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| **SAFE WORK INSTRUCTION** | |
| **3D Printing Activities with The Edge** | |
| Activity Authorisation / Supervision | This activity can be conducted with general supervision and does not require specific authorisation. |
| Description of the Activity | The Edge delivers a range of entry-level 3D printing activities to participants. These include practical, hands-on instruction in:   * Using measuring tools and CAD applications to design printable models * Preparing CAD files for 3D printing. * Preparing and calibrating 3D printer for printing. * Monitoring, finishing and refining print jobs. |
| Tools, Equipment, Materials and Consumables | 1. Digital Media Lab or Fabrication Lab computers (iMac, MacPro or MacBook/ PC laptops provided by The Edge) 2. Android tablets/ iOS iPad and mobile devices provided by The Edge 3. Private laptop, tablet or mobile device. The use of private laptops and mobile devises is subject to the *Bring Your Own Device guidelines*. 4. Projectors / display devices provided by The Edge. 5. Craft/ Utility Knife 6. Scissors 7. Dremel handheld rotatory tool 8. Makerbot Replicator 2 9. Allen Keys 10. Precision Screwdrivers 11. Printing Filament - PLA 12. Paint scraper |
| Interim Safety Assessment (ISA) | An Interim Safety Assessment (ISA) must be completed and approved by a Program Coordinator before commencement of an activity when:   1. The activity will not be facilitated by an SLQ staff member or inducted contractor. 2. The activity will not be conducted in and around The Edge or on SLQ premises *(see SWI for Activities to be Conducted Off-site or in a Public Space).* 3. The activity requires the use of tools, equipment, materials or processes not detailed in Section 2 or 3. |
| Hazards associated with equipment /machinery/technique /process | Most activities in this skill area occupy a low risk profile with the majority of activities taking place in controlled environment of The Edge’s Basement Fabrication Lab.  The general risks associated with these standard activities include:   1. Trip, slip falls 2. Electric shock 3. Ergonomic & screen based work 4. Personal safety and 5. Communicable disease   Workers and participants are exposed to greater risks as a greater range of tools, processes and materials are employed. Risk of injury from the wider range of tools, processes and materials listed in Section 3 include:   1. Burns from hot plastic or printer parts 2. Cuts, abrasions and small crushing injuries from knives, pliers, cutters, screwdrivers and or Dremel. |
| Before Starting | 1. Check workspace for general tidiness. 2. Ensure all required equipment and materials are in the workspace and ready for use in the session. 3. Where possible re-route cables trailing across walkways. Use cable trays or gaff were unavoidable. 4. Consumption of food and drink in activity spaces is to be avoided where possible. Clear any spills immediately. 5. Encourage ergonomic work practices and encourage regular breaks. 6. Encourage good manual handling practices and provide appropriate equipment (trolleys, truck & straps for securing loads) to assist with larger loads. 7. Address interpersonal difficulties according the *Patron Responsible Behavior Policy* and seek assistance from VSOs or SLQ staff member on duty. 8. *VSO Daily Procedures* include daily wiping down of all tables, keyboards, mice and computer screens with antibacterial wipes. However if you have particular concerns do not hesitate to collect wipes from reception and rewipe these surfaces. 9. **Ensure all powered (240v+ corded) tools/ devices to be used in a workshop have a current tag test sticker.** 10. **Familiarize yourself with each of the moving parts and hot parts of the 3D printer.** 11. **Conduct preflight checks of**      1. **Print bed calibration**     2. **Filament spool operation and plastic stock level.** |
| Personal protective equipment (PPE) to be used | 1. Appropriate clothing and foot-ware should be worn at all times during this activity. 2. Hearing and Eye protection will be required for the use of some tools and materials listed in Section 3. (Dremel ) |
| Emergency procedures | 1. There are no special emergency procedures specific for this activity. In the event of an emergency notify VSO or SLQ staff member on duty and await instruction. 2. First aid kits are located at Reception, the Back of Lab 4, The Edge staff office, SLQ Reception and the Cultural Centre Security Office. 3. The Cultural Centre Security office phone number is 07 3840 7216. 4. All incidents, **including near misses**, are to be reported to VSO or staff member on duty. |
| Step by step procedures for task | 1. Only use tools for the job they have been designed for. (Eg using a screwdriver as a leaver, chisel or awl.) 2. Cutting tools (scissors, knives, dremel etc) will be pointed away from the body when in use and pointed down when being transported around the space. 3. Where possible ensure work is secured positively to the workbench before applying any force in the use of any of the following tools - screwdrivers, pliers, knives, dremel. 4. Wash hands after soldering or handling electronic components. 5. Staff and Participants are not to introduce electrical/ electronic equipment or devices to an activity space that has not been deemed safe prior to the commencement of the activity. 6. **Always ensure print job is set up for the correct print temperature for the particular filament and current setup of the printer.** 7. **3d printers are to be monitored at all times whilst in operation. Print jobs are to be placed on cold pause while unmonitored.** 8. **Always watch carefully that printer lays down the first few layers cleanly.** |
| Clean-up procedures | 1. Participant benches will be cleaned down of any offcuts and all tools are to be returned to their place in the storeroom. |
| Waste disposal procedures | NA |
| Record keeping | NA |
| Prepared by: Date: | Mick Byrne, Program Officer, The Edge  29 July 2014 |
| Approved by, Date: | Daniel Flood, Creative Manager, The Edge  July 2014 |
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