**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:** | Loopy Bean Bags |
| **Source:** | Our brains! |
| **Grade Level:** | 5-6 |
| **Topics Covered By Activity:** | Loops |
| **Objective (Learning Outcomes):** | In this activity, students are going to explore how loops work, but on a more physical, less abstract level. Students are expected to appreciate the repeating nature of loops and the necessity to be able to regulate the repetition to use loops effectively. |
| **Safety Approval Date:** |  |

Please identify specific safety hazards in the table below

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| **Check if applicable** | **Hazard** | **Why is this required?** |
|  | Electricity |  |
|  | Open Flame |  |
| x | Projectiles | Kids will be running relays with small bean bags, which might be thrown or tossed (although all students will be instructed not to do that and to handle the bean bags carefully). |
|  | 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:** (Outline any information that would be required to support the activity. Assume the person reading this Activity Write-Up isn’t a specialist on this topic.)

A loop in computer programming is a small part of the program that runs over and over – from a few times (as instructed by a programmer) to infinity – looping forever! Loops are quite handy when a program needs to perform repetitive tasks, such as adding a series of numbers, sorting items, or even reading input from the user.

There are two major types of loops – for loops and while loops. Remember, loops are still instruction for a computer – they tell the computer what to do! While loops essentially say “While some condition holds, keep running.” For loops say “For every item you process, keep running until you have gotten through all the items.” This will make a little more sense soon.

In this activity, a loop will be simulated by each group of students. Each group will get a set number of bean bags.

To simulate a for loop, the group will be required to run across the field one by one and drop off their bean bags at the other end. Once all the bean bags are on the other side the loop is considered broken and stops running – i.e. the relay ends.

To simulate a while loop, students will be running relays bringing bean bags to one side of the field, then to the other, until the instructors order to stop. At the time that the students are instructed to stop, the while loop is broken.

**Preparation:** (Outline any preparation work that must be completed by you and/or anyone else (lab techs, volunteers, etc.) prior to class time. Please be as detailed as possible, and highlight any health and safety protocols to be followed.)

Instructors must make small sand bags/bean bags prior to this activity. ~ 30 bean bags in total.

**Procedure:** (Please detail **all** the steps required to complete this project/activity. State what will be done by instructor(s), counselor(s) i.e. certain steps, entire demonstration, etc. and what will be done by your students. Outline any Safety procedures required due to location/venue of activity.)

1. Split up the class into 4 groups of 6.
2. Give each group 6-10 sandbags (based on what is available), ensuring every group has an equal number of sandbags.
3. Explain tot eh kids the two parts of the relay activity: in the first part, the relay goes on until all the sandbags have been moved to the opposite side of the field and in the second part, the relay goes on until instructors signal to stop.

**Diagrams or any supplemental information (attach/embed if applicable):**

**Curriculum Connection (Optional)**

**Additional/Extension Activities & Procedure (if applicable):**

* Bulleted List

**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** |
| Sandbags/bean bags | ~30 | Represent data being processed by a loop. |  | Same as those of any projectile. | Students will be instructed to behave safely when using the sandbags. |  |  |
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Use the below chart to inform how you fill out various sections of your Activity Safety Sheet.

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| 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) |