e. Instructor, student etc. please be explicit)** |
|  | Goggles |  |
|  | Lab Coats |  |
|  | Nitrile Gloves |  |
|  | Table Coverings |  |
|  | Fume hoods |  |
|  | Biosafety Cabinets |  |
|  | Spill Kits |  |
|  | Disposal Mechanisms (ex. broken glass, biologics, chemicals) |  |
|  | N95 Masks |  |
|  | Other: |  |

**Background Information:**

**The Raspberry Pi**

The Raspberry Pi is essentially a complete computer system that is the size of a credit card. Introduced in 2006, the Raspberry Pi contains storage material (SD Card) a processor, USB Ports and VGA ports. Initially they were developed to build application-specific computers which would carry out well defined and limited tasks with the Python programming language.

**The Linux Operating System**

An operating system is basically the software which computers have to run in order to control their hardware. Operating systems are responsible for writing, reading and locating files on the hard drive and for controlling how the processor deals with other running applications. While many different operating systems can be used on the Raspberry Pi system, the most common one are Linux-based. Linux is a 100% free operating system which can accomplish all of the same tasks as commercial operating systems and is completely customizable and configurable.

**The Command Line**

One of Linux’s main strengths is its robust command-line. A command-line is effectively a way of telling the computer what to do without having to use the mouse. Every task can be accomplish on the command line with (usually) just a few commands.

Common Commands:

* cd [directory] – Go to that directory/folder
* ls – List all of the files in the current directory
* ./[File] – Execute the file if possible
* gedit [file] – Open the file in the text editor ‘gedit’
* python [file] – compile a python file to be executed with ./[file]

**Preparation:** Instructors should be familiar with the Linux file system and the command-line.

**Procedure:**

1. Introduce campers to the Raspberry Pi, Linux and command line
2. Have them navigate to different folders through the command line
3. Have the last folder they navigate to have an easteregg python program. Make sure they run that and compare with their neighbors (5 different easter eggs) Make it like bingo where they need to find 4 other people with different eastereggs and get to know them.

**Student Take Home/Materials Kept:**

**None**

Materials **(Please include all materials including consumable items, tools, stationery, arts & craft supplies, chemicals, biologics, etc.).** Please identify (in the notes column) any hazardous materials PRODUCED as a result of the project/activity.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Item** | **Quantity** | **Purpose in Activity** | **Route of Transmission** | **Anticipated Health Risk** | **Safety Precautions** | **Storage/Disposal Arrangements** | **Notes** |
| Raspberry Pi | 1 Each | Programming |  |  |  |  |  |
| SD card (4 GB) | 1 Each | Programming |  |  |  |  |  |
| Power Cable | 1 Each | Programming |  |  |  |  |  |
| Monitor | 1 Each | Programming |  |  |  |  |  |
| HDMI Cable | 1 Each | Programming |  |  |  |  |  |
| HDMI to DVI Adaptor | 1 Each | Programming |  |  |  |  |  |
| Keyboard | 1 Each | Programming |  |  |  |  |  |
| Mouse | 1 Each | Programming |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

Use the below chart to inform how you fill out various sections of your Activity Safety Sheet.

|  |  |  |  |
| --- | --- | --- | --- |
| Anticipated Health Risks (Use the following relevant descriptions in the materials table) | | Safety Precautions (Use these and other descriptions the show how you will specifically address each of the safety precautions mentioned on the left side of this table.) | |
| 1 | Materials are sharp and may cut skin (Utility Knives, Scalpels, Scissors) | 1 | Instructors will advise on the appropriate use of materials (for 1-10 above) |
| 2 | Materials may poke or pierce skin (Wooden Skewers, Sticks) | 2 | Instructors will review the MSDS for materials prior to and during the activity (3-8) |
| 3 | Materials are toxic if ingested (Chemicals such as Bleach, Detergents, Indicators) | 3 | Participants will wear dust or N95 masks at all times (4 and 5) |
| 4 | Materials are hazardous if inhaled (Chemicals, Powders, Dust, Solder) | 4 | Participants will wear nitrile gloves at all times (6) |
| 5 | Materials are an irritant to lungs (Chemicals, Powders, Dust) | 5 | Participants will wear goggles at all times (7) |
| 6 | Materials are an irritant to skin (Chemicals, some Soaps, Allergens) | 6 | Students will be instructed on the use of the eye station in-lab (7) |
| 7 | Materials are an irritant to eyes (Chemicals, Powders, Dust) | 7 | Instructors will have a fire extinguisher within arm’s reach while performing activity (8) |
| 8 | Materials are flammable/Use of Open Flame (Alcohol, Gases, Fuels, Matches) | 8 | Instructors will establish a safety perimeter of 5m while performing the activity/during testing (8 and 10) |
| 9 | Participants may present serious allergies (Nuts, Shellfish, Milk, Eggs, Fruits, Food Colouring) | 9 | Instructors will review student allergies prior to commencing activity (9) |
| 10 | Materials are or can be involved as projectiles (Rocks, Golf Balls, Rockets) | 10 | Instructors will advise of any hidden allergens (9) |
| 11 | Materials present a slipping hazard if spilled | 11 | Instructors will monitor participants for indications of an allergic reaction (9) |
| 12 | Materials are hot and may burn skin. (glue guns, soldering irons) | 12 | Instructors will review the procedure with students, prior to testing (1-10) |
|  |  | 13 | Instructors will explain any necessary emergency protocol (always) |
|  |  | 14 | Instructors will debrief and discuss any sensitive issues before, during and after the activity (always) |
|  |  | 15 | Only Instructors with training will complete the specified activity or demo always. |
|  |  | 16 | Spill Clean up kit provided (11) |
| Routes of Transmission | | Questions to ask about your Materials and Activity (Address any that are relevant in your above Activity Safety Sheet) | |
| 1 | Eyes | 1 | Are there any ethical concerns regarding your workshop? |
| 2 | Skin contact | 2 | Are there any sensitive issues or activities? |
| 3 | Inhalation | 3 | Are there safety concerns if specific procedures are not followed? |
| 4 | Ingestion | 4 | Do any of the materials have an MSDS? |
| 5 | Other (please specify) | 5 | Do any of the materials or activities require special training? |
|  |  | 6 | Questions to ask about your Materials and Activity (Address any that are relevant in your above Activity Safety Sheet) |