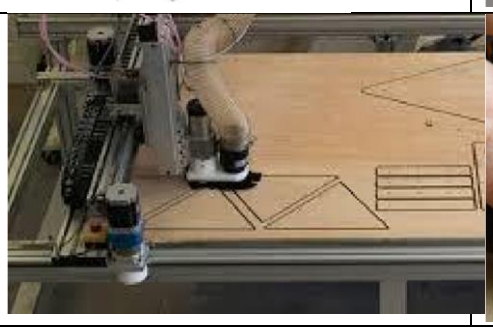
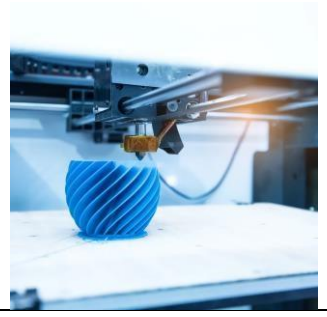
Fab Lab Machines Chart

UNICEF Gil program

	CNC machine	Laser cutter	Vinyl cutter	3D printer
Type of manufacturing	Subtractive manufacturing (Remove material)	Cutting and Etching	Cutting	Additive manufacturing (Builds prototype by adding material)
Machine Use	CNC machining is a manufacturing process in which pre-programmed computer software dictates the movement of factory tools and machinery. The process can be used to control a range of complex machinery, from grinders and lathes to mills and routers. With CNC machining, three dimensional cutting tasks can be accomplished in a single set of prompts.	Laser cutting is a technology that uses a laser to slice materials. While typically used for industrial manufacturing applications, it is also starting to be used by schools, small businesses, and hobbyists. Laser cutting works by directing the output of a high-power laser most commonly through optics.	A vinyl cutter is a type of computer-controlled machine. The computer controls the movement of a sharp blade over the surface of the material. This blade is used to cut out shapes and letters from sheets of thin self-adhesive plastic (vinyl).	3D printing uses computer-aided design (CAD) to create three-dimensional objects through a layering method. Sometimes referred to as additive manufacturing, 3D printing involves layering materials, like plastics, composites or bio-materials to create objects that range in shape, size, rigidity and color.
Job duty	Cut wood in 2D and 3D shapes Cuts Pvc and Plexiglas	Cuts (2D) and engrave cardboards, wood, foam boards and Plexiglas	Cuts vinyl sheets	Print 3D prototypes
Dimensions (The dimensions might slightly vary according to the brand)	130 X 250 cm (Placed on ground) Height = up to 180 cm (including bridge)	60 X 90 cm (Placed on ground) Height = up to 110 cm	Width=120 cm (Placed on ground) Height = up to 120 cm	54.9 x 49 x 56.1 cm
Machine photo				
Physical outcome examples				
Specs	Specs Sheets attached			
Brands (recommended as per Unicef's budget)	• Custom made (as described in the CNC specs sheet)	• Custom made (as described in the laser cutter specs sheet)	• Mimaki	• Flashforge
Model	Not applicable - Custom made	Not applicable - Custom made	CG-FXII Series –CG 60 SRIII	FlashForge Guider IIS
Year	Not applicable - Custom made	Not applicable-Custom made	-	2018
ISO Standard	• ISO 230 • ISO 229:1973 • ISO 369:2009	ISO 9001	ISO:9001	ISO:9001 Particular ISO Under development Can be tracked here: https://www.iso.org/standard/75842.html
Dust collector	SHOP FOX W1685 1.5-Horsepower 1,280 CFM Dust Collector	Not applicable	Not applicable	Not applicable
Exhaust filter	Not applicable	Machine specific (supplied)	Not applicable	Not applicable