Template only MUST modify to site conditions

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| Site / Area: |       | Date of Assessment |       | Risk Assessment # | **021RA** |
| Completed by (name) |       | Signature |       |
| In Consultation with: |       | Signature |       |
| Identify / describe activity, equipment, area or event you are assessing: | 3D PRINTER(Polylactic Acid – PLA; Acrylonitrile Butadiene Styrene – ABS) |
| Authorised by: |       | Signature: |       | Date: |       |
| **In conjunction with this risk assessment, training / education and development of a relevant SOP may be required.** |
| **Step 1:** **Identify the hazard/s / Impact:**What do you believe are the hazards?What could happen? | **Step 2: Assess the potential risks:**What do you believe are the risks?How could this happen? | **Step 3: Reducing the risk:**What do you believe can be done to reduce the risk?Controls |
| **Extreme Temperatures*** High temperatures
 | * Contact with hot extrusion head or finished model could cause burns
* Fire
 | * Enclosed system
* Wear oven gloves when removing parts from the heat treatment oven
* Keep paper and combustibles away from the 3D printer
* Never leave 3D printer unattended while in use (for long hour printing, check intermittently)
* Fire extinguisher available (CO2 or dry powder)
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| **Hazardous Chemicals*** Toxic emissions
* Fumes and particles
* Ultrafine particle (UFP)
* Volatile Organic Compounds (VOC)
 | * Exposure to uncured and partially cured 3D printer material fumes can result in health effects on the respiratory system
 | * PLA filaments preferred over ABS.
* Ventilation / extraction system installed
* Carbon filters / HEPA filters in use
* Used in well-ventilated room where windows can be open & or there is good air flow
* Safety Data Sheets (SDS’s) available
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| **Electricity*** Frayed cords
* Faulty appliances
* Overheating equipment
* Cutting cords
* Contact with exposed wires
 | * Burns
* Fire
* Explosion
* Electrocution
* Electric shock
 | * Printer is tested & tagged
* RCD installed at main switchboard and checked regularly
* Repairs & modifications by competent person only
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| **Machinery & Equipment*** Mechanical hazards (stepper motors, pulleys, threaded rods, carriages and small fans)
 | * Entrapment / entanglement
* Lacerations
* Cuts
* Bruising
 | * Ensure 3D printer is covered with a protective hood / cabinet, fitted with an interlocking switch to prevent it from being open / opened whilst in operation
* Hair, loose clothing is secured
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| **Airborne Contaminants*** Post Printing – dust (UFP)
 | * Respiratory problems
* Foreign body in eye
 | * Avoid sanding; use scraping tools to clean up student models.
* Eye protection to be worn
* Work done in a well-ventilated area.
 |
| **Other*** Tools (used for cleaning e.g. metal scraper / knife blade to clean build plate)
 | * Cuts
* Lacerations
 | * Cleaning to be carried out by a competent person.
* **Students are NOT permitted to clean the 3D printers**
 |
| * **Other**
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| **Review hazard / risk assessment if task or circumstances change & at intervals appropriate to the level of risk (minimum 5 years)** |
| **Step 4: Monitor & Review:** |
| Were the controls effective? | Were there any unforeseen hazards / incidents? | New controls |
| Yes | [ ]  | No | [ ]  | Yes | [ ]  | No | [ ]  |
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