HALF-DAY RUN SHEET

3D Printing Professional Learning

Practical skills for useful classroom printing.

08:30 - 12:30 | Two modules

TIME	SESSION
08:30 - 09:00	**Arrival** Refreshments and introductions
09:00 - 10:30	**Module 1: Introduction to 3D printing** Presentation
10:30 - 11:00	**Morning tea** Break
11:00 - 12:30	**Module 2: Get printing** Practical session
12:30 - 13:30	**Lunch** Half-day teaching ends at 12:30; participants may stay for lunch.

Venue, equipment, refreshments and workshop-tour arrangements are confirmed with your booking. This is the programme outline; activities may be adapted to the group and available facilities.

MODULE 1 | 09:00 - 10:30

Introduction to 3D printing

Additive manufacturing fundamentals

- How building a part layer by layer differs from subtractive manufacturing.
- An introduction to FDM, stereolithography, laser sintering and Multi Jet Fusion, plus specialist approaches such as layered paper and house printing.

A closer look at classroom FDM printers

- Printer configurations, the three axes and their control systems.
- Hot ends and extruders: how they work and where their limits lie.
- Common printing materials, which can be used and why.

From model to printer

- Slicing a model into toolpaths; balancing precision, mechanical properties and overhangs; exploring advanced settings.
- Meshes, file types, model repositories and CAD-created files.
- Where 3D scanning can fit into classroom work.

10:30 - 11:00 | Morning tea

MODULE 2 | 11:00 - 12:30

Get printing

Work with real machines

- Create slicing profiles for different models, allowing for print duration, material properties and the forces a part will experience.
- Assess bed adhesion and support requirements.
- Set up and level printers; load and unload different filaments.
- Change nozzles and compare the results.
- Calibrate machines and identify errors or inconsistencies.
- Explore print-bed surfaces and adhesive treatments.

Troubleshooting and ongoing care

- Recognise common classroom printer failures and interpret what a failed print reveals.
- Follow a consistent sequence of checks for first-layer, adhesion and levelling problems.
- Investigate extrusion, nozzle and filament faults.
- Plan weekly, termly and annual checks; choose useful spare consumables and store filament appropriately.

Teaching finishes at 12:30

Lunch is scheduled for 12:30 - 13:30. Half-day participants are welcome to stay, subject to the arrangements confirmed for the session.