3D PRINTING INDUCTION PRESENTATION

SLQ Wiki Fabrication Lab 2024/10/05 06:28

~~REVEAL~~

3D PRINTING INDUCTION PRESENTATION

For the...

Prusa i3 Mk3s

In this induction you will learn

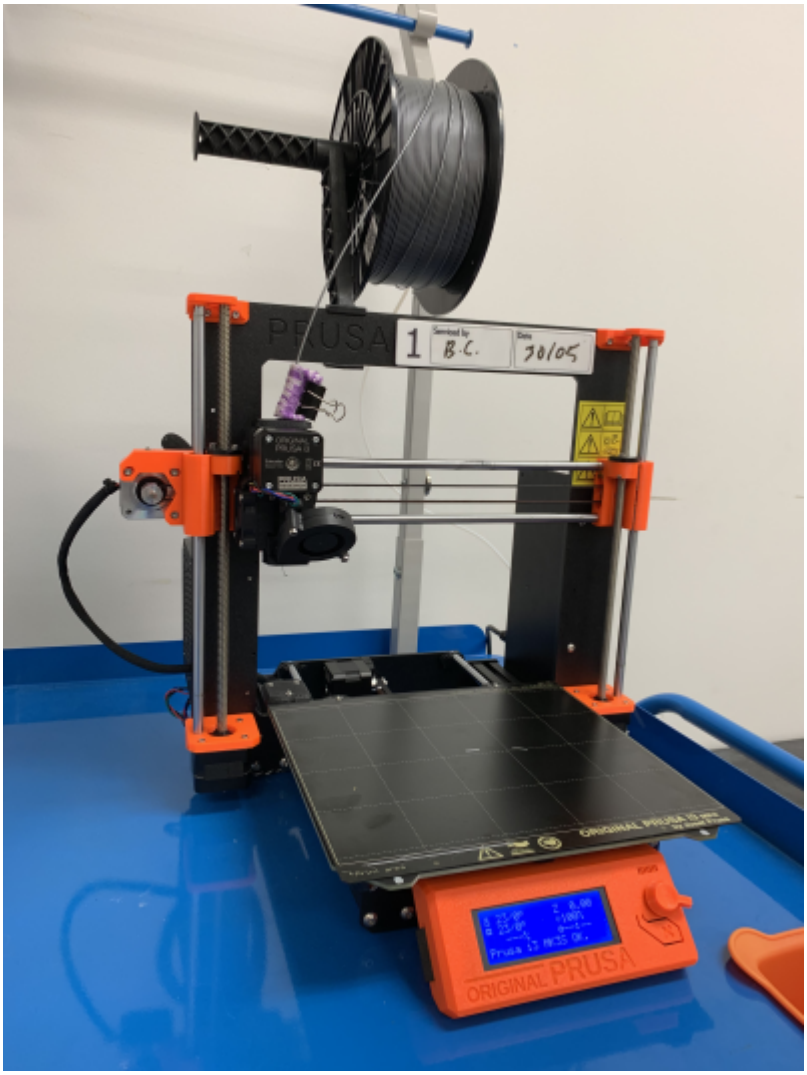
- the safe efficient operation of a 3D Printer
- what you can achieve with a 3D Printer
- a basic intro to designing for 3d printing TinkerCad
- how to prepare a simple design for printing.
- how to identify problems and what to do when problems occur.

Requirements

- A State Library of Queensland Patron Account.
- Closed footwear.
- Participants must be over 16 years of age
- 3D Printing Assessment paperwork (supplied)

Prusa i3 MK3s+

The Prusa i3 MK3s+ is a successor to Original Prusa i3 MK3 with hardware and software upgrades which lead to improved reliability and ease of use and assembly.



The Edge purchased 5 Prusa i3s printers to replace the ageing Up mini 2s.

Summary

- Build volume – (250(W) x 210(D) x 210(H) mm (11,025 cm3)
- 0.4mm nozzle
- PEI print surface

FILAMENT MATERIALS

In theory, the Prusa i3 Mk3s+ can be set up to print using a range of filaments including:

PLA	Polylactic acid (Starch based)
ABS	Acrylonitrile butadiene styrene
PETG	Polyethylene terephthalate (Glycol modified)
Nylon	Polyamide
Composite Materials	Often PLA with carbon fiber, metal or wood fill

HIPS	High-impact polystyrene
PVA	Polyvinyl acetate (Water-soluble Print support)
PP	Polypropylene

In practice, we control the types of filaments permitted for printing, due to the emissions they produce when melted. For the full range, see: Supported Filaments

Overview

Printer Components

Prepping your 3d model for printing

Printing with Prusa i3 MK3s

3D printing induction presentation

Maintenance

Daily Setup

Routine Maintenance

Changing Filament Roll

Troubleshooting

Manual

prusa3d_manual_mk3s_en_3_11.pdf

Induction Materials

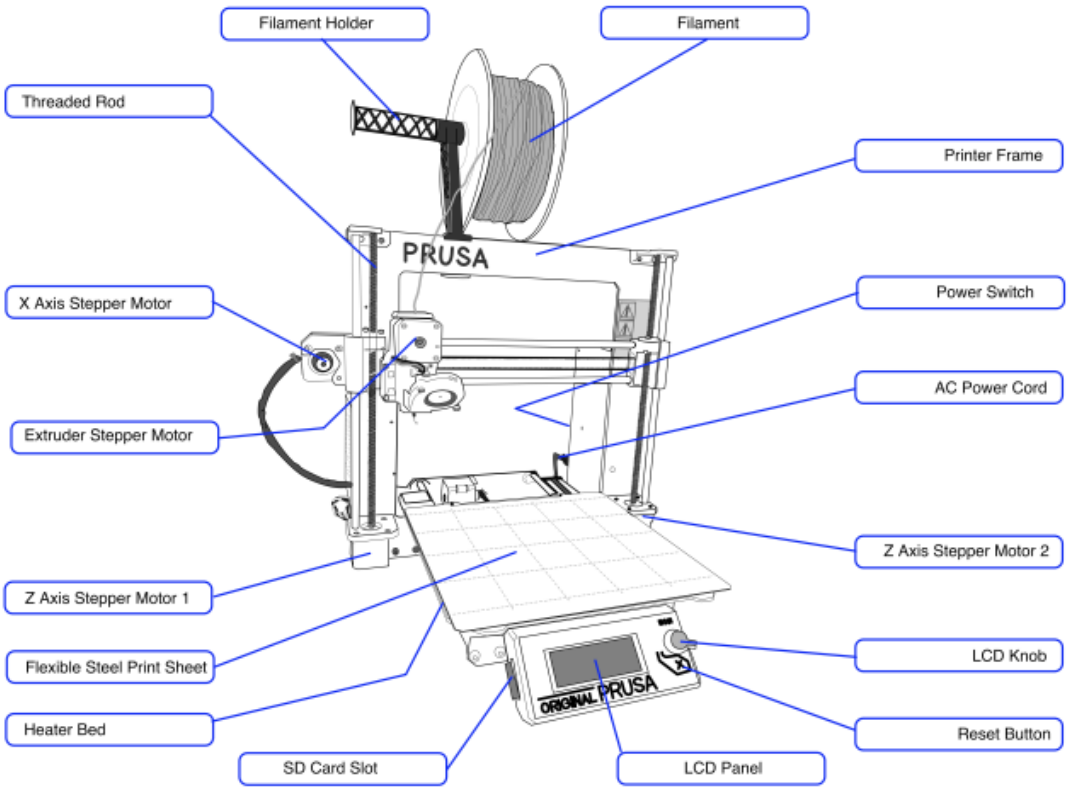
3D Printing Induction Form

3D Printing Induction Teachers edition

3D printing operations

Below describes guidelines for coordinating public access of the 3D printers.

Prusa i3 Mk3s Components

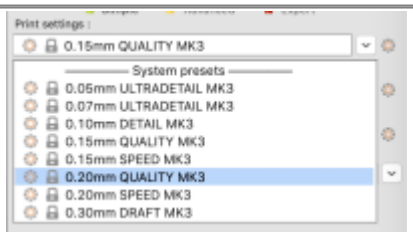
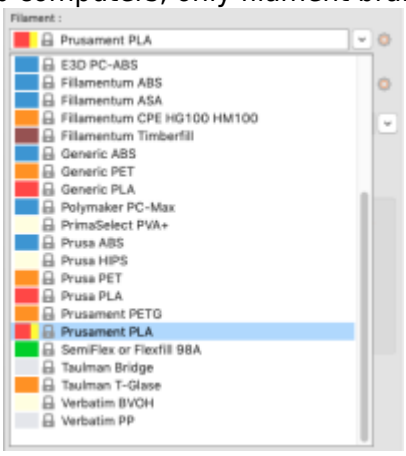
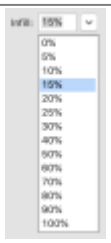


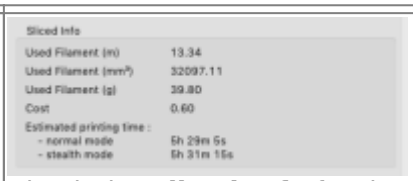
Prusa Slicer

Prusa Slicer is the version of 3d Slic3r adapted for the Prusa i3 MK3S

Prepping your 3d model for printing

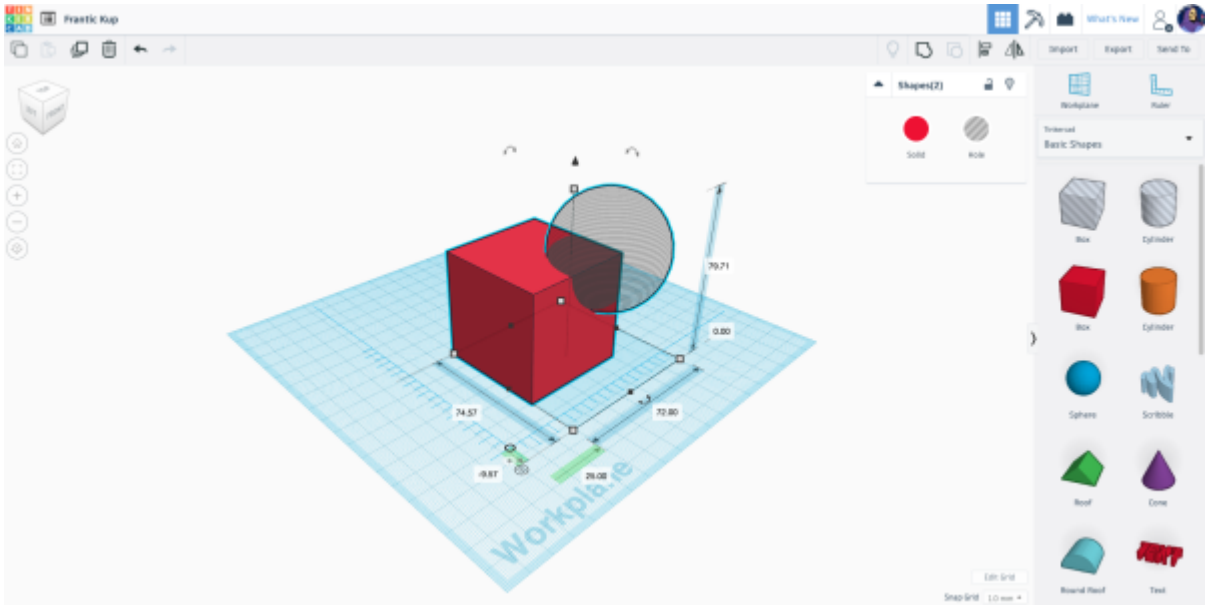
1	Open the **PrusaSlicer** application. If you are prompted that a Configuration Update is available, click to install the update before proceeding further.

2	Use the **Add**  button to load models into PrusaSlicer
3	**Delete**  **Delete All**  buttons remove the model(s) from PrusaSlicer opens the detailed settings of print , filament and printer
4	Use **Move**,  **scale**,  **rotate**  , **Place on Face**  and **cut tools**  to prepare the model to printing in the most efficient/ effective orientation,
5	Select a **Quality** / **Speed** setting for your print 
6	Material selection (on Fabrication Lab computers, only filament brands/polymers provided in the Lab will appear in the dropdown list) 
7	Select a **Supports** setting 
8	Select an **Infill** percentage 
9	Click **Slice**  to *slice* the model into layers in the Z axis and select **layers preview**  to view infill land

10	 Check the **Sliced Info** for the cost and how long its going to take to print before exporting your gcode *The Edge charges 15cents / gram and your print needs to be finished before the Lab Closes - talk to the Fab Lab Supervisor if you have a long job you'd like to do .*
11	Generate and export *gcode* to the SD Card by clicking the **Export G-Code** button  .

Hint	Right-click on model opens a context menu
Hint	Switch between 3D editor and Layer Preview by clicking  & 

Designing for 3D printing in TinkerCad



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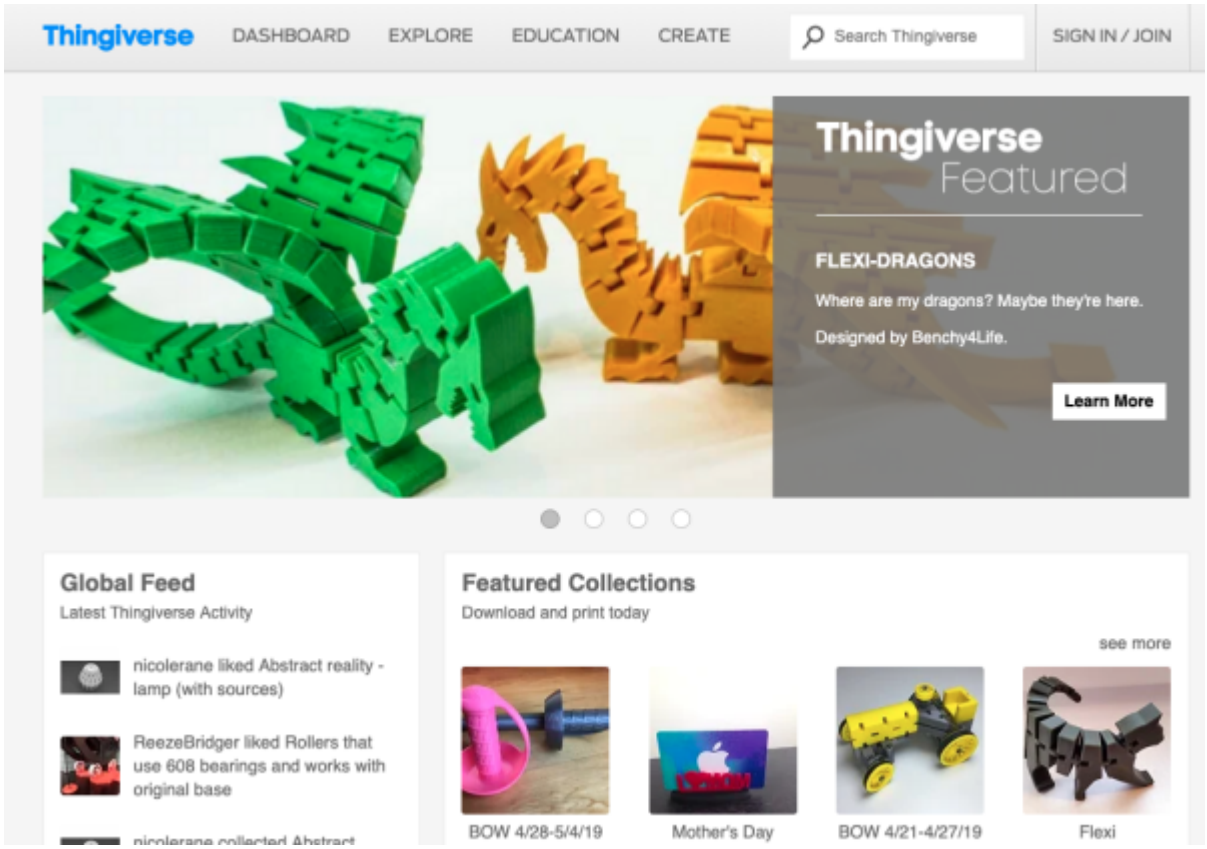

Induction Paperwork PDF

Induction Paperwork Affinity Designer File